SECRET

8 March 1977

NOTE FOR: C/M&AS

25X1A FROM : [redacted]

SUBJECT : Annual Defense Report

1. You asked me to look through the attached DoD Budget document to see if anything in it might impact on the DDA or the Agency.

2. Section I (what I call the "Doom and Gloom" section) spells out the perceived threat and the necessary U. S. Defense strategy to meet that threat. There are many comparisons between U. S. and U.S.S.R. expenditures for defense, various weapons systems, manpower commitments, etc., which may or may not be valid, but they serve to justify and increase in U. S. defense spending.

3. Section II addresses individual defense programs (i.e., nuclear forces, conventional forces, security assistance, etc.), the basis for the programs and individual justifications which relate to the picture drawn in Section I.

4. It is written in very broad, general terms, addresses overall programs rather than specific elements, and deals very heavily in military strategy. I did not find anything that would be of specific interest to the DDA. To the extent that CIA's intelligence collection and production on Soviet military (force strengths, capabilities and intentions) support DoD policy decisions, that impact has probably already been made.

5. One interesting point, however, that I was not aware of before is the fact that DoD incorporates U. S. inflation into their budget estimates.

[redacted]

25X1A

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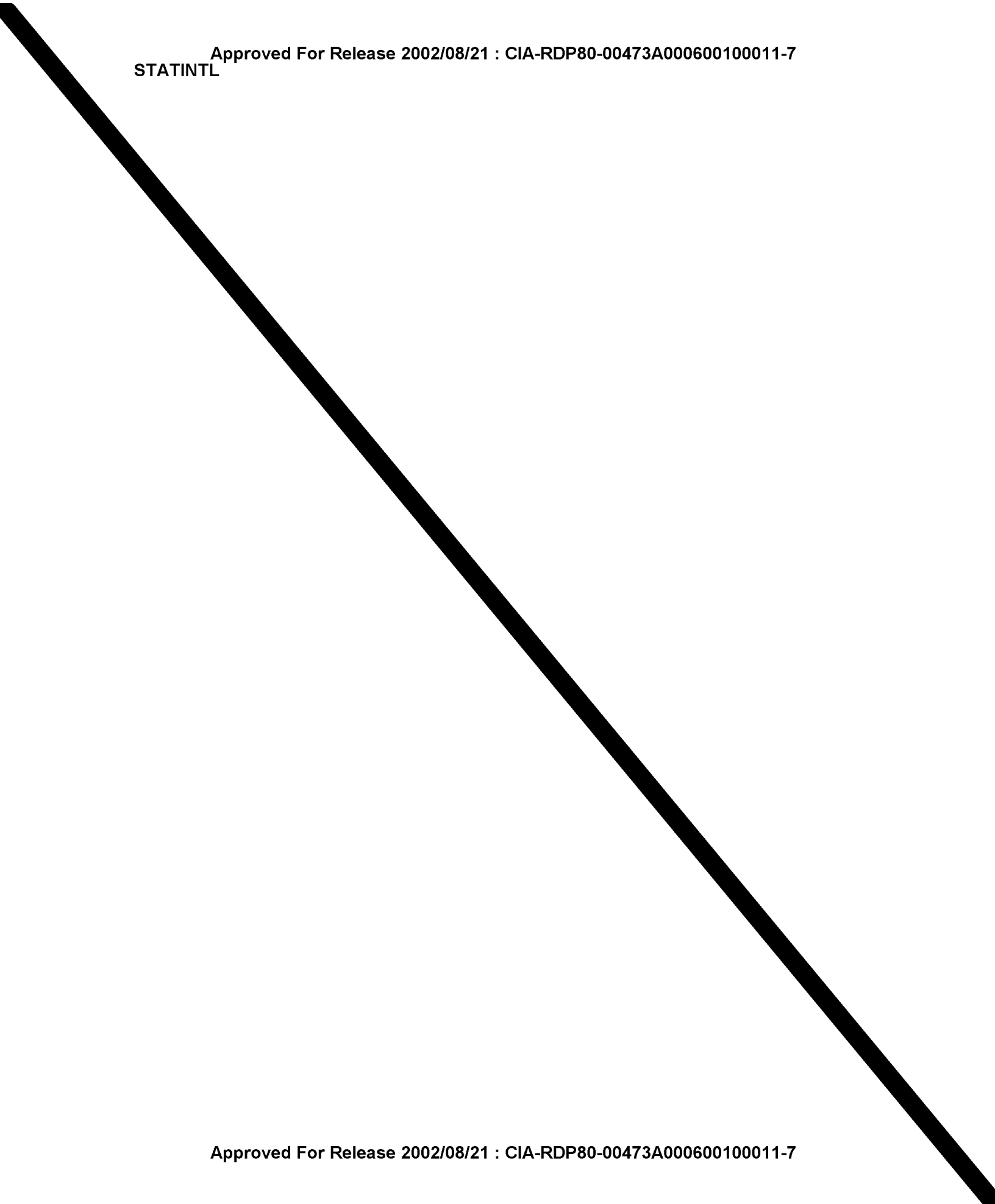
STATINTL



SECRET

DD/A Registry
77-0434

OFFICE OF THE SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301

18 JAN 1977

25X1A [redacted]
Deputy to DCI for the
Intelligence Community
Central Intelligence Agency
Room 7D59
McLean, Virginia 20505

25X1A [redacted]

I am forwarding with this letter 15 copies of the classified FY 1978 Annual Defense Report.

Stacer

M. Stacer Holcomb
Rear Admiral, USN
Military Assistant

Enclosures: (a/s)

DISTRIBUTION BY IC REGISTRY 24 JAN 1977

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SECRET

REPORT OF SECRETARY OF DEFENSE

DONALD H. RUMSFELD

TO THE CONGRESS

ON THE

FY 1978 BUDGET, FY 1979 AUTHORIZATION REQUEST
AND FY 1978-1982 DEFENSE PROGRAMS

JANUARY 14, 1977

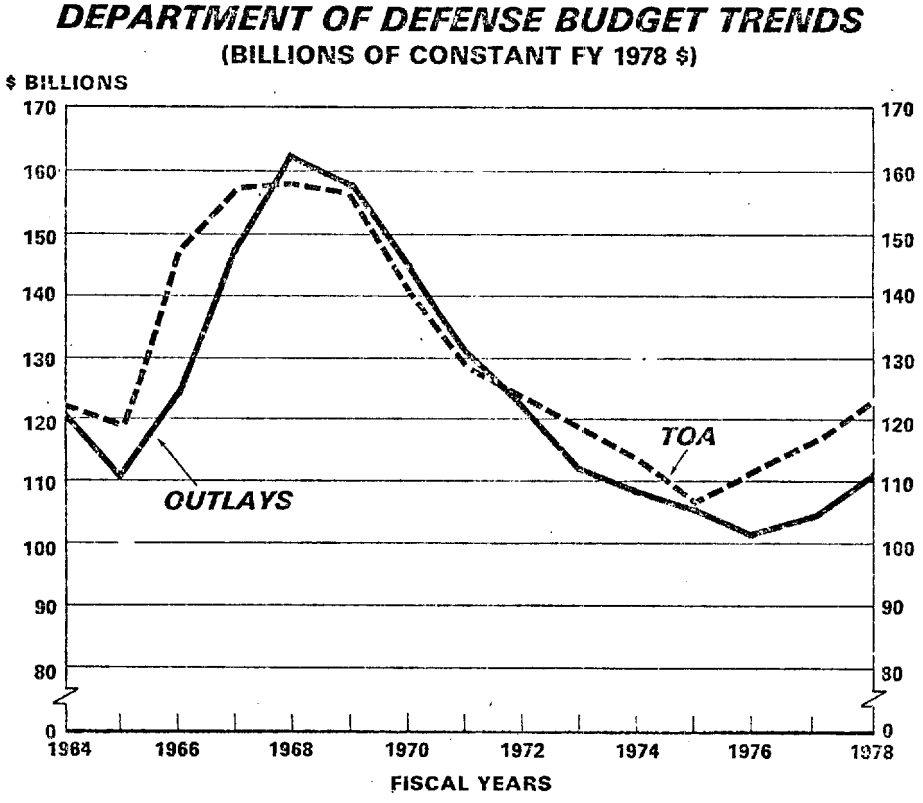
NATIONAL SECURITY INFORMATION
Unauthorized Disclosure
Subject to Criminal Sanctions

CLASSIFIED BY The Secretary of Defense
EXEMPT FROM GENERAL DECLASSIFICATION
SCHEDULE, E.O. 11652, EXEMPTION CATEGORY 3,
DECLASSIFY ON 31 DECEMBER 1993

EXECUTIVE SUMMARY

FY 1978 DEFENSE REPORT

The task of the U.S. Department of Defense -- indeed the first responsibility of the United States government -- is to protect the lives and liberties of the American people in a world that is difficult, tense, and even dangerous for those who seek to live in freedom and dignity. The FY 1978 Defense Report sets forth the conditions we face, together with U.S. national security goals and needs. This summary describes the main trends in the international environment and the path we are taking to meet the dangers and opportunities of the period ahead.



I. Past Years and Future Requirements

In the past two and a half years, the administration of President Gerald R. Ford has recorded a number of accomplishments in the realm of national defense:

-- the morale of the men and women of the U.S. armed forces has continued to improve and the American people increasingly recognize the contributions the armed forces make to our security and to peace and stability in the world;

-- the President and the national security leadership have been necessarily forthright with the country as to the magnitude and momentum of Soviet defense outlays and the resulting expansion of their military capabilities over more than a decade;

-- the downward trend in U.S. defense spending (measured in constant dollars) has been reversed; and

-- serious efforts have been undertaken to achieve equitable arms control agreements which are in the national interest.

Real growth in the U.S. defense efforts in FY 1976 and FY 1977 has enabled us to improve defense and deterrence by:

-- needed modernization of U.S. strategic forces;

-- expansion of the Army's conventional force to 16 active divisions and their modernization;

-- steps toward restoration of the Navy's capability for two-ocean sea control and the projection of power;

-- expansion of the Air Force to 26 tactical fighter wings;

-- improved combat readiness on the part of the forces;

-- added research and development to strengthen U.S. technology.

The accomplishments have been accompanied by some disappointments, several of which require consideration by the new Congress.

-- Reductions in the defense budgets proposed by successive Presidents have retarded the rate of modernization and expansion of U.S. forces; it has been less than that demanded by the continued growth in Soviet military capabilities;

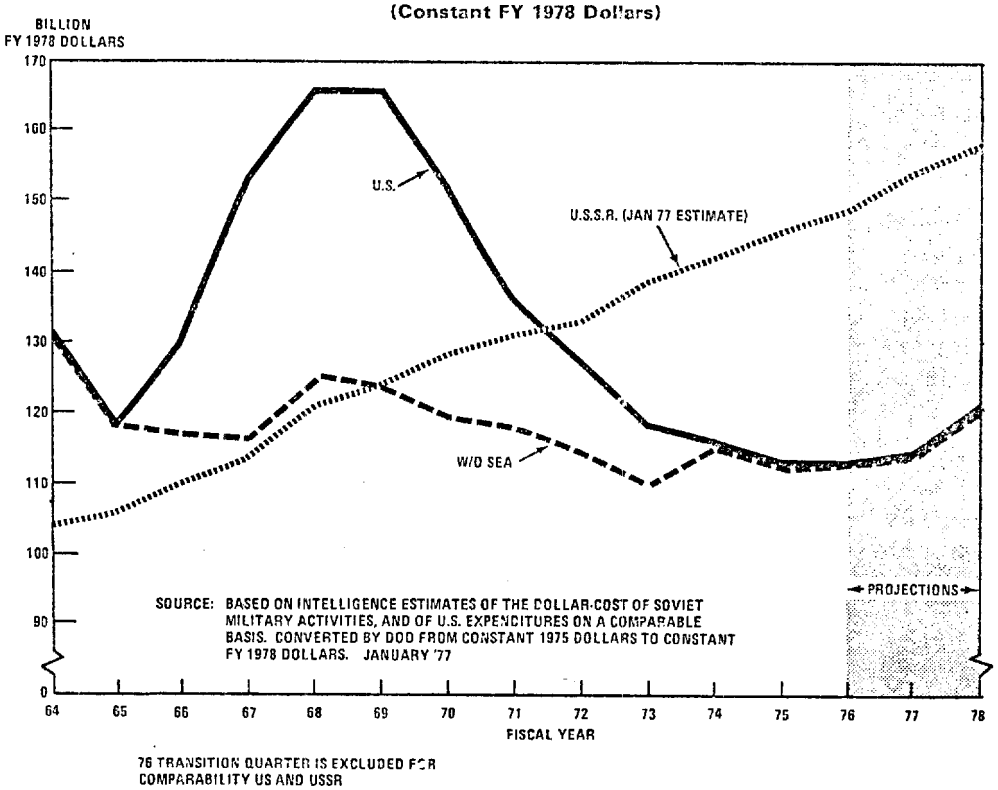
-- Reluctance to accept technological advance endangers U.S. security. We must strive to maintain the U.S. technological superiority which has contributed so much to our security over past decades.

-- Support to improvements in strategic mobility is necessary to avoid an inefficient use of scarce resources and a shortage of capability to reinforce and resupply forward deployed forces.

-- Support by the Congress of a number of restraints is necessary to reduce waste, inefficiencies, and misplaced priorities. Realignment of bases to fit the numbers and needs of present day forces is essential to avoid serious consequences to overall efficiency and effectiveness.

The Defense Report for FY 1978 is presented against this background. Last year, the FY 1977 Report stressed the growth in Soviet military power relative to that of the United States because of decisions made over the previous decade. To reverse that unacceptable course, President Ford proposed a real increase in last year's defense budget. Although $3.8 billion of the FY 1977 request was not approved, the budget, as passed, did provide a real increase of 5.8 percent between FY 1976 and FY 1977. Since the problem of security demands a long-term commitment of steady growth and modernization, even more effort will be required of us in the coming fiscal years.

U.S. AND SOVIET DEFENSE PROGRAM TRENDS
(U.S. Outlays and Estimated Dollar Costs of Soviet Programs)
(Constant FY 1978 Dollars)



The Soviet Union, whatever its purposes, is without question engaged in a serious, steady, and sustained effort which, in the absence of a U.S. response, could make it the dominant military power in the world.

Neither the high quality of U.S. technology and weapons nor the considerable talents and skills of the men and women of the armed forces will continue to make up for the quantitative advantages of such an adversary. As in the past, forces and weapons systems adequate to meet U.S. national security requirements do not come cheaply.

It is with such considerations in mind that the President presents his defense budget for FY 1978 and the projected Five-Year Defense Program. Total obligational authority of $123.1 billion and outlays of $110.1 billion are requested for FY 1978. Totals for FY 1977 and those now projected for the Five-Year Defense Program are shown in the following table:

Five-Year Defense Program (Billions of Dollars)
(Fiscal Years)

	1977	1978	1979	1980	1981	1982
Total Obligational Authority						
Current Dollars	110.2	123.1	135.4	145.8	156.7	166.8
FY 1978 Dollars	116.7	123.1	128.8	132.3	135.7	138.6
Outlays						
Current Dollars	98.3	110.1	121.2	133.7	145.5	156.3
FY 1978 Dollars	104.5	110.1	115.2	120.9	125.6	129.0

Proposed real growth in total obligational authority from FY 1977 to FY 1978 will be about 6.8 percent, practically all of which will go to the investment accounts -- primarily procurement and research and development. Based on current assumptions about expected pay and price increases during the period of the Five-Year Defense Program, real growth from FY 1978 to 1982 should continue to be substantial and, most of it, again, will be concentrated in investment accounts.

The ability of the United States to afford such expenditures is not in question. Indeed, we cannot afford to withhold the resources required for strength, stability, and peace. Although security must surely rank first among the nation's priorities, its price is small. In FY 1977, even after the Congress had provided for a real increase, the Defense share of GNP, of federal and total public spending, and of the total labor force was the lowest since before the Korean war.

U.S. DEPARTMENT OF DEFENSE BUDGET

FINANCIAL SUMMARY

	FY 1964	FY 1968	FY 1976	FY 1977	FY 1978
DOD/MAP as Percentage:					
Federal Budget (Outlays)	42.9%	43.6%	24.1%	23.9%	25.0%
Gross National Product	8.2%	9.4%	5.5%	5.4%	5.4%
Labor Force	8.3%	9.9%	5.0%	5.0%	5.1%
Net Public Spending	28.6%	29.7%	15.9%	16.0%	16.5%

II. Basis of the Projected Efforts

Our nation simply cannot allow Soviet capabilities to continue expanding and U.S. capabilities to retrench -- as they have over the past decade -- without inviting an imbalance and, ultimately, a major crisis. The solution does not lie in adopting any specific or fixed annual increases in the defense budget; there is no magic percentage by which Defense resources must expand each year. Nor should we design the U.S. defense posture as the mirror-image of an opponent's capabilities, simple as this might appear; that would miss the essence of systematic planning and could rapidly lead to major and expensive absurdities in force posture.

U.S. planning must include changes brought about by military technology. A number of major consequences have already followed from such technological advances:

-- to a degree unprecedented in its history, the United States has become directly vulnerable to attack;

-- the nation must now maintain three basic types of military force -- strategic nuclear, theater nuclear, and conventional -- with defense budgets which must be higher than during the seemingly quieter years before World War II; and

-- the potential destructiveness of new weapons leads reasonable people to recognize that nuclear forces are instruments of last resort, and that the more traditional conventional capabilities remain of fundamental importance in today's world. In essence, we are seeing a revival in the importance of non-nuclear military capabilities.

The U.S. defense posture does not and cannot be made to relate directly to the short-term objectives and tactics of U.S. foreign policy, although it can and does contribute in a fundamental way to the environment in which foreign policy is formulated and conducted. In the geopolitics of an increasingly interdependent world, the U.S. defense establishment constitutes one set of instruments -- along with diplomatic, economic and other means -- at the disposal of the nation, and a diverse array of capabilities is needed to achieve national objectives. Since long lead times are required to develop modern military capabilities, decisions made today determine the capabilities, not of today, but of the decades ahead.

The world of today is no longer one of many great military powers. There are only two major powers -- the United States, which is the primary champion of freedom, self-determination, and international pluralism, and the Soviet Union, which has an imperial domain already sprawled over two continents and is the primary advocate of a command economy, centralized control, and the subjugation of the individual to the state.

Unfortunately, U.S. views on international issues and on the importance of freedom are not expanding in the world. On 26 key issues before the United Nations in 1974 and 1975 -- including the resolution equating Zionism with racism and one eliminating the UN Command for Korea -- few nations shared the U.S. perspective. In fact, less than one-tenth of the member states voted as we did on a majority of these issues; over half voted against our position nearly every time. Those who voted consistently as we did total 13 nations out of over 140.

Nor is personal freedom flourishing. Freedom House, a private research organization, reports that less than one-fifth of mankind enjoys a degree of freedom even approximating our own, while nearly half the world's population lives under a dictatorial regime of one stripe or another. The United States and its friends believe in self-determination for ourselves and others; the Soviet Union and its allies do not.

Some might say that sounds like "cold war" rhetoric. I consider it simply the truth, and we best serve our ideals by talking the truth. To do otherwise would be to grant "moral parity" to authoritarian systems.

Despite these fundamental differences, today's world is one of growing interdependence. Nations and peoples increasingly rely upon each other for supplies, industrial and agricultural goods, markets, investments, and technical know-how.

From a defense perspective, we find that modern conventional weapons are no longer the exclusive property of the larger industrial states. Nuclear technology threatens to spread to many areas. A geopolitical map of the world shows the United States politically, economically, or culturally more dependent and more involved with other states and peoples than ever before in its history. These conditions, combined with the

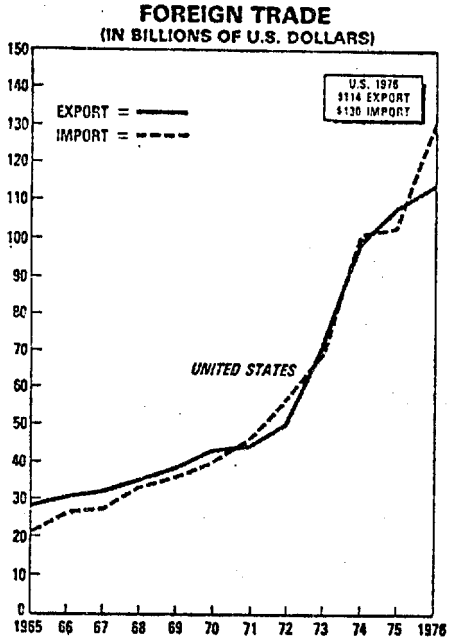
weakening of the traditional international order, the collapse of old empires, and the rise of the Soviet Union as an active world power, make bold action across the oceans both more necessary and more dangerous. Events in a distant corner of this increasingly interdependent world cannot be ignored by the United States.

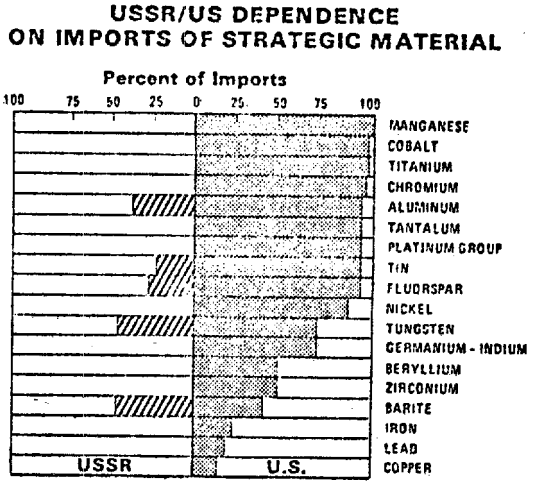
Recognizing these facts, the United States has engaged in a search for the peaceful and equitable settlement of international differences. In particular:

-- it was the United States which first sought seriously to control strategic nuclear arms and achieve mutual and balanced force reductions in Europe; and

-- it was the United States which struggled to end the fighting in the Middle East and successfully concluded three agreements among former belligerents.

While extensively involved in these efforts, we have kept the main and continuing interests of the United States firmly before us. Our fundamental interest lies in preserving the independence and territorial integrity of the United States and its possessions. Close behind are political and economic interests we share with various nations and alliances. These interests are worldwide in nature; they impel our determination to preserve freedom of the seas and of space.



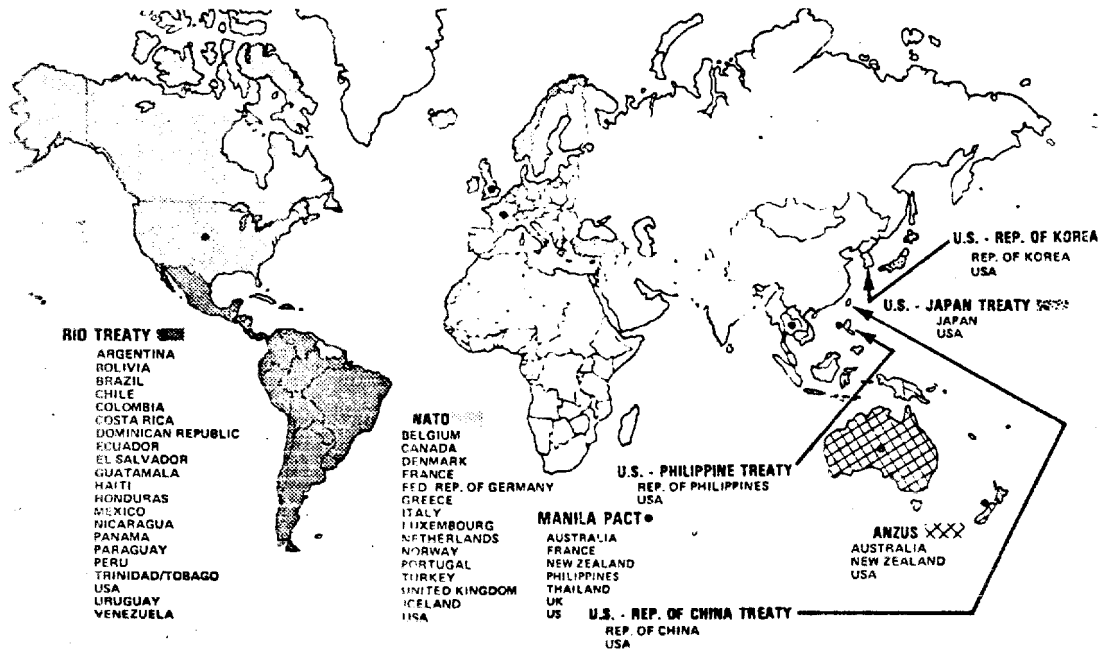


III. Conditions of Peace and Security

To create and maintain the conditions of peace and security in the world is in large part to avoid actions and conditions which are provocative -- belligerence on the one hand, weakness (which can be equally provocative) on the other. Either can encourage others into adventurism they might otherwise avoid. The obligation of government is to preserve the strength, determination, and flexibility needed to achieve U.S. goals and contribute to stability around the world.

Helping to establish the conditions of peace means avoiding a military imbalance in the world. Not only is a global nuclear balance necessary; so are a number of balances in regions vital to our interests. Precisely because traditional power depends upon large quantities of military equipment and supplies, long lines of communication, freedom of airspace, and control of essential seas, the U.S. must maintain strategic positions and forward deployed forces. These, in conjunction with the system of alliances we have maintained during the past three decades, provide leverage on prospective enemies and help to keep potential conflict from American shores.

DEFENSE ALLIANCES & TREATIES WITH U.S.



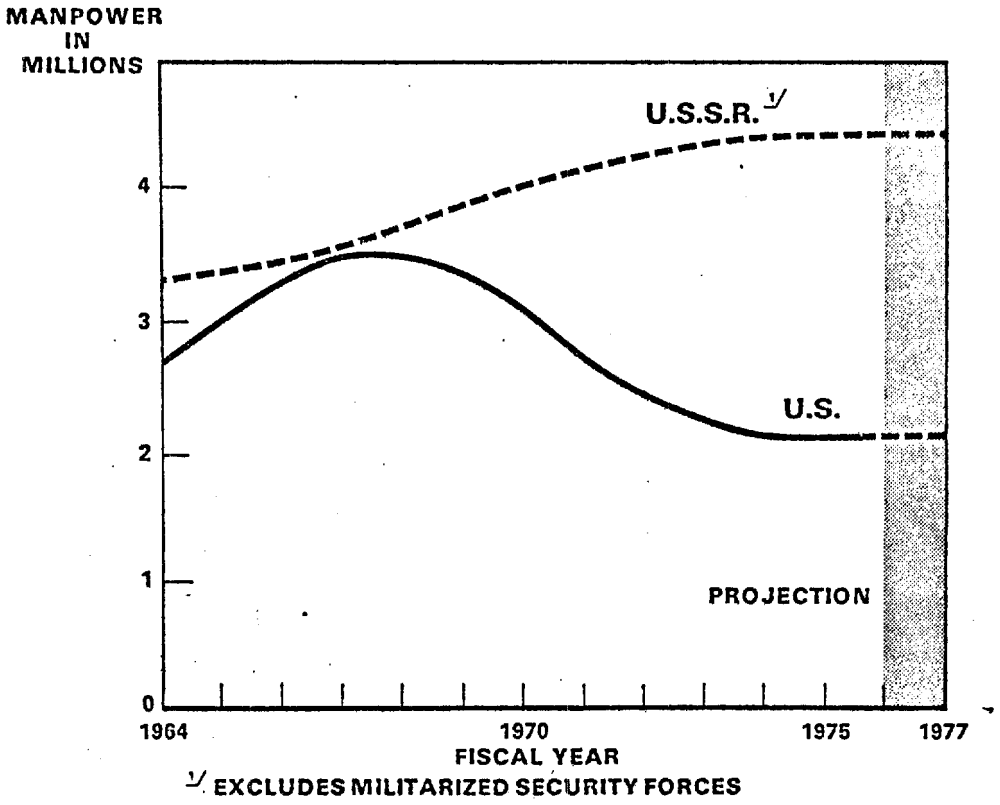
IV. Foreign Military Capabilities

It is a fact that the greatest potential threat to the United States comes from the Soviet Union. Absolute proof eludes us about the intentions

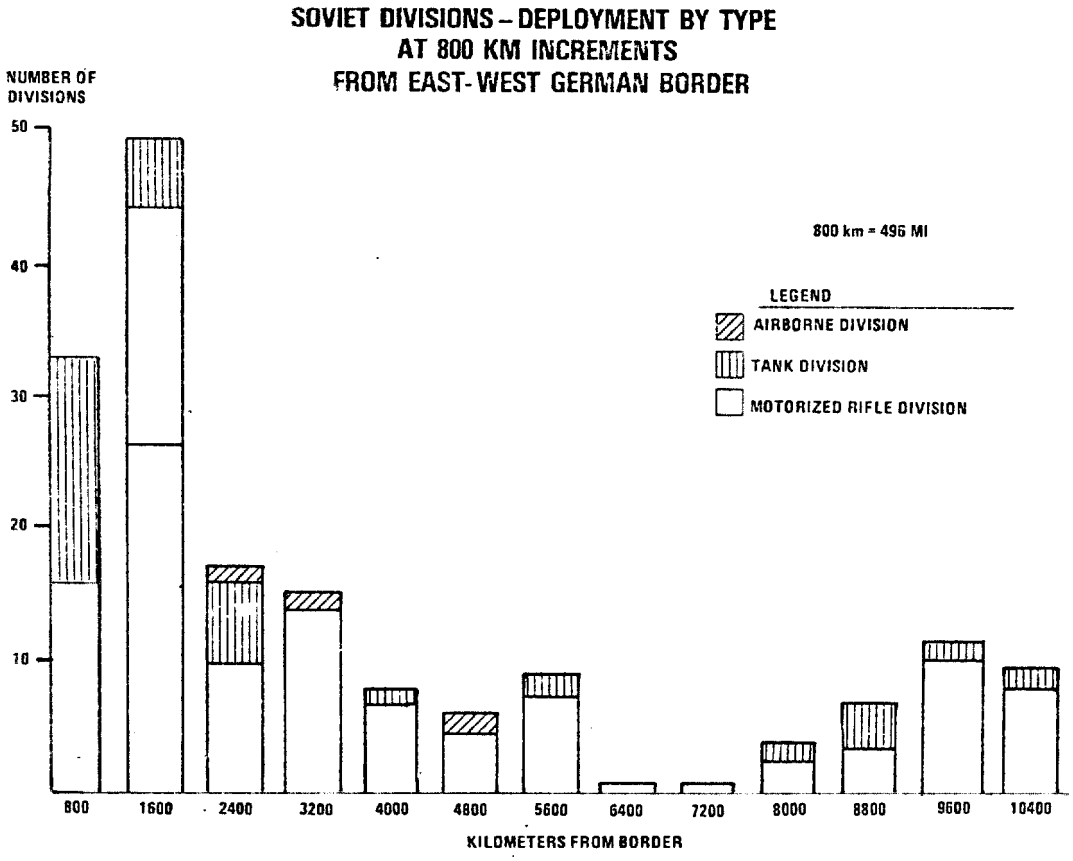
of Soviet leaders, but no doubt exists about the capabilities of Soviet armed forces to threaten U.S. vital interests.

As the Defense Report pointed out last year, there are 4.4 million men in the Soviet military establishment -- compared with 2.1 million men and women in the U.S. Armed Forces. All elements of modern power are heavily represented in the Soviet military establishment, including intercontinental strategic nuclear forces, large and growing theater nuclear forces, and a wide range of modern conventional capabilities.

U.S./U.S.S.R. MILITARY MANPOWER



A significant portion of Soviet theater nuclear and conventional forces is oriented toward Western Europe, with 27 divisions and 1,400 aircraft in East Germany, Poland, and Czechoslovakia and 4 divisions and 265 aircraft in Hungary. The USSR has an ICBM force that numerically is 50 percent larger than our own, and some 75 ballistic missile submarines capable of attacking the United States. The Backfire bomber is coming into service. Soviet antibomber defenses remain substantial, and it is increasingly evident that they provide key elements of their population,



industry, and food supplies with some degree of protection against nuclear attacks. The Soviets have also increased their capability to project power far from their shores and from areas of their historical involvement.

What we are witnessing, at a minimum, is a sustained effort on the part of the leaders in the Kremlin to expand their capabilities sufficiently to become major participants in world geopolitics. In certain respects, they have already broken through or leapfrogged the barriers erected by the containment policies of earlier decades. They can be expected to continue this process in the future. Certainly they will have a growing capability to do so.

There is continuing momentum behind Soviet defense programs. While the U.S. defense budget was, until recently, in a long, slow decline in real terms, the Soviet defense budget increased in real terms by more than a third over the past decade.

Because of the steadily growing resources allocated to defense, the Soviets now outproduce the United States in tanks, armored personnel carriers, and artillery. Their output of tactical aircraft and even

helicopters is now greater than ours. So is their production of new ships, in terms of numbers delivered. However, since we have built larger individual units, new U.S. tonnage exceeds that of the Soviets by 30 percent.

While the United States has developed one new ICBM since 1965, the Soviets have developed seven. Of their newest generation of ICBMs, three have greater throw-weight, more and higher-yield multiple independently targetable re-entry vehicles (MIRVs), and accuracies increasingly close to that of our newest ICBM. In light of an ever-growing base for the production of military materiel and an expanding corps of scientists and engineers devoted to military R&D, reasonable people must conclude that these programs will continue to accelerate.

We know that Soviet leaders talk of being engaged in long-term competition with the West and of seeking to tilt the international "correlation of forces," including the military, in their favor; that they continue to sponsor and support "wars of national liberation;" and that their writings suggest an ultimate victory of Marxism over the evils of "capitalist-imperialism." Indeed, to describe the Soviet Union as a status quo power is to ignore much of what has been taking place over the past twenty years.

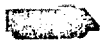
The Kremlin is behaving as though it is determined to increase Soviet military power whether we show restraint or not; Soviet military programs which we observe and measure exceed those necessary for deterrence; and the magnitude of the Soviet military effort, impressive by any standard, continues the momentum that it has displayed for more than a decade.

In short, we must base U.S. force planning on a recognition of the size and scope of the Soviet military capabilities as they are, not as we would wish them to be. This, indeed, is the most critical assumption underlying the defense budget for FY 1978 and the Five-Year Defense Program. I do not believe there is any other assumption that fits the facts about the Soviet Union and our world in the late 1970s.

The future course of the People's Republic of China remains somewhat uncertain, as does our relationship with Peking. While we continue to seek more normal relations with the PRC, Peking is gradually developing an intercontinental and sea-based ballistic missile capability. Accordingly, we must take this into account in the design and deployment of U.S. strategic nuclear forces, even though the United States may not be a primary target. In addition, we must be aware of Peking's conventional capabilities. Allies in Asia are necessarily sensitive to the regional power of the PRC, and cannot ignore the possibility of local conflicts which could affect their interests, and ours.

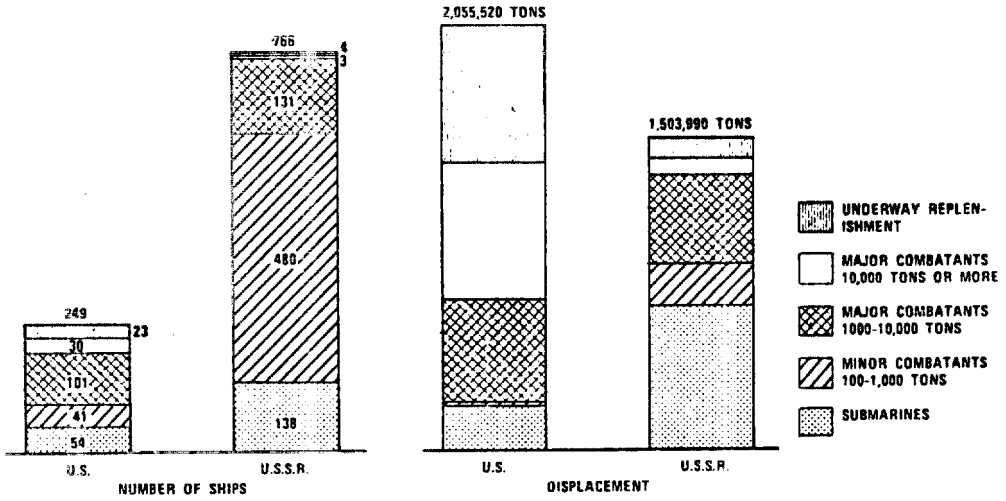
Other and lesser powers may also choose to challenge U.S. interests and friends. North Korea, Libya, and Cuba are only the most obviously

ESTIMATED U.S./USSR RELATIVE PRODUCTION RATES
(1972-1976)

	USSR 1972-76 AVG	U.S. 1972-76 AVG	USSR/U.S. RATIO 1972-76
	2,770	469	5.9:1
	4,990	1,556	3.2:1
	1,310	162	8:1
	1,090	573	1.9:1
	666	733	0.8:1
 1/	27,000	27,351	1:1

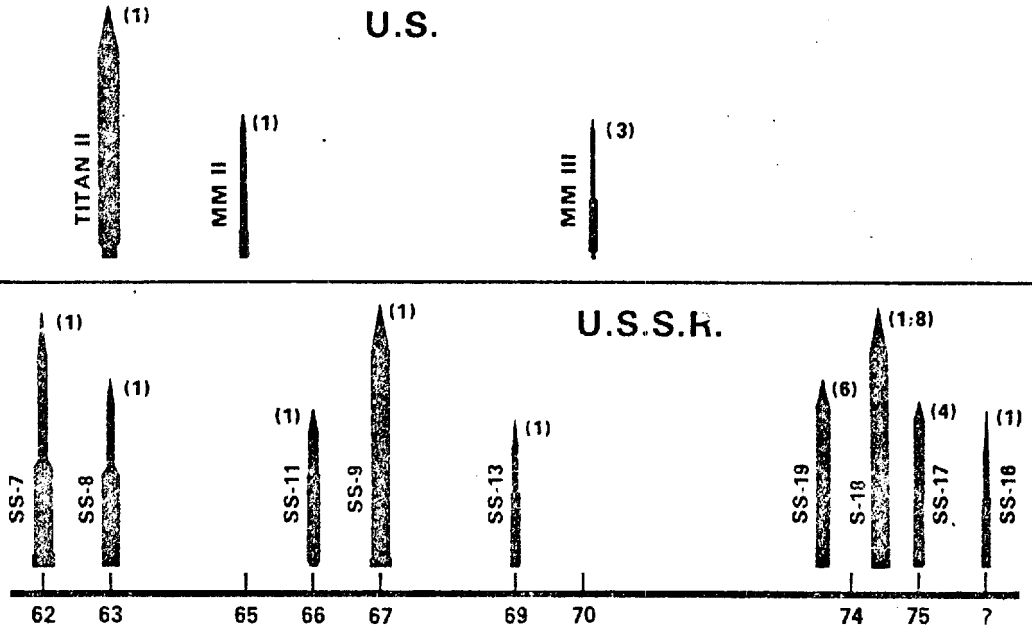
1/ Ground launched antitank missiles

US/USSR COMBATANT SHIP DELIVERIES 1/
1966-1976



1/ SUPPORT SHIPS OTHER THAN THOSE CAPABLE OF UNDERWAY REPLENISHMENT ARE NOT INCLUDED.

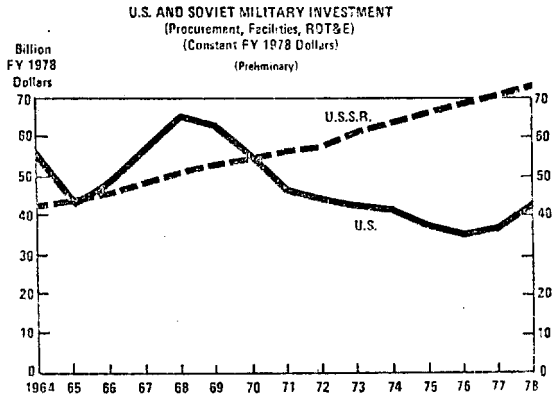
US AND SOVIET ICBM DEVELOPMENTS [1/]

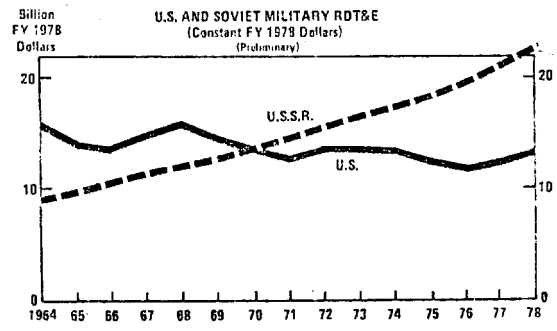


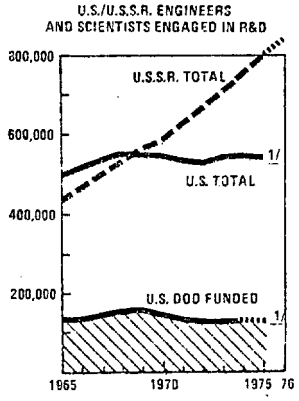
YEAR OF INITIAL OPERATIONAL CAPABILITY

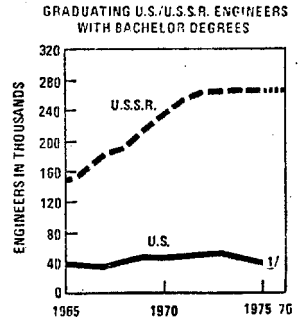
[1/] The numbers in parentheses represent the number of independently targetable re-entry vehicles associated with each missile

COMPARATIVE U.S. AND SOVIET TECHNOLOGICAL INVESTMENT









1/ Based on 1974 data. Data for 1976 is not yet available.

bellicose of the candidates. Such challenges may become more dangerous in the period ahead. The incidence of terrorism, occasionally fostered by irresponsible foreign leaders, could also increase in number and intensity, and terrorists could become more heavily armed with more sophisticated weapons.

V. Challenges to Security

Certain of these many challenges call for particular attention and concern.

First among the dangers remains a nuclear attack on the United States itself. However remote and improbable such an attack may seem, the consequences of its occurrence would be so catastrophic that this possibility must take priority in U.S. planning.

Second is the threat of a conventional conflict. Despite thirty years of peace and relative stability, Western Europe -- a region of the most vital political, economic, cultural, and strategic interest to the United States -- continues to face the armed might of the Soviet Union and its satellites. Warsaw Pact forces, both nuclear and conventional, are being steadily strengthened; their doctrine and posture continue to be offensive in character.

A direct attack on NATO is not the only basis for continuing concern about Europe. The possibility of a succession crisis in Yugoslavia remains. Around the Mediterranean, large communist parties of Western Europe are exploiting the democratic process in order to seize power or gain a major share of it. This is being done under the banner of "Euro-communism," as though it were not real communism and is therefore somehow more acceptable.

The dangers in the Middle East and Persian Gulf are well known. We seek continuing progress toward a Middle East peace settlement. We also have a fundamental interest in uninterrupted access to Middle East oil and gas resources by the United States, and especially by Western Europe and Japan, at acceptable prices. Both objectives remain in doubt.

Asia is still an area of high potential for conflict. The elements that compose the Asian balance are multiple and fluid, reflecting the complex relations among the United States, the Soviet Union, China, and Japan. Should conflict occur, it could have a significant long-term effect on the regional and global balance.

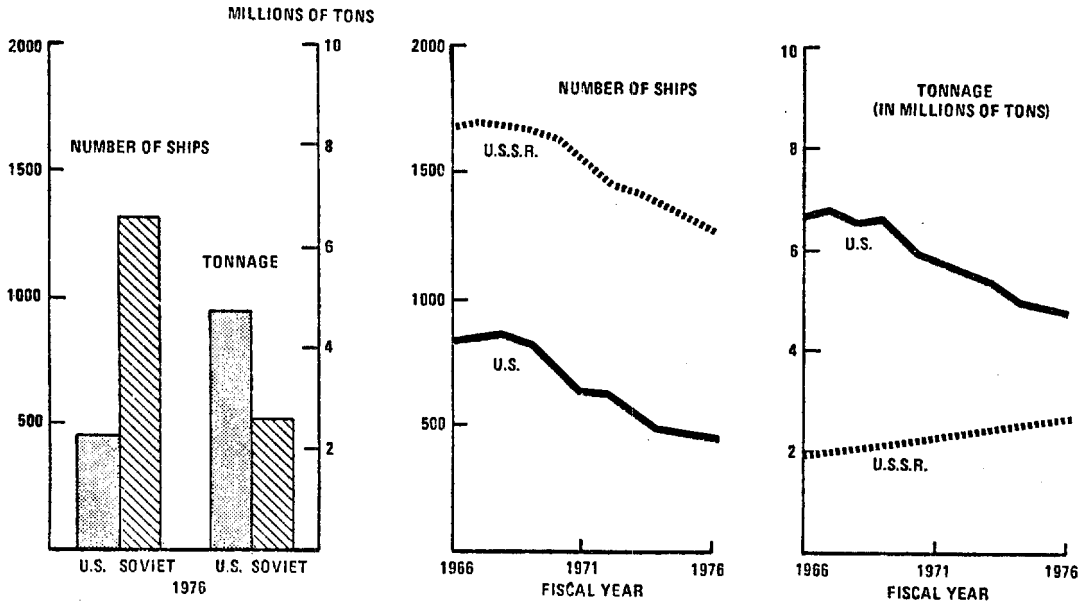
The dangers to current stability are diverse. They range from the possibility of armed attack across an established frontier in Korea to adventurism in Southeast Asia, supported in varying degrees by some of the communist nations of Asia. The present situation is not unfavorable, but it could deteriorate.

U.S. interests in South Asia and Africa are primarily political and economic, with strategic interests limited to lines of communication. The social and economic problems of these areas may well create conditions of local disorder and tension, which will be both disruptive in themselves and may offer opportunities for exploitation by the Soviet Union or other countries potentially hostile to the United States.

U.S. interests in Latin America are both political and economic, although there are important strategic interests with respect to lines of communication, particularly for oil, and access to mineral resources. There are few contingencies, however, that might impose a substantial requirement for U.S. forces. This is not to say that threats to U.S. security might not arise in Latin America. The future status and security of the Panama Canal, Cuba's potential for subversion and intervention, and the persistence of possibly troublesome regional rivalries are serious problems.

Two other dangers are global in scope. First, the Soviets have built and deployed major air and naval capabilities with which they could attempt to deny us freedom of the seas. Dependent as the United States is on free use of the seas -- as avenues of commerce and as a medium for projecting power and influence abroad -- such a threat would be unacceptable. Similarly, the Soviets are working on capabilities to interfere with U.S. capabilities in space. Any effort to use these capabilities would require a response, which could only come from the United States.

CHARACTERISTICS AND CHANGES IN GENERAL PURPOSE*NAVAL FORCES - U.S./U.S.S.R.



*DOES NOT INCLUDE BALLISTIC MISSILE CARRYING SUBMARINES

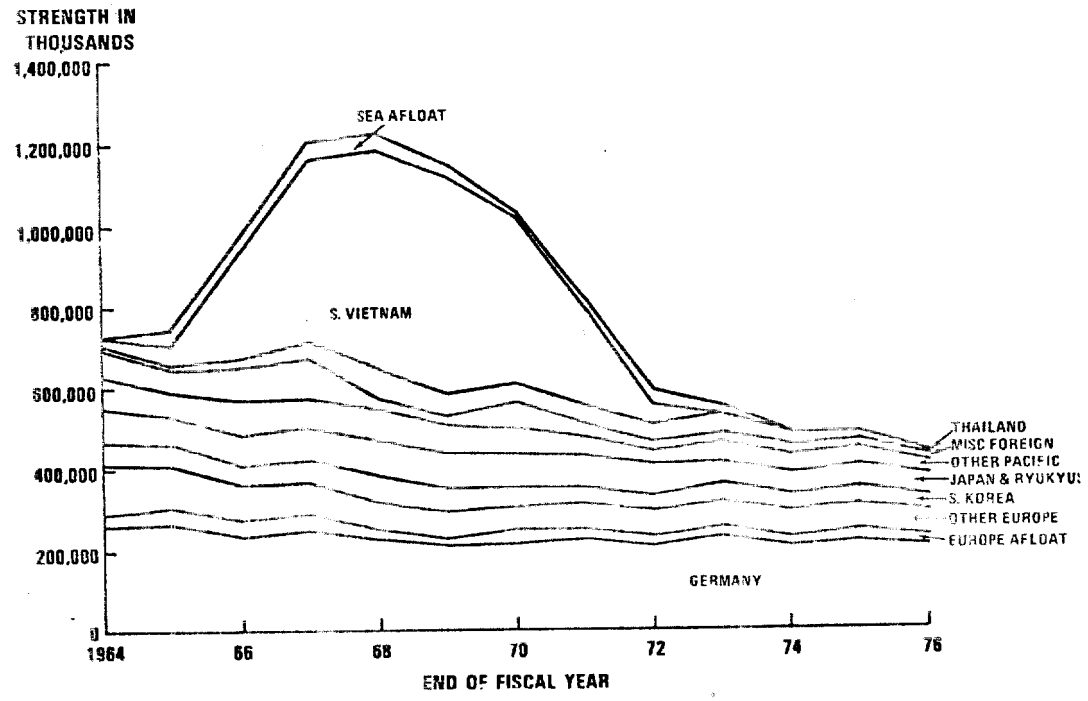
In summary, we must recognize the difference between the world we seek and the world we live in today. Democratic institutions are not spreading in the world, international stability is not increasing, conflicts are not decreasing in number or intensity, and the rule of law is not flourishing. Yet in the complex world of the 1970s, we have a great stake in standing fast on the frontiers of freedom and deterring the serious threats that exist.

VI. The Role of America and Our Allies In The World

Because we are one of the two major powers in the world, we must continue to play a large role in international affairs. Were we to relinquish this role, there would be no other power substantial enough to counterbalance the USSR. Is there anyone who seriously believes that in the absence of U.S. military power as a counterweight to the Soviets, they would long be restrained from expanding their influence by whatever means were available?

The mantle of leadership for those who believe in freedom has passed to America. Our friends in Europe, while contributing to our collective security, are no longer comparable powers. Further, with technological advances in weaponry, the United States has lost the luxury of time in which to mobilize forces, adapt industry to war production, learn from the mistakes of others, and step into the conflict when prepared. Today, no one can hold an enemy at the gates long enough to permit a leisurely U.S. mobilization. With modern technology, that day has passed. There is no alternative but to be prepared and thereby to deter.

US MILITARY PERSONNEL IN FOREIGN COUNTRIES



While we do not count on the contribution of our allies in the design of U.S. nuclear forces, we do rely on them in structuring our general purpose forces. For certain major contingencies, such as an attack by the Warsaw Pact, we assume that all NATO commitments will be met and that, at a minimum, the forces pledged to the Alliance will become available as scheduled. This assumption materially reduces the need for U.S. general purpose forces in such contingencies. Nevertheless, experience has shown that we cannot rely on our major regional allies at all times and in all circumstances.

VII. Arms Control and Deterrence

Arms control negotiations naturally play a role in the design of defense posture. The primary U.S. objective in these negotiations is security through increased stability. We would prefer a world in which neither major power had incentive either to attack the other or to strive for a long-term military advantage. We also seek to reduce uncertainty about the future and limit the costs of defense.

While hopeful, we must also be realistic in this complex, sensitive and even risky area. So far, arms control successes have been modest. The ABM Treaty of 1972 has forestalled extensive deployment of ABM systems, and the Interim Offensive Agreement of SALT, due to expire in October 1977, placed a ceiling on the number of U.S. and Soviet ICBMs and SLBMs. Such measures have clearly not dulled the Soviet appetite for new and more capable strategic offensive systems, nor have they assured stability. The Vladivostok Understanding of 1974 would come closer to realizing our goals, but a new treaty has not yet emerged. The reason is clear. Despite repeated U.S. proposals, movement thus far by the Soviet Union has not been sufficient to permit the signature of an agreement that would be in the U.S. national security interest.

The complex multinational negotiations for mutual and balanced force reductions in Central Europe have not as yet produced anything concrete. While arms control measures could conceivably impose restraints and reduce the incentives for war, these goals remain before us. The facts of the present must form more of a basis for U.S. defense planning than hopes for the future.

VIII. Strategic Nuclear Concepts and Forces

In designing U.S. strategic forces, three main contingencies are considered:

-- a surprise attack by the Soviet strategic forces against the U.S. retaliatory capabilities postured in their regular day-to-day status;

-- a sudden Soviet attack against an alerted U.S. posture, a posture which has many more bombers on alert and SLBMs at sea because of

a deteriorating international situation; and

-- a sequential PRC-Soviet attack against an alerted U.S. posture. U.S. force planning centers on the first contingency -- a Soviet surprise attack on our day-to-day force posture -- since the other contingencies prove to be less demanding.

It should be emphasized in this context that nuclear forces make up a continuum of capabilities. They must therefore be assessed together because:

-- Soviet nuclear forces cannot be fitted neatly into either strategic or theater categories. Variable-range ICBMs have been based in their medium-range sites, and both the SS-X-20 missile and the Backfire bomber are indefinite as to range capabilities and missions.

-- The outcome of some nuclear conflicts may depend as much on an ability to hold or occupy territory as on the destruction of specific targets. For this reason, aircraft and missiles designed to perform deep missions and attack "strategic" targets, may not always have the decisive role in nuclear warfare.

-- Important "gray area" systems -- such as the SS-X-20, Backfire, and cruise missiles -- do not fall into the current arms control categories of central and non-central systems, yet they cannot be ignored.

The primary function of the continuum of nuclear forces is to deter attack and prevent nuclear blackmail. Even though they absorb no more than 20 percent of the total defense budget, nuclear forces provide the foundation of deterrence. That foundation must be solid at all times, to underpin the entire defense structure and our system of collective security.

Soviet nuclear capabilities can be expected to improve in the future as they have done so dramatically in the past. Between 1965 and 1976, their ICBM force increased from 224 to more than 1,500 launchers and their SLBM force from 29 to 800 launchers. They began the modernization of their long-range bomber force and made a considerable increase in their deliverable nuclear weapons.

If the Soviet strategic posture is already impressive today -- in numbers, throw-weight, and survivability -- it is becoming even more so in terms of qualitative improvements which are part of the current wave of modernization.

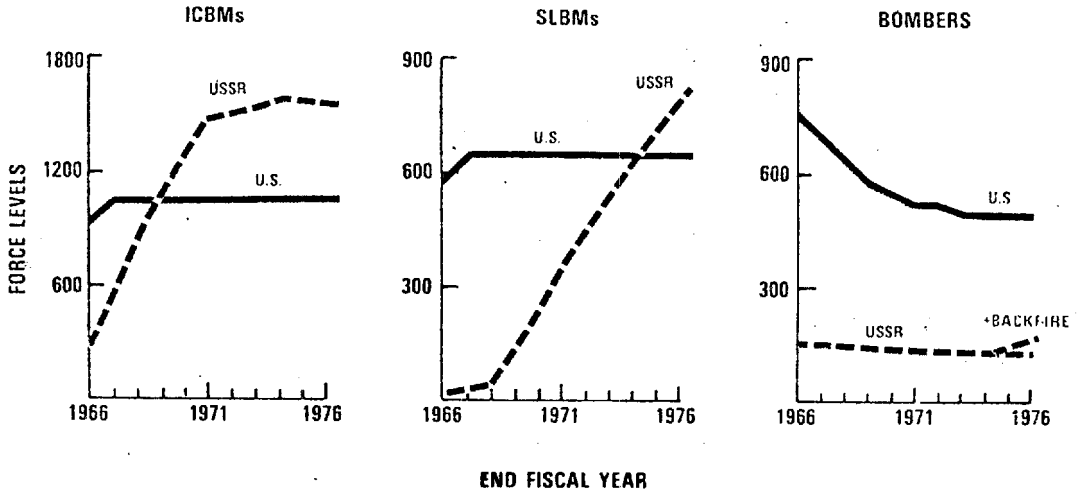
Three rather definite statements about developments in Soviet nuclear programs can be made:

-- Whatever their motives, the Soviets have greatly expanded and improved their strategic posture.

-- Soviet programs do not reflect an interest in deterrence by massive retaliation alone; their strategic nuclear posture is developing a war-fighting capability.

-- While the Soviets are not likely to succeed in the admittedly complex, costly, and difficult task of achieving meaningful nuclear superiority, it is clear that their capabilities are taking them in that direction.

CHANGES IN U.S./U.S.S.R. STRATEGIC FORCE LEVELS

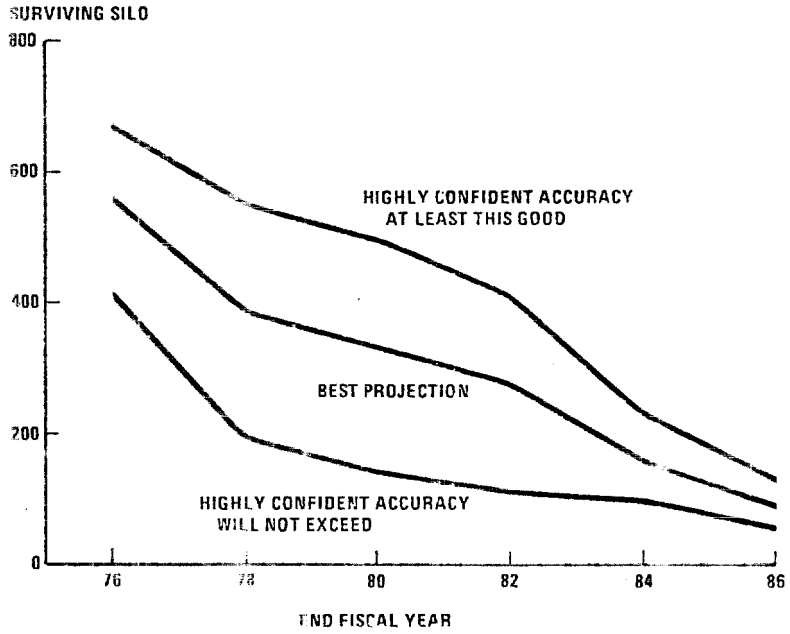


To preserve deterrence, U.S. forces must be designed so that, if necessary, they are able to absorb an attack -- rather than depend on warning for their survival -- and strike back after enemy weapons have actually detonated. The most efficient basis for such a second-strike capability is a mixed force of ICBMs, SLBMs and bombers -- known as the strategic Triad -- which interact strongly to increase the survivability of each part.

The United States must also be concerned with the stability and flexibility of the strategic deterrent. The posture represented by the second-strike Triad should not be mistaken for overkill, as is so often the tendency.

Continued modernization of U.S. nuclear systems is imperative in light of increased Soviet capabilities. Before the mid-1980s, the Soviets could possibly have the capability, with a small fraction of their ICBMs, to destroy the bulk of the Minuteman/Titan force. While this would in no way give the Soviets a disarming first-strike, it could create a dangerous

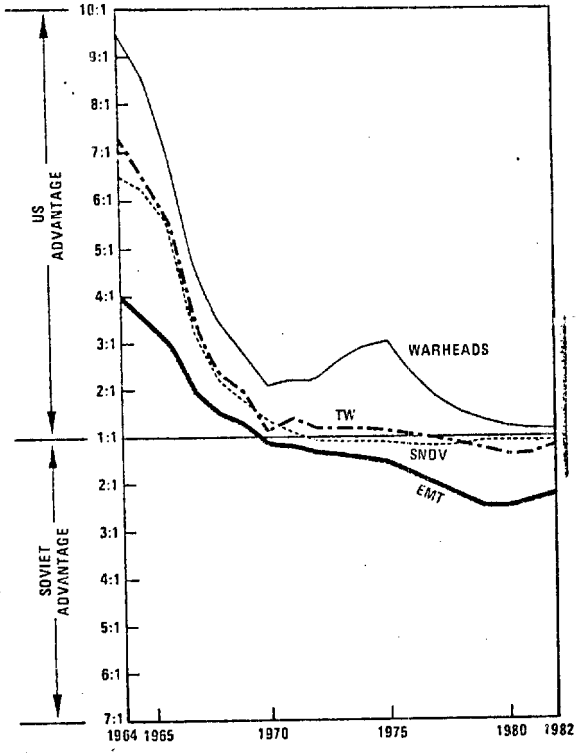
SILO SURVIVABILITY
SENSITIVITY TO SOVIET ACCURACY



asymmetry. Since much of the U.S. capability for controlled, selective responses resides in the Minuteman force, it may be desirable to make the U.S. ICBM force increasingly mobile. Naturally, the United States would prefer to avoid this costly turn of events and prolong the life of fixed ICBM forces on both sides a good deal longer.

In any event, we must make sure that the U.S. nuclear posture inspires the correct perception of strength. If allied and neutral nations see the military balance as favoring the Soviet Union rather than the United States, their independence and firmness may give way to adjustment, accommodation, and subordination. If potential enemies have a similar perception, they may misjudge the situation and make demands which could lead to confrontation, crisis, and unnecessary dangers. At present, the United States and the Soviet Union are seen as having roughly equivalent nuclear capabilities. Congress has underscored the importance of maintaining this posture by requiring that we not be inferior to the Soviet Union.

US/USSR STRATEGIC FORCES ADVANTAGE



EMT = YIELD$^{2/3}$
TW = THROW WEIGHT
SNDV = STRATEGIC NUCLEAR DELIVERY VEHICLE
WARHEADS = BALLISTIC MISSILE REENTRY VEHICLES AND AIRCRAFT DELIVERED WARHEADS.

Even as we work toward effective deterrence, we hope for sound arms control agreements. As a nation, we must approach such agreements cautiously. So far our monitoring of existing agreements has been adequate and we have been able to detect and investigate a number of questionable Soviet practices since 1972. The necessary high confidence in our national means of verification is likely to decline somewhat, however, to the extent that the Soviets attempt to conceal or disguise their programs.

The overall U.S. nuclear posture and related arms control agreements must take Soviet efforts at damage-limitation into account. Most damage-limiting strategies represent an effort by one belligerent to cause maximum damage to his enemy and minimum damage to himself. The assumption behind such strategies is that, if major asymmetries in damage can be achieved, one side will survive as a functioning nation while the other will not.

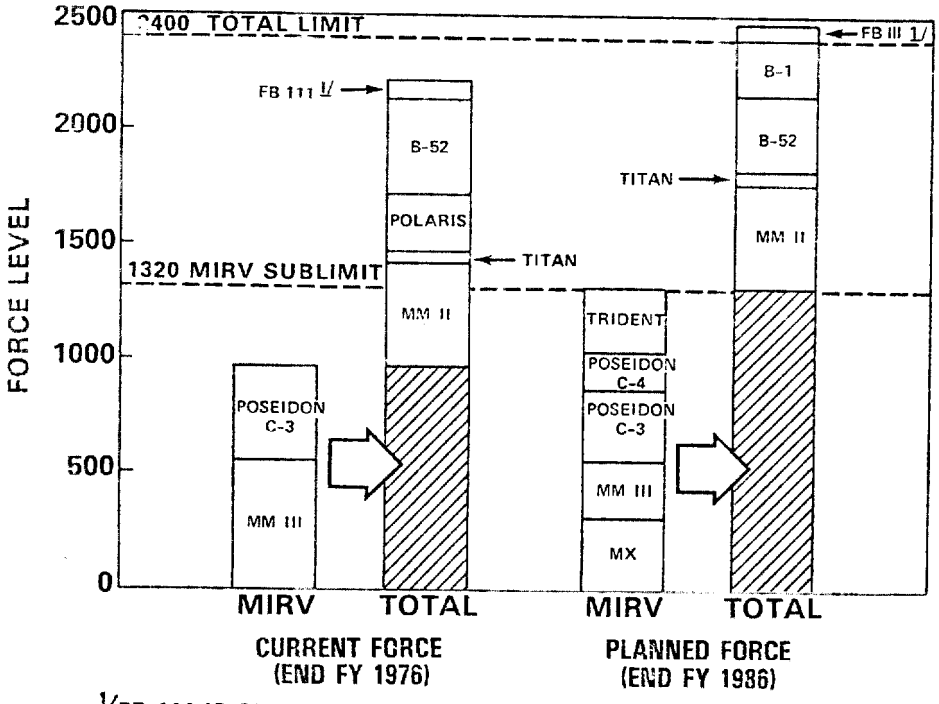
The United States has never taken decisive action in this area. Basic U.S. policy has been directed at deterrence through flexibility and the control of nuclear escalation.

The result of this policy has been a strategic nuclear posture with the following characteristics:

-- a high-confidence Triad of second-strike retaliatory forces within the Vladivostok Understanding of 2,400 launchers;

-- some 8,500 warheads on delivery vehicles for adequate coverage of all relevant targets, even after the attrition suffered from an enemy first-strike and from the penetration of his defenses;

U.S. STRATEGIC FORCE LEVELS



1/FB-111 IS CURRENTLY NOT ACCOUNTABLE FOR SAL PURPOSES

-- a single ABM site on inactive status except for its Perimeter Acquisition Radar (PAR) and a light air defense dedicated to surveillance and peacetime control of U.S. airspace;

-- a mobile fighter-defense system coupled with AWACS which would be used for continental air defense in an emergency;

-- a modest civil defense program to shelter the U.S. population in existing structures and develop the capability to evacuate citizens from selected areas during a period of grave crisis;

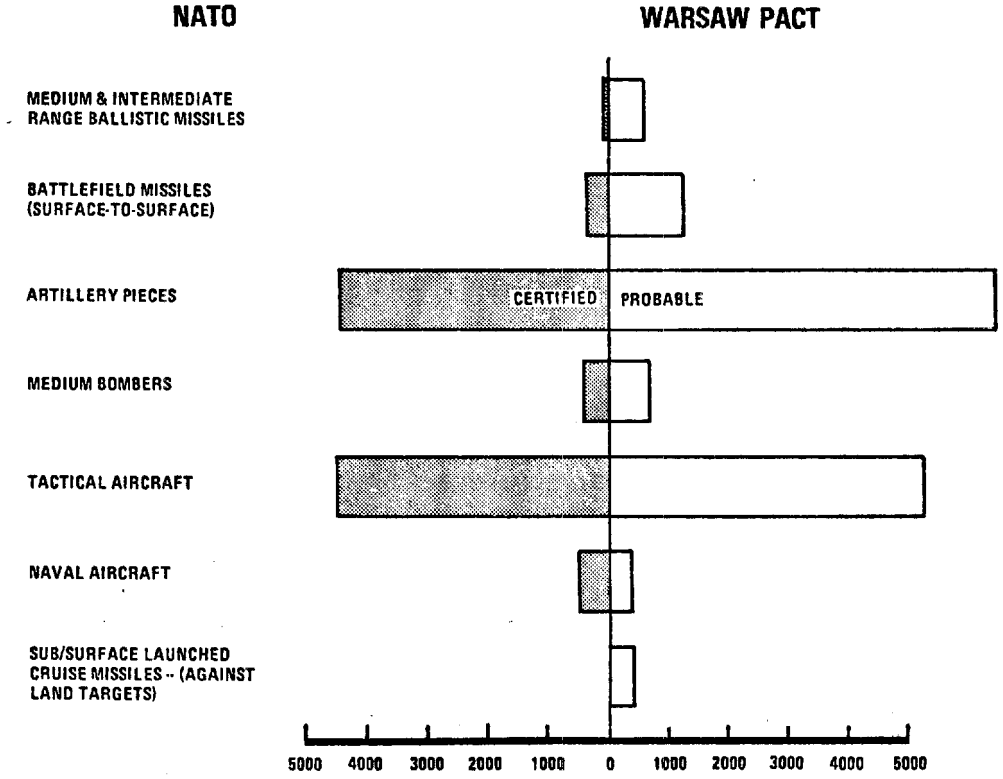
-- a system of multiple, complementary surveillance and early warning capabilities and a survivable command-control-communications network designed to permit the President to direct the strategic nuclear forces in a deliberate and controlled manner.

With essential modernization of aging systems, this carefully tailored posture is preferable to an unrestrained arms race in the future.

IX. Other Nuclear Forces

Nuclear weapons provide a possible response to contingencies other than a direct strategic attack on the United States or its allies. Our allies have been and are today reassured by local U.S. nuclear forces which serve as part of the continuum between conventional forces and strategic capabilities. Theater-based systems constitute a key backup to strong conventional defenses and a major hedge against a failure of those defenses. Because other nations have developed local nuclear capabilities, a U.S. deployment of such forces is required to deter and, if necessary, counter them on a regional level.

'NON-CENTRAL' NUCLEAR-CAPABLE DELIVERY SYSTEMS



As early as 1956, the Soviets began deploying MRBMs and nuclear-capable light and medium bombers as part of increasingly powerful nuclear forces. At present, they have in their peripheral attack forces a greater variety of long-range delivery systems and more missile launchers than NATO. The current Soviet capability goes from the variable-range ICBMs and the new SS-X-20 to short-range tactical missiles.

The Soviets continue to maintain and modernize this force and to articulate a military doctrine which assumes an early use of nuclear weapons by the Warsaw Pact in a European war. While the Soviets might well limit such an attack to conventional means, they are not at any disadvantage where theater nuclear forces are concerned.

The People's Republic of China has now deployed a medium-bomber force of 77 Tu-16s which are nuclear-capable, and a small complement of MRBMs and IRBMs. India already may have a small nuclear arsenal and Great Britain and France have long-standing nuclear capabilities to attack targets in Central Europe and in the USSR. In such circumstances, neither we nor the Soviets are necessarily the sole judges of where, when, and how such weapons might be used.

In structuring U.S. nuclear forces, attacks in Central Europe or in Korea are considered the most likely to call for backup, and nuclear weapons are currently maintained in each theater. A decision to use these weapons would depend upon (1) an enemy conventional breakthrough which could not be countered, or (2) his first use of nuclear weapons. U.S. capabilities must be sufficiently large and survivable to absorb such an attack and still perform assigned missions. This means not only a mix of forces, but also an emphasis on mobility and concealment for survivability. Sophisticated and survivable command-control-communications networks must accompany these forces.

To minimize collateral damage, U.S. systems are presently tailored to destroy their targets with the minimum yields possible. As nuclear and guidance technologies advance, theater nuclear forces must be modernized, but without blurring the important and time-honored distinction between nuclear and non-nuclear weapons.

In light of the current Soviet nuclear threat, there are graver risks in not maintaining theater nuclear forces than in deploying them. Friend and foe, supporter and skeptic, all need to recognize that U.S. nuclear forces must constitute an integral part of U.S. capabilities if the deterrent is to be effective.

X. Conventional Forces

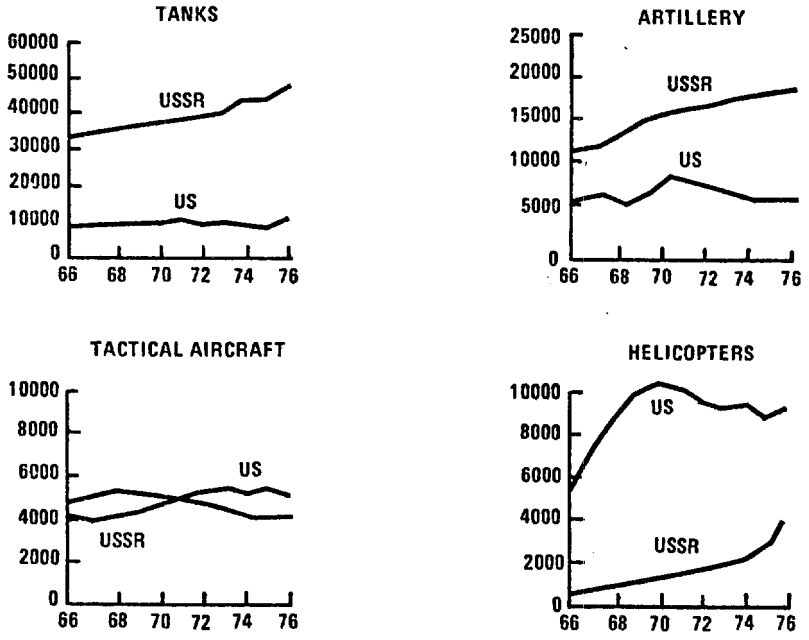
Although this is a nuclear age, conventional capabilities are increasingly important to the security of the nation and to peace and stability in the world. Conventional military power remains a principal instrument for

pursuing international objectives where military power is to be used at all. Nuclear forces credibly deter some limited -- although potentially devastating -- hostile acts, but the primary burden of deterrence now falls increasingly on conventional forces, although their effectiveness is enhanced by the nuclear capabilities that underlie them.

There are other reasons for a non-nuclear emphasis in the U.S. defense arsenal. Conventional wars appear relatively controllable, since their tempo tends to be slower, allowing policy makers to act without excessive pressure. Limitations on a conventional conflict in terms of territory, weapons, or aims can more readily be defined and accepted.

The Soviet capabilities show an appreciation of the importance of conventional strength, and reflect a determined, sustained, and increasing effort to develop two powerful conventional forces -- one facing Europe and the other opposite China. These modern offensive forces, combined with their increasing capability to project power thousands of miles from Soviet shores, have not appeared overnight. They are the result of a steady effort made with great momentum over considerable time. What is new is Western recognition of their magnitude and extent.

CHANGES IN QUANTITIES OF MILITARY EQUIPMENTS - U.S./U.S.S.R. (1966-1976)



The number of active Soviet divisions, estimated last year at 168, now appears to be more than 170. Soviet strategic airlift has also continued to expand steadily in tonnage potential. Naval and amphibious forces, designed principally for use on the perimeters of the USSR in the past, are increasingly capable of extended and open-ocean operations.

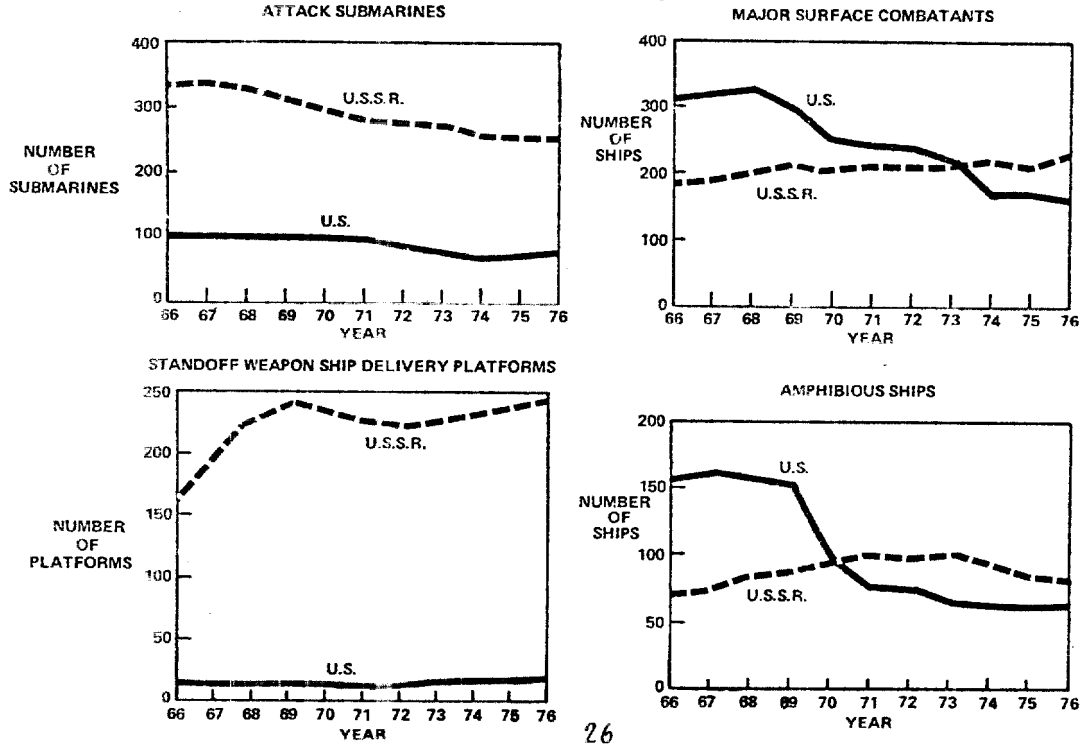
The Soviets have increased the combat effectiveness of their ground and tactical air forces, particularly those in Europe. Their divisions have been expanded in size and modernized. New fighter-attack aircraft have been deployed. For the first time, these capabilities may coincide with the long-standing Soviet doctrine of rapid offensive thrusts, reminiscent of German "blitzkrieg" tactics in World War II.

Thus, the conventional posture in Europe must be based on the assumption that: (a) an attack with little or no warning by in-place Warsaw Pact forces is possible; (b) an attacking force could amount to 500,000 or more men; (c) a forward allied defense is essential; and (d) the ratio of the Pact attack to the NATO defense should be kept well below two-to-one. We also prepare for an attack by Pact forces reinforced, primarily from the USSR, after perhaps 30 days of mobilization and deployment.

Despite U.S. dependence on freedom of the seas, essential U.S. sea lines of communication are less secure today than they were a decade ago. With their improved naval, airborne, and airlift forces, the Soviets can intervene by sea and air at considerable distances from the USSR, and can sustain such an intervention for a substantial and growing period of time.

CHANGES IN NAVAL FORCE LEVELS -- U.S. / U.S.S.R.

(1966 - 1376)



Developments of Soviet military power are impressive, but the challenge remains manageable. Today, NATO, as a whole, probably spends as much on its defense as the Warsaw Pact. NATO armed forces total about 4.8 million men and women, compared to the Pact's 5.6 million. However, since the Soviets seem engaged in a steady, long-term effort, the feasibility of a NATO conventional defense of Europe cannot be assured once and for all. We must continue to meet these expanding capabilities if our goals are to remain peace and stability, freedom and independence.

That peace and stability still exist in Europe and Korea must be largely credited to the deterrent effect of conventional forces, ours and those of our allies. Strength today, as in the past, contributes to peace. Weakness -- as history testifies -- can invite war as much in this day and age as before. In fact, the present circumstances make weakness a greater provocation than strength.

Because of worldwide U.S. responsibilities, the conventional forces are structured to deal simultaneously with one major and one minor contingency. This is premised on the belief that a smaller engagement could escalate or, in some manner, lead to a larger conflict elsewhere. While such contingencies are necessary for planning purposes, we do not predict any particular course of events or even reserve U.S. forces for any definite, special use. At this point in history, nonetheless, we must at least have a posture sufficiently large, modern, ready, and well-positioned to face the most demanding challenge in Europe and still maintain a deterrent force in Northeast Asia.

In today's world the risks are those of irresolution and weakness. The current non-nuclear posture and deployments help provide for the strength, security, and stability necessary in a world of complexity, untidiness, and declining freedom.

XI. Other Capabilities Needed for Our Security

Most of the defense program deals with the manpower and equipment essential to national security, but other capabilities multiply the utility of U.S. weapons systems. Without accurate intelligence, there would be even greater uncertainty about the size and composition of an adversary's forces and about his intentions. Either the risk to the nation or the costs of the U.S. defense budget would have to increase substantially. Today, it is possible to make relatively modest deployments to Europe because of our knowledge about current Warsaw Pact capabilities and deployments. Without such knowledge, U.S. requirements, our dependence on a nuclear strategy, or the risks to the United States and its allies, would have to increase.

Without adequate research and development efforts, we could not improve the effectiveness of U.S. forces, maintain the overall military

balance, or even understand our opponent's forces. The Soviets have clearly made progress toward technological excellence in their military establishment. The United States must be alert for new technological opportunities with defense applications -- such as long-range cruise missiles and guidance, improved sensors, miniaturization, and computer technology -- and must be willing to move them along into production when ready.

Finally, U.S. foreign military sales and assistance programs augment the non-nuclear capabilities of those nations important to us in the world. Support to other countries through programs of grants, loans, and sales enables them to assure their security at less cost to the United States. Without such arrangments, many of our friends could not be expected to share the burdens of collective defense. Nor could we count on their forces to complement ours with any degree of efficiency.

Overseas base rights and other facilities frequently depend on a U.S. willingness to make weapons available to host countries. Regional balances of power, as in the Middle East, may depend on support to friendly nations, especially when others receive substantial support from the Soviet Union. While balance-of-payments considerations do not determine U.S. decisions, they cannot be ignored. An increasing amount of arms is becoming available from Soviet and European sources. When independent states believe they need arms to provide for their security, their requests should be taken seriously, realizing that they value their sovereignty and security as much as we value ours.

XII. Conclusions

The U.S. assessment of the international military situation and of the U.S. contribution to deterrence makes it clear that the United States faces a number of difficult but manageable security problems in the years and decades ahead. Portions of today's problem result from decisions and events of the past decade; still other portions have developed and will continue to develop from the efforts of the Soviet Union.

We seek peaceful relations with all states, including the Soviet Union. However, from the evidence, it is clear that the Soviets are purposeful about their military programs. Weakness on the part of the West is not an example the Soviets have emulated. If reasonable international peace and stability are to be preserved, we must learn to live with the fact of Soviet strength.

In FY 1977, we set in motion a program for the security of the United States. It was intended to deal with the real world we face and arrest the decline in U.S. capabilities relative to those of the USSR. The task now is to stay on this path and assure an acceptable overall military balance by developing an adequate defense posture. To do so, we must raise the level of the Five-Year Defense Program, beginning in FY

1978. This will entail a real increase in resources of about 6.8 percent from FY 1977 to FY 1978, and substantial continuing growth (in real terms) in the Five-Year Defense Program. To do less would be to take unnecessary risks with our country's future.

More than 30 years have passed since the end of World War II, longer than the interval between the First and Second World Wars. During the past three decades, the steadfastness and strength of the United States have contributed to the avoidance of another large-scale conflict. Now is the time not to relax but to maintain a steadiness of purpose and resolve. We must not abandon our objectives of freedom and security.

I believe the United States will do its duty. Friend and foe alike will understand the message of this budget. We will not be outmaneuvered; we will not be outlasted; we will not be intimidated. With the support of the American people, through their representatives in the Congress, and with support for the programs set forth, we can demonstrate our commitment to peace and stability, even in a world fraught with dangers and populated with many who do not subscribe to freedom -- a world we must preserve for freedom and for the dignity of mankind.

When I took the oath of office as Secretary of Defense, I made four points:

"First, the safety of the American people and the hopes for freedom throughout the world demand a defense capability for the United States of America second to none. I am totally dedicated to that mission.

"Second, we are rightly proud of the armed forces, older than our nation itself, and I will seek to strengthen that sense of pride among us all. We were born as a nation out of military struggle. We owe our national life to men and women who had the will to fight for independence. The competence and dedication of their successors in today's armed forces will be drawn upon fully.

"Third, that special kind of American military professionalism that is devoted to the constitutional principle of civilian control, so fundamental to political freedom in this country -- is a model for the world. One who has served in the Congress knows how indispensable it is that the defense of our country be a bi-partisan and shared responsibility.

"Finally, let there be no doubt among us, or in the world at large, that the continuity of American policy can be relied upon by friend and foe alike. Our defense policies are geared to the interests of this nation."

My watch is ending. More remains to be done. Nonetheless, I believe now as I did 14 months ago that "America must pursue its goal, as it has throughout...200 years, as a guardian of liberty and a symbol by example and deed in the service of freedom." In strength there is freedom.

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SECTION I

SECTION I

I. INTRODUCTION

Mr. Chairman and Members of the Committee:

This is my second Report to the Congress of the United States as Secretary of Defense, and the last Defense Report of President Ford's administration. It affords an opportunity to summarize what has been done and what needs to be done for the continuing security of the United States.

In the two and a half years since President Ford took office, he has recorded a number of accomplishments in the realm of national defense. Of these, several deserve particular emphasis.

-- Throughout the country there is a renewed recognition that the nation's security cannot be taken for granted. I have left no doubt about the magnitude and persistence of the effort by the Soviets to expand and improve their military establishment. The American public, for its part, has become aware that there is no necessary incompatibility between the search for equitable agreements with the Soviet Union and an insistence on a strong defense and adequate deterrence.

-- Security and stability have been increased in two ways: by some progress on arms control and by the President's determination to halt the erosion of U.S. military and deterrent strength caused by the steady real increase in Soviet military spending and capabilities, and the equally steady decline in our own over the ten years preceding 1975.

-- With the reversal of the downward trend in real U.S. outlays for defense, it has become possible to support and accelerate investments in a number of programs essential to the future security of the United States. As a consequence:

- The modernization of the U.S. strategic nuclear deterrent is now under way, with decisions on production of the Trident submarine and the B-1 intercontinental bomber, and the acceleration in the development of a more survivable land-mobile ballistic missile.

- The increasing importance of U.S. conventional capabilities and deterrence has been recognized, and proposals set forth for major resources to be allocated to its expansion, so that in the years ahead:

  - o the Army will field 16 rather than 13 active divisions, and these divisions will be given increased firepower, mobility, and protection from air attacks;

  - o the Navy is moving to improve its capability for two-ocean sea control, its air and amphibious capability for the projection of U.S. power, and its ability to maintain a presence as required;

- the Air Force, with 26 fully-equipped tactical air wings, will be able to provide an expanded and more modern capability for worldwide offensive and defensive air operations;

- worldwide mobility will be improved through expanded and more modern airlift, and through greater inflight refueling support;

- current research and development plans and programs should provide new weapons technologies for the fulfillment of our commitments.

-- President Ford has strengthened our arrangements for collective security abroad, with particular attention to:

- the improvement of U.S. combat capability and the realignment of U.S. support forces;

- an increase in U.S. combat units -- both ground and air -- stationed in the sensitive central region of Europe;

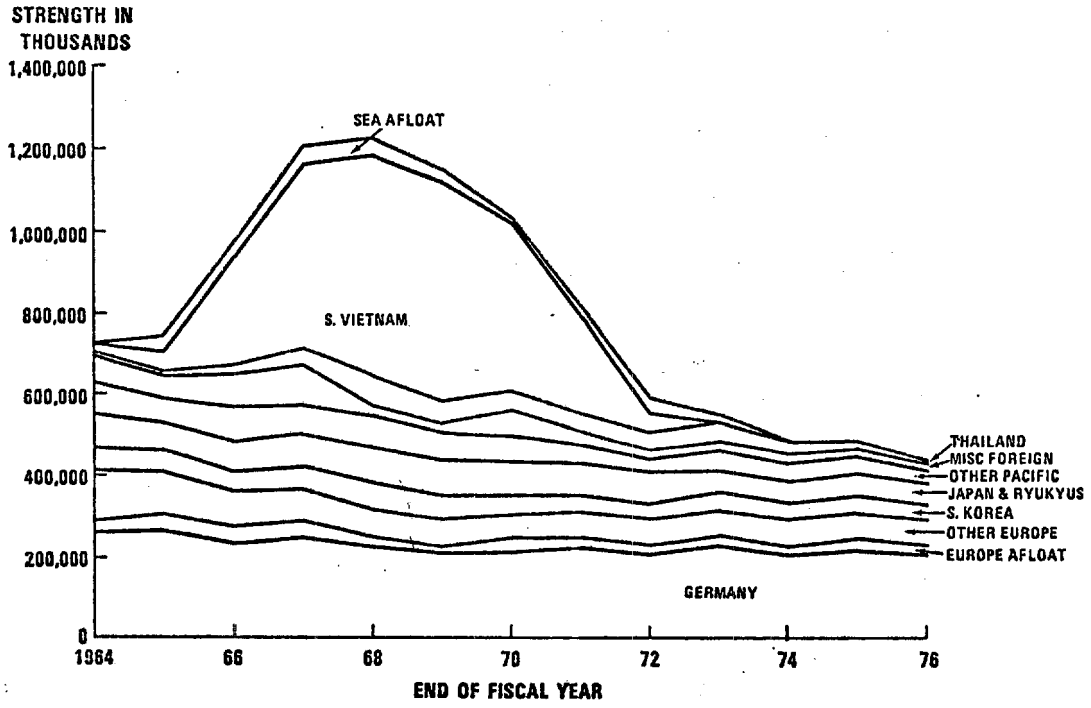
- greater standardization of equipment with our allies, culminating in agreements within the North Atlantic Treaty Organization (NATO) to adopt the F-16 air combat fighter, the Roland army air defense missile, and standard common components for the next generation of main battle tanks.

-- The all-volunteer force has been brought into being and is solidly in place. Racial and drug problems have declined. The men and women of the services are dedicated to their profession. The American people recognize and applaud their devotion. Their competence is unequalled in the world today. It must be maintained.

-- At the same time, the U.S. military presence overseas has been reduced wherever circumstances permitted. We have followed a consistent policy of bringing forces back to the United States whenever U.S. interests and commitments could be sustained with smaller foreign deployments. In FY 1976, the total of U.S. military manpower outside the United States decreased by more than 10 percent, from 517,000 to 464,000. As the accompanying illustration shows, this is only the latest installment of a steady decline over the years.

CHART I-1

US MILITARY PERSONNEL IN FOREIGN COUNTRIES



A remarkable degree of consensus has developed over these needs, reflected in progress across a broad front of national security matters. As the war in Vietnam drew to a close, a reaction against things military tended to obscure even the most vital interests. During a period of detente, or relaxation of tensions on the heels of the war, there was a tendency to rationalize away or ignore national security issues. Instances of disagreement within the intelligence community as to what the Soviets were doing, and why, made a common view of the problem facing the country difficult.

More recently, the air has cleared. There is ample evidence of momentum in Soviet military activity, and increasing agreement within the intelligence world as to what that activity means. Does anyone today really believe that, without U.S. strength to counterbalance them, the Soviets will not seek to expand their influence -- to the detriment of freedom?

Arbitrary incremental reductions can always be made in the defense budget -- indeed in any budget. In real terms, that is exactly what has been happening to baseline outlays for defense during the last decade.

President's budgets were successively reduced each year. In no particular year did the cutback appear severe or damaging. The sky did not fall because of any one of these reductions. Indeed, still greater reductions could have been made without any immediate or apparent penalty to U.S. security. However, the underlying damage is there; the rot sets in.

It must be remembered that a President works with defense capabilities inherited from his predecessors. Lead-times on modern defense capabilities are as many as 5, 10, or 15 years. Ship overhauls can be delayed, aircraft repairs postponed, investments in modernization stretched out or denied. Those who make the reductions in a given year are not likely to pay the penalty during their duty. It will come later, on someone else's watch, as it has in this instance.

There is no free lunch. If we are to have adequate defense capabilities, if we are to preserve U.S. freedom and security, a price must be paid. Peace and stability cannot be achieved with mirrors, magic wands or good intentions, promises or tricks. In a dangerous world, peace and stability require an underpinning of strength. Strength costs money.

Some disappointments have accompanied the accomplishments. Several of these disappointments -- and their implications -- require serious consideration by the Congress.

-- Congressional reductions in the defense budgets requested by successive Presidents make it difficult to engage in the sustained and orderly programs of modernization and expansion that are necessitated by the continued growth in Soviet military capabilities over the past decade. On that score, the Congress should avoid mistaking transient increases in unobligated balances of budget authority (based on outdated estimates) for reductions in the costs of counterbalancing the expanding nuclear and conventional power of the Soviet Union. As the FY 1978 defense budget and the projected Five-Year Defense Program (FYDP) make clear, those costs have not decreased. They have increased. Congressional support for sustained real increases in defense budgets is, if anything, even more essential today than before.

-- Technological progress and freedom go together in a modern society. Opposition to technological advance is bound to have a negative effect on a nation which must meet the Soviet challenge to freedom in an open society with a relatively small force and with relatively lesser quantities of high-quality equipment. Only technological superiority will enable the United States to keep its forces relatively small. Attempts to suppress new technology are based to some degree on views of American responsibility for the arms competition which have no foundation in fact. Technological restraint on our part would unquestionably be welcomed by the Soviets. There is no evidence that it would be reciprocated.

-- Failure to support the essential strategic mobility program will result in a continued inefficient use of scarce resources and a loss of

defense and deterrent capabilities necessary to the worldwide responsibilities of the United States. The period ahead will be an era when getting there first, even with the least, may be what counts the most. It should not be necessary to deploy more forces in a particular theater than are absolutely essential for purposes of collective defense. However, that is true only if, beyond those minimum essential deployments of men and materiel, the United States has at its call a powerful central reserve and the improving strategic mobility permitted by modern technology. Central reserves without mobility have little value. Worldwide influence without worldwide mobility is a contradiction in terms.

-- Finally, to provide incentives for efficient management, Congressional support is needed to effect economies in the operations of the Defense Department. Management, for example, must be given flexibility to adjust the base structure as forces change, and obsolete methods of compensating and budgeting personnel must be brought up to date.

The Department itself undertook several management initiatives during 1976 in a concerted effort to check spiralling manpower costs and commit a greater share of Defense resources to essential weapons procurement and research requirements. All but a few of these initiatives required affirmative action on the part of Congress.

Over $2.3 billion in FY 1977 savings were generated by refining various legal processes which had dictated excessive and often wasteful Defense pay costs:

-- Presidential refinement of the Pay Comparability Process ($2.1 billion);

-- Military Pay Raise Reallocation Authority ($70 million);

-- Elimination of the one percent retirement "kicker" ($70 million);

-- Limitations upon Payments for Unused Military Leave ($90 million);

An opportunity to save an additional $350 million in FY 1977 and several billion dollars by the close of FY 1981 was lost when Congress failed to approve Defense initiatives calling for:

-- Reform of the Federal (blue-collar) Wage System;

-- Consolidation of DoD Undergraduate Helicopter Pilot Training;

-- Elimination of Dual Compensation for General Schedule Civilian/ Reservists.

These actions will be proposed again in FY 1978. Additional savings beyond the current fiscal year, as well as management improvements, will

result from internal DoD reorganization initiatives involving the consolidation of numerous related functions within both the Office of the Secretary of Defense (OSD) and the Organization of the Joint Chiefs of Staff (OJCS) and realignment of the existing military base structure to conform to current mission requirements and reduced manning levels.

The Department has made every effort during the past year to inform the Congress about its activities. The accompanying table gives some indication of how the volume of this communication has increased during the past 12 years.

TABLE I-1

DoD Responses to Congress

Measurement	Calendar Years 1964	1976	1964/76 Increase (%)
Number of witnesses	630	1,721	173
Hours of Testimony	650	1,425	119
Number of Committees hearing DoD Testimony	24	75	213
Supplemental Questions on Budget Submitted to Secretary of Defense	293	585	100
Pages in Congressional Justification Books	7,189	11,927	66
Written Inquiries (Estimates)	98,000	127,000	30
Telephone Inquiries (Estimates)	568,000	650,000	14

It is against this background that the Defense Report for FY 1978 is presented. We have made significant progress in a short time in both specifics and direction. We are today set on the proper path to assure national security in the decades ahead. The people of our country seek safety, stability, and efficiency. To reach these goals, as this statement will emphasize, we still have a considerable distance to travel.

Last year, I emphasized and illustrated the clearly adverse trends in Soviet and U.S. defense spending and capabilities. I stressed the substantial growth in Soviet military power relative to that of the

United States because of decisions made over the previous decade. At that time I warned that if the comparative decline in American effort and strength were not reversed, the United States would find itself second to the Soviet Union in the essentials of military power, would be seen as weakening in its ability to contribute to peace and stability in the world, and that the effect would be to inject a fundamental instability into the world situation. Adequate military capabilities are the underpinning necessary to the peaceful resolution of international issues; however resourceful the diplomats, and however sophisticated the diplomacy, second place militarily is unacceptable.

A. The FY 1977 Budget

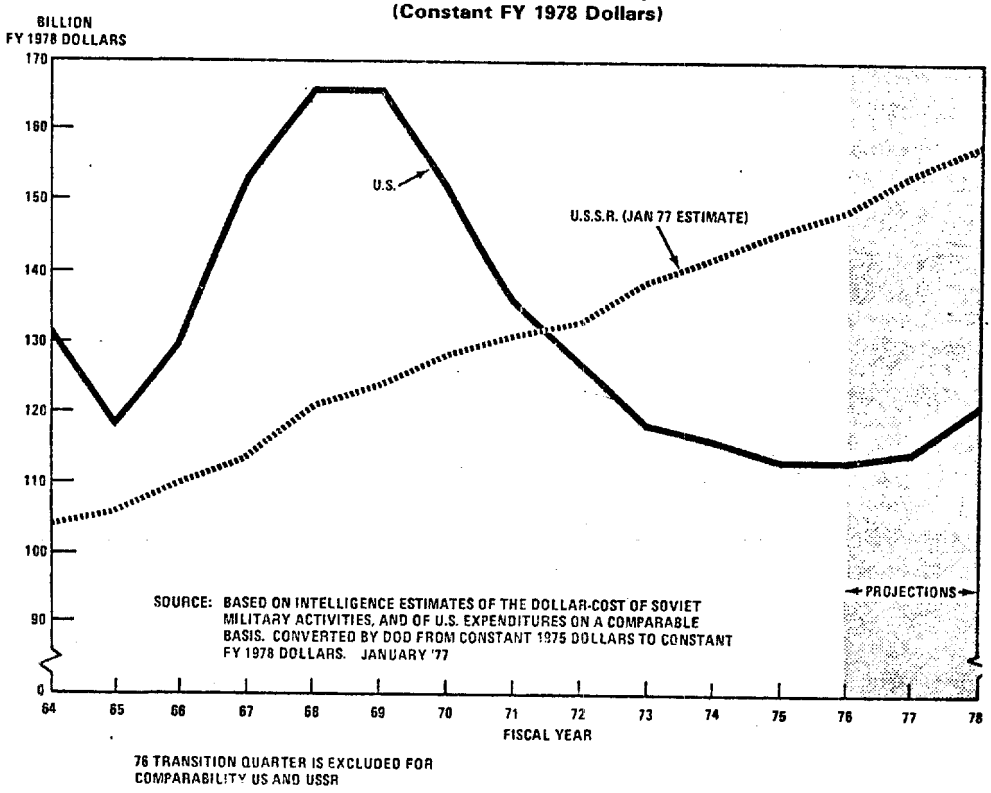
The defense budget presented to the Congress by President Ford in January, 1976, was designed to arrest the relative decline in American military power and lay the foundation for a defense posture adequate to U.S. security needs in the decade ahead. Although the Congress did not appropriate $3.8 billion of the original FY 1977 request, it did provide a real increase in total obligational authority of 5.8 percent from FY 1976 to FY 1977. The decision was a sound one, and the United States and the world will be safer for it. However, national security cannot be provided on a one-shot basis. As the President has emphasized, our security and our ability to contribute to peace will require a sustained effort over a period of years.

CHART I-2

U.S. AND SOVIET DEFENSE PROGRAM TRENDS

(U.S. Outlays and Estimated Dollar Costs of Soviet Programs)

(Constant FY 1978 Dollars)



B. The FY 1978 Budget and Five-Year Defense Program

The effort proposed by the President is without question within our means. Total obligational authority of $123.1 billion and outlays of $110.1 billion are requested for FY 1978. The amounts already appropriated for FY 1977, and those now projected in the Five-Year Defense Program, are shown in the following table.

TABLE I-2

Five-Year Defense Program (Billions of Dollars)
(Fiscal Years)

	1977	1978	1979	1980	1981	1982
Total Obligational Authority						
Current Dollars	110.2	123.1	135.4	145.8	156.7	166.8
FY 1978 Dollars	116.7	123.1	128.8	132.3	135.7	138.6
Outlays						
Current Dollars	98.3	110.1	121.2	133.7	145.5	156.3
FY 1978 Dollars	104.5	110.1	115.2	120.9	125.6	129.0

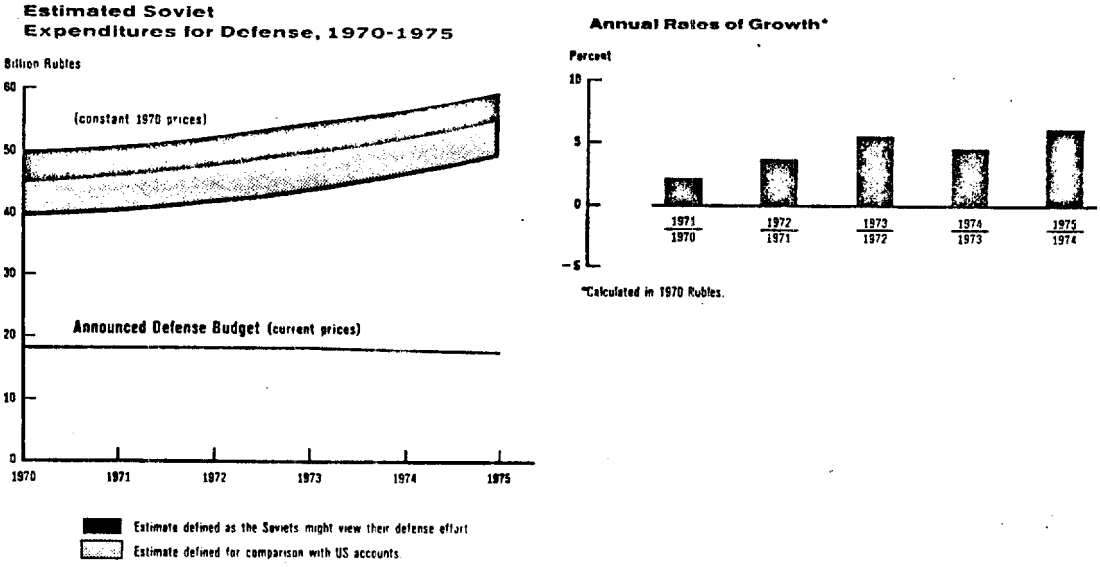
Proposed real growth in total obligational authority from FY 1977 to FY 1978 will be 6.8 percent, practically all of which will go to our investment accounts -- primarily procurement and RDT&E (Research, Development, Test, and Evaluation). Based on current assumptions about pay and price increases during the Five-Year Defense Program, real growth from FY 1978 to FY 1982 will continue to be substantial, and, most of it, again, will be concentrated in capital investments. Since the program assumes military personnel of about two million men and women, the projected increase and its allocation represent an efficient way to add needed capabilities.

C. Basis for the Proposed Increases

The main reason sustained increases are required is the military policy of the Soviet Union. We now know more about the Soviet defense effort than we did a year ago. The pace of Soviet military programs is about as we estimated it in early 1976, but the resources allocated to the effort are larger. The facts are clear, and so is the challenge. It will require a sustained response.

CHART I-3

ESTIMATED SOVIET DEFENSE EXPENDITURES AND ANNUAL RATES OF GROWTH (IN CONSTANT RUBLES)



The Soviets are continuing to expand and modernize major elements of their defense posture. They are continuing to add to their large war production base. Some of their equipment is beginning to equal ours in technological sophistication. The Soviet Union is a power which is engaged in a serious, steady, and sustained military effort. Whatever its purposes, its options are growing as the West's have diminished.

The United States effort must be as serious, as steady and as sustained as that of the Soviet Union. Starts and stops will not do. We cannot continue to believe that U.S. technology, the sophistication of U.S. weapons, and the considerable talents and skills of the men and women of the Armed Forces -- substantial as they are -- will suffice by themselves to make up for substantial quantitative advantages of our rival. As the Soviets add quality to quantity, we must add quantity to our technology and skills.

Given present estimates, the B-1 and Trident programs, combined with an FY 1984 initial operating capability for Missile X (MX) and continued research and development on elements of our strategic defenses, should prevent the Soviets from obtaining any useful advantage in strategic nuclear capabilities during the period ahead.

Reconstitution and expansion of U.S. Army stocks of equipment in Europe will increase the rate at which the United States can reinforce

its deployed capabilities in NATO and should contribute to deterring attacks on Western Europe. Modernization of the Army's forces based in the United States will strengthen our ability to reinforce NATO and increase our capability to deter or respond to a variety of other contingencies. Our strategic mobility, worldwide, will be increased by an expanded procurement of Advanced Tanker/Cargo aircraft. Acquisition of modern sealift units will further improve our ability to transport heavily-equipped combat forces to distant areas.

The shipbuilding program, as proposed, will significantly expand the size of the Navy, and our capability to assure the freedom of the seas to the end of this century. A growing number of ships will allow both increased worldwide presence in peacetime and greater overall effectiveness in wartime. The funding of service life extensions for the Navy's multipurpose carriers and modernization of the Marine Corps and amphibious forces will provide necessary U.S. sea-based tactical air and seaborne assault power for the continued projection of deterrence where U.S. interests dictate.

Modernization of the Air Force tactical air units will continue. Investment in AWACS, the F-15, F-16, and A-10 will improve the U.S. ability to defend more effectively against the Warsaw Pact tactical air and ground forces in Europe, or respond rapidly to other contingencies, worldwide.

The achievement of these improvements requires larger U.S. defense budgets over a period of years. Nothing is more essential than that the American people and their representatives understand the necessity of this increased effort. At stake is nothing less than the safety of the United States and the survival of freedom. To be safe, free, and independent, we must be vigilant, steady, and strong.

II. THE BASIS FOR PLANNING

The dangers ahead dictate explicitness about the assumptions and logic that lead to the defense posture of the United States and shape the budgets now before the Congress. Only if the premises and chain of reasoning are provided to the Congress and the American people, and understood by them, can we expect to receive the necessary hearing on a subject so vital to the nation. Accordingly, this annual Defense Report is designed, in its first section, to specify the principal factors and assumptions which have impact on the current posture, and the principal objectives of proposed defense programs.

The second section of the Report analyzes the issues faced in reaching the objectives set forth and describes the programs best suited to meet them.

A. Approaches to Planning

Defense decision-making is occasionally pictured as reflecting essentially the influence of parochial interests. However, no one who has actually observed the planning process in the Department of Defense and the interaction with the Office of Management and Budget, the National Security Council, the President and the Congress can be the slave of such half-truths. Perhaps more than in any other department of government, Defense has a long tradition of systematic, analytical, and cost-conscious approaches to its needs. Too much is at stake for the planning process to take any other form.

Major historical trends in U.S. and Soviet defense spending and military capabilities offer one way to grasp the broad security problems that face the country. We cannot allow Soviet capabilities to rise and U.S. capabilities to decline for an extended period of time without inviting a major crisis for ourselves and for the world.

But trends by themselves -- however adverse -- cannot tell us what forces should be acquired in order to reach our security objectives. Simplistic recommendations for an arbitrary but specific annual increase or decrease in the defense budget serve the nation no better. There is no fixed percentage by which our resources should expand or contract each year. Rather, there are capabilities that must be provided.

The approach to planning which specifies a defense posture as the mirror-image of an opponent's capabilities has the virtue primarily of simplicity; but it misses so much else essential to serious and systematic planning that it can rapidly lead to major and expensive absurdities in force and weapons acquisition. As a result, it has no standing among planners.

To take account of the many and diverse factors that should shape the defense posture of the United States, the planner must turn to specific contingencies -- illustrative conflicts that could occur now and in the future -- and analyze what would be needed to maintain U.S. interests under these conditions. Only an understanding of hypothetical but not necessarily improbable attacks permits a serious insight into the types and quantities of military resources that must go into a defense posture sufficient to achieve the nation's objectives with high confidence.

B. Types of Planning

Defense or force planning is not the same as the more detailed contingency and operational planning done by military staffs. Rather, its main purpose is to ensure that resources, in the form of force structure, personnel, weapons, materiel, supplies and other factors necessary to military effectiveness over a wide range of contingencies, are available to the President and his subordinates. As such, force planning does not, and should not, dictate where or how these capabilities should be used. In the face of many uncertainties, force planning strives -- within the budgets provided -- to furnish the President with sufficient power and flexibility to conduct national security policy in a manner consistent with the nation's interests.

C. The Importance of Analysis

Because so many real uncertainties are involved, and so many interests are at risk, conservatism in the design of the U.S. defense posture is in order. Superiority over, or insistence on numerical equivalence with potential adversaries, may be justified. But underlying such considerations must be a bedrock of analysis based on the world as it actually exists. Modern force planning has the virtue of providing such a foundation. It demands specificity about a number of factors:

-- the theaters in which contingencies could arise;

-- the nature of the contingencies;

-- potential enemies and allies;

-- the roles U.S. forces could be expected to play; and

-- the types of forces that could be used.

To identify these factors, modern force planning requires a context within which the detailed analysis of hypothetical campaigns, the clash of forces, and selection of preferred defense postures can proceed. Even manpower planning and research and development must and do take current and expected contexts into account.

III. THE IMPACT OF TECHNOLOGY

Part of the planning context is provided and shaped by the revolution in military technology launched during World War II and continuing to this day. The most profound effect of this seemingly permanent revolution has come from the invention of nuclear weapons and the means to deliver them at intercontinental ranges with increasing accuracy.

A number of major consequences have followed from the introduction of nuclear weapons, increased long-range accuracy, and the growth of related technologies.

-- First, to a degree unprecedented in its history, the United States has become directly vulnerable to devastating attack.

-- Second, a nuclear standoff -- however dynamic and precarious -- has developed in which it seems widely recognized that the strategic and tactical nuclear thresholds must be kept as high as possible and, as a result, and somewhat less widely recognized, that the more traditional conventional capabilities remain of fundamental importance.

-- Third, the United States must maintain three basic types of military force -- strategic nuclear, theater nuclear, and conventional -- and peacetime defense budgets that must be higher than during the seemingly quieter years before World War II.

-- Finally, the technological revolution has caused the paradoxical effect of reviving, albeit in a modified form, the geopolitical character of the world of pre-nuclear years.

The possibility of nuclear warfare is certainly still with us. Nonetheless, we find the world resuming a more conventional shape and harboring many more traditional concerns than many assumed only a decade ago. Geography, and the politics and strategies imposed by it, never actually lost their importance during those years called the nuclear age. But today we recognize far more than in the 1950s and 1960s not only the basic importance but also the limited utility of nuclear weapons and, therefore, the vital role of conventional weapons in maintaining defense and deterrence. Geopolitics and an appreciation of its implications for national security have become essential to modern force planning and the design of the U.S. defense posture.

IV. FOREIGN POLICY AND FORCE PLANNING

The Congress recognized the relationship between foreign policy and force planning in passing Section 812 of the FY 1976 Department of Defense Authorization Act. This amendment requires that "the Secretary of Defense, after consultation with the Secretary of State, shall prepare and submit to the Committees on Armed Services of the Senate and House of Representatives a written annual report on the foreign policy and military force structure of the United States for the next fiscal year, how such policy and force structure relate to each other, and the justification for each."

A. Defense and Foreign Policy

As this Report set forth last year, the U.S. defense posture does not and cannot be made to relate directly to the short-term objectives and strategies of foreign policy decision-makers, although it can and does contribute in a fundamental way to the environment in which such decisions are made. The military establishment constitutes an instrument at the disposal of the nation, just as diplomatic, economic, and other means are available and may be applied to achieve national objectives. And, just as we should hesitate to change the size and composition of firefighting forces or insurance coverage because the need for them may temporarily seem to lessen, so we must be cautious of suggestions that we can safely reduce U.S. defense capabilities simply because, during a period of peace, they are successfully demonstrating their value. The defense establishment is an institution as easy to tear down or cripple as it is difficult to reconstruct and indeed impossible to reassemble rapidly, owing to the long lead times required for modern military capabilities.

To say that, however, is not to argue that the size and composition of U.S. Armed Forces should be insulated from what happens in the world. The nature of force planning is such that elements of our defense posture tend to be sensitive in a number of respects to considerations of geopolitics. To the extent that our assumptions about those considerations evolve, the U.S. defense posture may -- but only may -- evolve as well.

What is the current map of international politics? It no longer shows a world of many great powers. The United States, separated from a number of its friends by two oceans, has become the primary champion of freedom, self-determination, and international pluralism. The Soviet Union, its imperial domain already sprawled over two continents, continues to extol in action if not always in words the virtues of authoritarianism, a command economy, and the subjugation of the individual to the state.

The constituents of Soviet ideology are probably more numerous than ours. Political and economic freedoms are expanding in a few nations --

Greece, Portugal, and Spain -- but at present in many other places they are contracting. If the great issues of international politics were to be decided by vote in the General Assembly of the United Nations, the side of freedom would win rarely. The United States and its friends are in a minority. They are under pressure in a divided and dangerous world.

Instability has been increased by the spread of technology across this splintered and shrinking world. As modern societies have become more dependent on foreign sources of supply, on interconnected systems of communication and transportation, on international systems of production, commerce, and banking, they have grown more vulnerable to a variety of attacks -- ranging from political intimidation, economic pressures and terrorist acts to full-scale military assaults.

Modern conventional weapons no longer are the exclusive property of the larger industrial states. Nuclear technology now threatens to spread to many areas suffering from a shortage of energy, a sense of insecurity, or both. To these conditions, must be added the weakening of traditional international order, the collapse of old empires, and the rise of the Soviet Union as an expansive world power. The effect of these changes is that what happens elsewhere has an impact on us. Events in distant corners of our increasingly interdependent world cannot be ignored by the United States. Nor can they be met without some risk.

Caution and reluctance are understandable. But events of the past two decades have not made the United States more independent politically, economically, or culturally. On the contrary, the realities of interdependence -- more so than ever before in our history -- oblige us to face the world as it is, not as we might wish it to be.

No nation is "an Island, entire of itself;" "every nation is a piece of the Continent, a part of the main." The United States is no exception. But this much must be added. No nation has done more to accompany its involvement with a continuing search for the peaceful and equitable settlement of international differences.

-- It was the United States, not the Soviet Union, which first sought constructively to control strategic nuclear arms and achieve mutual and balanced force reductions in Europe.

-- It was the United States, not the Soviet Union, which has worked to end the fighting in the Middle East.

Our good faith in contributing to peace cannot be in doubt. Yet this remains an era in which the statesman and the soldier must keep close company. Constructive diplomatic initiatives are necessary. They must be supported by strength.

B. U.S. Interests

The force planner, faced with a dangerous world, must ask where we may be called upon to deploy and operate the nation's forces. Perhaps his best initial guide to an answer lies in identifying the main and continuing interests of the United States. Our most fundamental interest lies, of course, in preserving the independence and territorial integrity of the United States and its possessions. The common defense is a Constitutional requirement and duty.

However onerous that charge in a world shrunken by technology, it by no means ends the responsibilities of the force planner. U.S. interests inevitably exceed these boundaries. It is understandable that the determination of interests beyond the territory of the United States is less precise, subject to evolution, and a topic of debate. Nonetheless, the determination must be attempted.

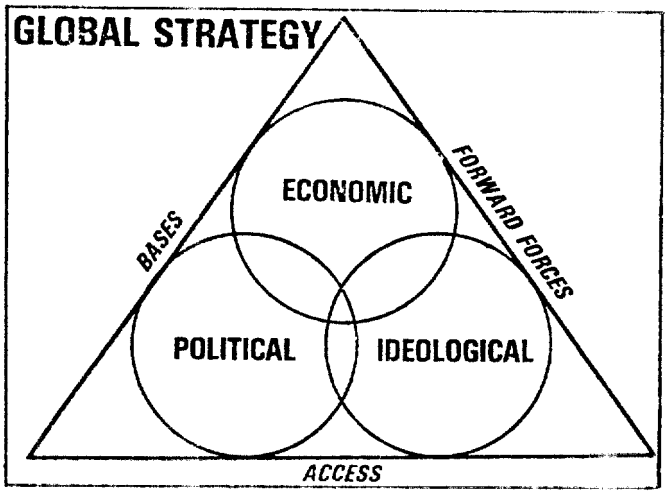
CHART IV-1

GEO-POLITICAL CONSIDERATIONS

- ECONOMIC INTERESTS
- POLITICAL COMPETITION
- SUPPORT OF FREEDOM

— ALL REQUIRE GLOBAL MILITARY ASSETS AND ACCESS

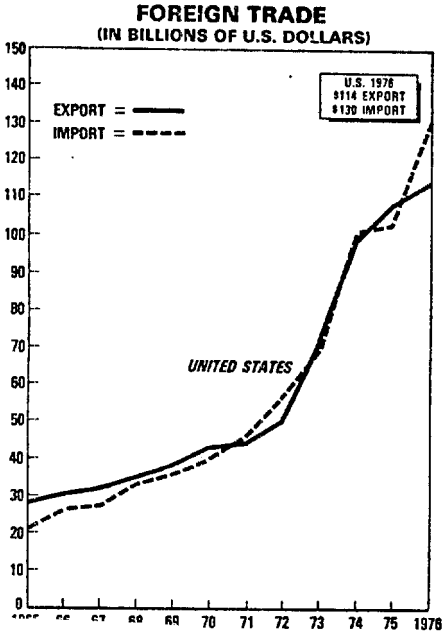
— ALL REQUIRE A GLOBAL STRATEGY

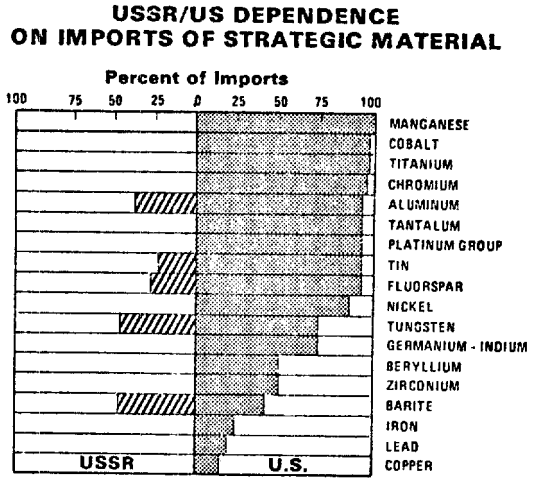


1. Economic Interests

The United States is not an economic island. We depend for our standard of living and economic security increasingly on raw materials imported from abroad, and some of these imports have strategic value as well. We find it profitable to trade and invest abroad; imports and exports now total more than $200 billion a year, and U.S. international investments are currently valued at more than $100 billion. The United States, to be sure, is singularly blessed in having inherited a rich and spacious resource base; we would suffer less than most if we were to lose access to foreign trade, investment and raw materials. With belt-tightening and a substantial decline in standards of living, we could still manage. As the OPEC oil embargo of 1973 demonstrated, we would suffer dislocations, but our allies in Europe and Northeast Asia might be mortally wounded by any prolonged interruption in the established patterns of international trade.

CHART IV-2





2. Political Interests

The vulnerability of our allies, particularly in Europe and Northeast Asia, underlines the complexity of contemporary U.S. interests and the degree to which they are interrelated. In a world where strategic nuclear parity has caused conventional power to rank in importance with nuclear power, we cannot go it alone. We seek both to deny accessions of power to rivals and to ensure sufficient friendly power -- political and economic as well as military -- to counterbalance that of our competitors. Because of these interests, we must care about the economic welfare of our allies even when our own is not directly in jeopardy. Because of these same interests, we find ourselves associated regionally with what, ideologically, may strike some of us as strange bedfellows. However, for those knowledgeable in the ways of domestic politics, in the United States as elsewhere, coalitions of this character should come as no surprise. Politics, whether domestic or international, rarely permit the luxury of ideological purity. Even if we make democratic freedoms the test of our association with other nations, we must not forget that all authoritarian institutions are neither identical in their repression of freedom nor irreversible in their tyranny, as we have seen successively in Greece, Portugal, and Spain. Nor are they similar in their actions with respect to self-determination for other nations.

3. Ideological Interests

To cite the fact of political balances -- balances that exist in any political process, however peaceful, orderly and democratic -- is not to minimize our dedication to democratic values at home and support of those beliefs abroad. Freedom of choice, whether economic, political or personal, is a rare privilege in this turbulent world. As a people, we have not sought to impose on others a system of government which guarantees such rights. But we have a duty both to advocate democratic principles and to encourage those societies where freedom grows or continues to flourish. So, too, it is logical that we treat differently nations within the large group that do not practice freedom, distinguishing between those which are aggressive and do not respect the rights of others, and those which respect the self-determination of values.

4. The Global Nature of U.S. Interests

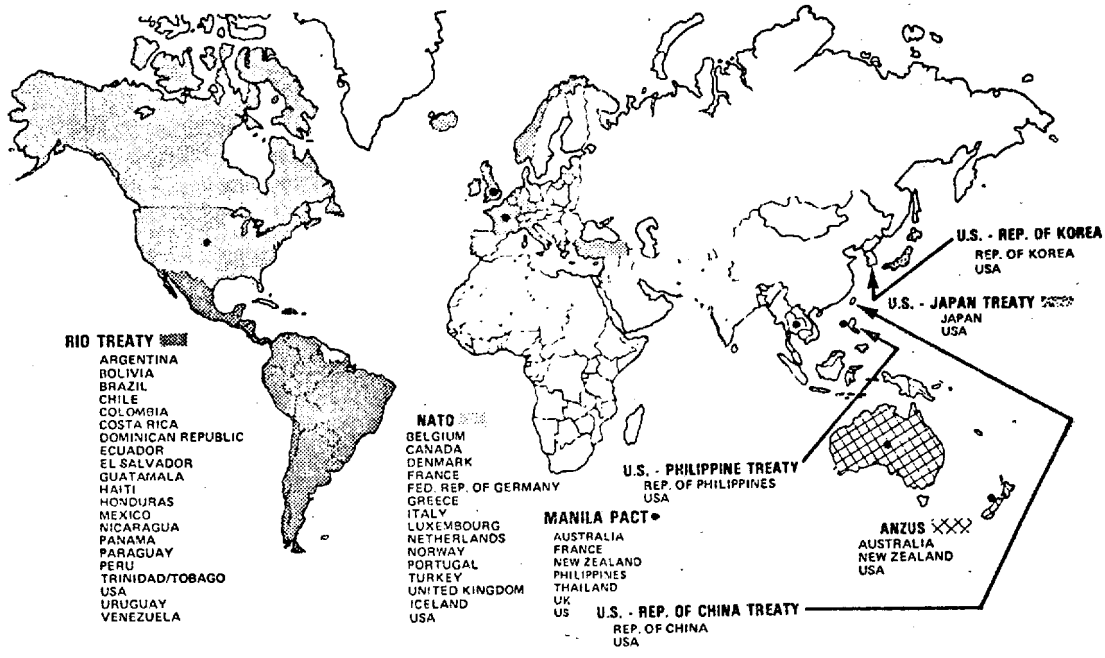
Our interests -- political, and economic -- are necessarily worldwide in nature. The bulk of U.S. trade and overseas investment focuses on the highly industrialized nations of the Western Hemisphere, Europe and Northeast Asia. But we draw on critical raw materials from the Middle East and Persian Gulf, Africa, Asia, and Latin America. Our dependence on foreign energy supplies has risen dramatically in the past 15 years, and it continues to grow. Already over 40 percent of our petroleum

comes from external sources, and more than 33 percent of that total is imported from the Persian Gulf. We draw on tin from Malaysia, Thailand and Bolivia; on manganese from Brazil, Gabon, South Africa and Zaire; on titanium from Australia and India.

U.S. political interests are extensive: witness our commitment to eight formal treaties of mutual security -- with Latin America, the North Atlantic Treaty Organization (NATO), Australia and New Zealand (ANZUS), Japan, the Republic of Korea, the Republic of China (Taiwan), the Philippines, and Thailand through the Manila Pact. The United States is a full participant in CENTO (Central Treaty Organization), but not a signatory. We have longstanding commitments to the security of Israel, and important links to Iran, Saudi Arabia, and Spain. While most of these commitments date back a quarter of a century or more and reflect the containment strategy adopted at that time, they still reflect our basic political interests.

CHART IV-3

DEFENSE ALLIANCES & TREATIES WITH U.S.



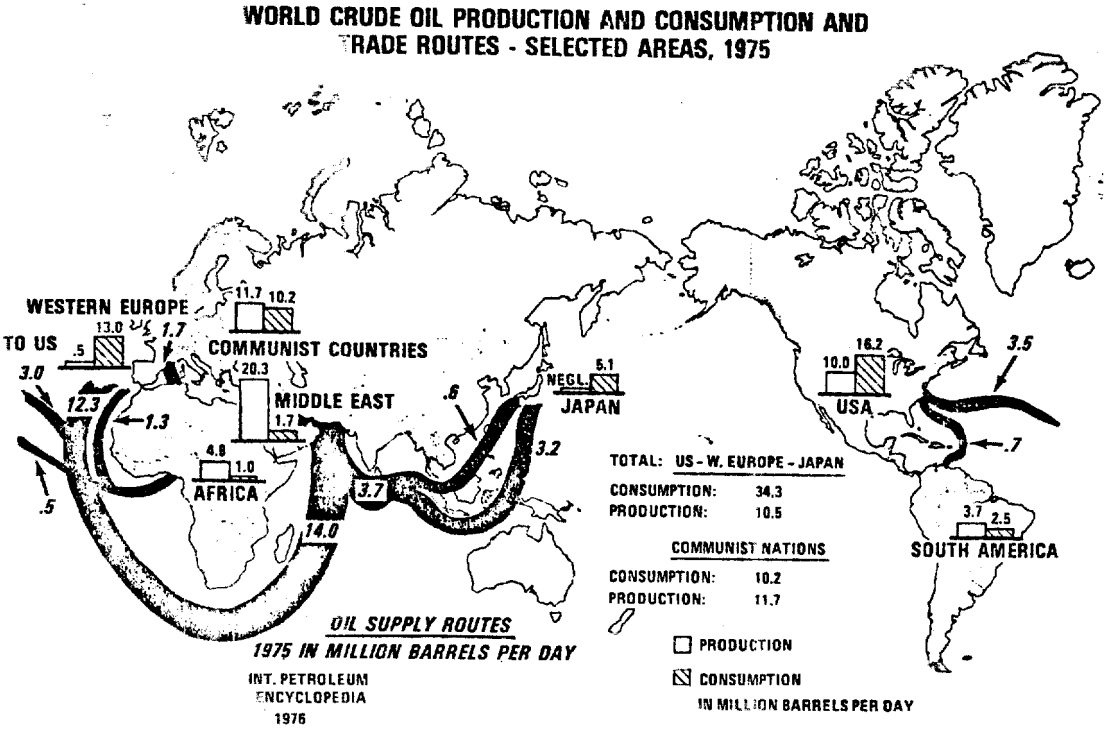
It surely is the case that if the United States so wishes, it can -- with a Gross National Product of nearly $2 trillion -- tailor its capabilities to its needs.

It is by no means clear, however, that a reduction in present U.S. commitments abroad would result in a reduced defense posture. Much depends on the threat. An isolated America, without any external obligations but with most of the world organized against it -- with previously allied or friendly nations shorn of our present support and drawn into the Soviet orbit -- would require a much more substantial defense effort and budget than is the case today.

5. Strategic Interests

The worldwide nature of U.S. political, economic, and ideological interests inevitably brings other interests in their train. Despite technology, we still depend on the seas for the bulk of our external commerce. And because we are a large trading nation -- as we have been throughout our history -- we must be vitally interested in the freedom of the seas and the narrow waters that connect them. The new domain of space, with its opportunities for communication, geodesy, meteorology, and a host of vital military activities, is rapidly growing in importance.

CHART IV-4



Our interest in freedom of access to space has already become great. Most important, because this is a geopolitical world in which conventional as well as nuclear power plays such a role, we continue to have worldwide strategic interests.

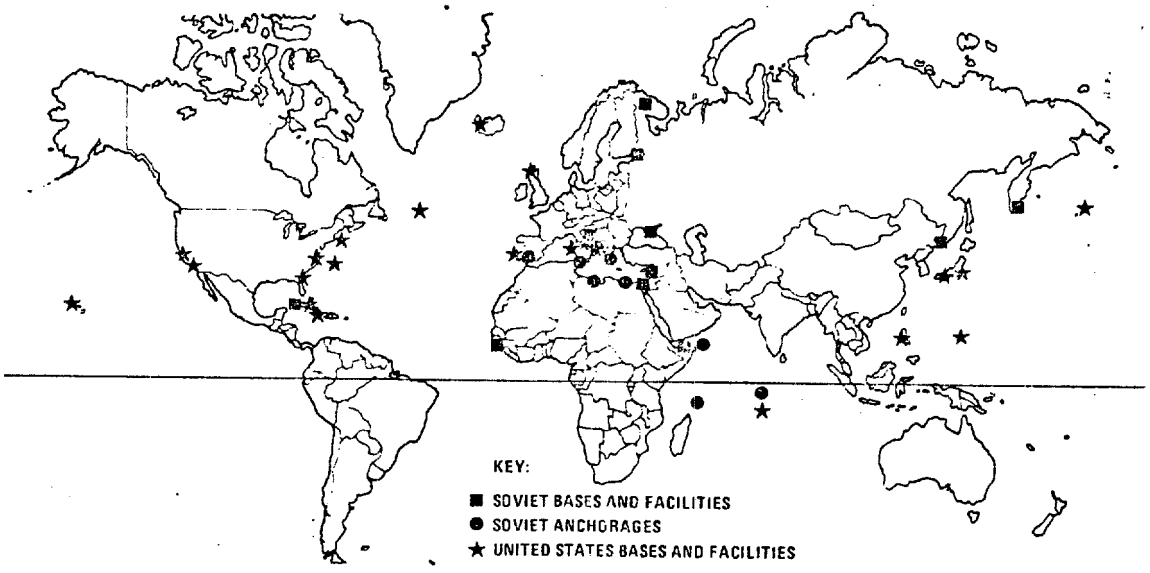
Nuclear forces, for the most part, concentrate unprecedented amounts of firepower into relatively small units. As a consequence, very powerful blows can be struck with nuclear delivery systems at intercontinental ranges. And because these systems are so powerful at such great distances, there is a tendency to assume that the outcome of a nuclear conflict would be decided in a matter of hours or at most days.

Conventional forces, by contrast, require large concentrations of men and materiel to be effective. Their radius of effectiveness is limited, and the outcomes of major conventional wars have usually been decided only after extended campaigns of attrition. Personnel, equipment and supplies must be transported over great distances; stockpiles of combat consumables must be established; multiple campaigns may be fought; and victory must usually come from incremental and cumulative progress by air, sea, and land. The length and cost of this process will depend to an important extent on the geographical positions of the belligerents.

Even in an era of wide-bodied aircraft and improving strategic mobility, enormous advantages accrue from forward deployments of forces.

CHART IV-5

MARITIME BASES AND FACILITIES



Strategically located bases are necessary to protect lines of communication -- especially when our interests overseas are great and distant. It is one thing to think about the defense of Western Europe with U.S. divisions and air wings based in Germany, with the control of such narrow waters as the Bosphorus and the Strait of Gibraltar in friendly hands, with a fleet deployed in the Mediterranean, and with bases in the United Kingdom, Iceland, Greenland and the Azores. It would be quite another matter to contemplate a defense without those assets and with the entire U.S. military effort having to be sent directly from the United States to the front. Despite the advances in technology, we have not freed ourselves either from the need to project our own power in an efficient manner, or from the requirement to deny strategic areas to those who might be our adversaries.

6. The Conditions of U.S. Defense

To set forth the international interests of the United States is to define the objectives which guide U.S. foreign policy and force planning.

The central objective of U.S. foreign policy is to maintain an international order that assures the physical security of the United States, its economic well being, and the preservation of its institutions and values.

For over three decades the United States has worked toward this objective, primarily by policies to enlist the active collaboration of the industrial democracies in defense, in economics, and in other areas of international life where there was a sufficient commonality of interest and objectives to permit a collective response. These policies have been remarkably successful. A collective defense has helped to deter general war and has provided security to the system's participants while reducing the financial burden on each. Behind this defensive shield, the economies of the industrial democracies have prospered, political stability has been encouraged, and social justice broadened. Although there have been important departures from this general pattern, the overall results validate a continuation of the basic policy of collective defense.

The conditions under which this policy and force planning will be pursued during the next few years are likely to be characterized by:

-- the continuing growth of Soviet military power and of a capability to project it into areas and to ends damaging to U.S. interests;

-- maintenance of current alliance relationships and acceptance of Spain's importance to NATO;

-- continued dangers of nuclear proliferation and of nuclear warfare;

-- rapid technological change;

-- the increasing economic dependence of the United States and its major collaborators on each other and on the so-called Third World for raw materials and energy, and their vulnerability to any significant disruption in the flow of these goods;

-- tension and disorder in much of the underdeveloped and parts of the developed world, which -- with the increasing availability of sophisticated arms, the growth of major regional powers, and uneven economic, political, and social development -- will create opportunities for external manipulation and polarization of political attitudes against the West, and make international relations more difficult and dangerous for the West; and

-- the continuing importance of the PRC as a factor in the security balance between the industrialized democracies and the Soviet Union.

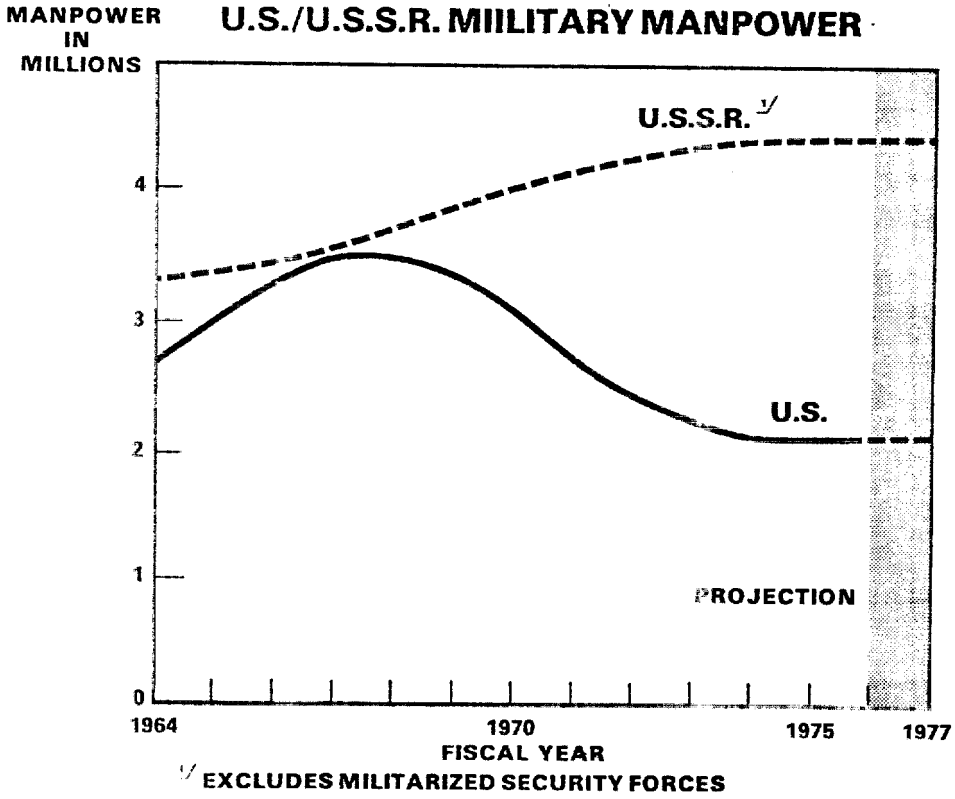
V. FOREIGN MILITARY CAPABILITIES

The greatest threat to the United States comes from the Soviet Union. While controversy continues to ebb and flow about the intentions of Soviet leaders, there can be no doubt about the capability of Soviet armed forces to threaten U.S. vital interests, including the United States itself.

A. The Soviet Union

There are 4.4 million men in the Soviet military establishment (compared with 2.1 million men and women in the active elements of the U.S. Armed Forces), and that total does not include well-armed border guards of the KGB and the security units of the MVD. All the elements of modern power are heavily represented in the Soviet military establishment,

CHART V-1



including intercontinental strategic nuclear forces, large and growing theater nuclear forces, and a wide range of non-nuclear capabilities, including chemical weapons. Each of these forces, while expanding in size, has been given weapons and communications equipment of increasing sophistication. The Soviets have not seen quantity as a substitute for

quality; for the most part, they have kept the one and worked to improve the other. Technologically, their military establishment is now approaching the quality of our own in many respects.

We should not be misled, in this connection, by news stories about the Soviet MIG-25 (Foxbat), a high-altitude interceptor which its pilot landed in Japan last September. Design of this particular model of the Foxbat began in 1960, probably as a defense against the B-70 and SR-71, which were then being developed by the United States. Foxbat first flew in 1964, and became operational in 1970. It is, for its time, a good combination of technical sophistication and cost-consciousness. Titanium has been used only where necessary; the same is true of aluminum honeycomb and solid state devices. The designers have compensated for the weight of the aircraft by powering it with two turbojet engines, each with about 25,000 pounds of thrust, and by giving it a greater internal fuel capacity than had been estimated. Most of the components are "off-the-shelf." Care has been given to ensure ease of maintenance.

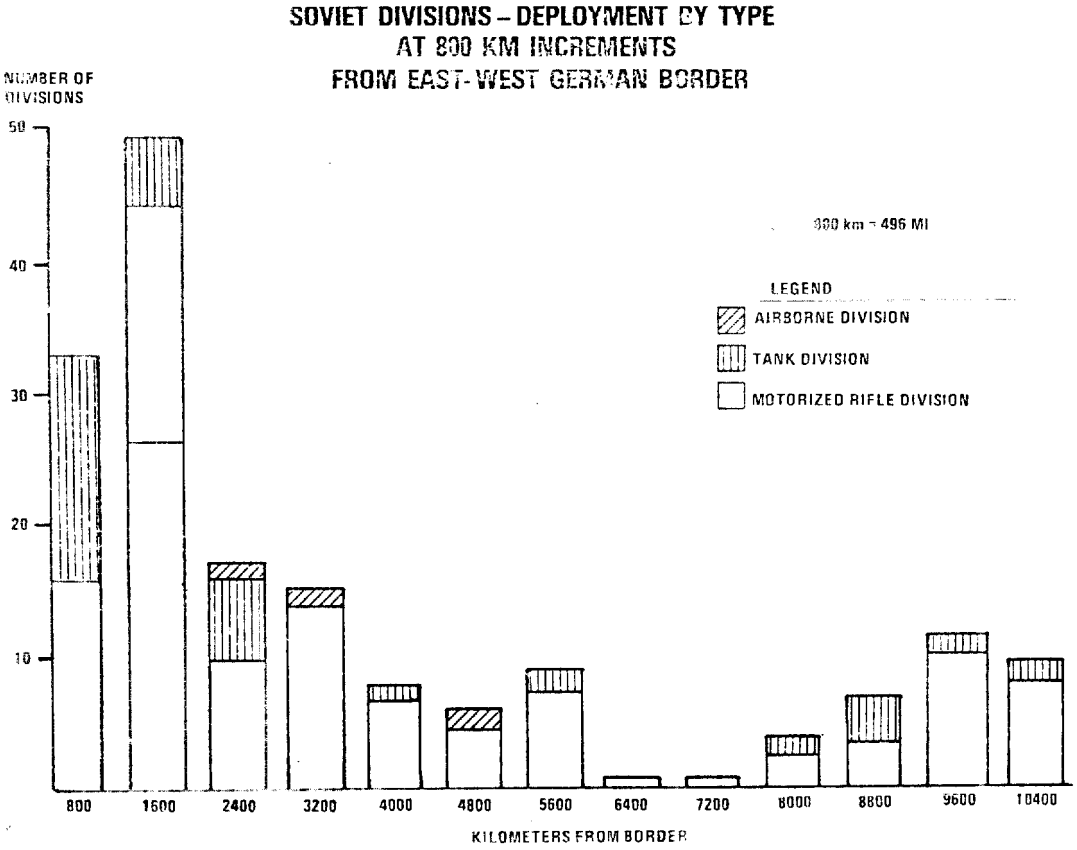
The result is an aircraft with an excellent climb capability, high speed at altitude, a system to control its flight from the ground, and the ability to deny high-altitude overflights of the Soviet Union. Not only is Foxbat a capable aircraft for its time; it provides a significant technological benchmark from which the Soviets have advanced in the succeeding 16 years.

A major portion of Soviet theater nuclear and conventional forces is oriented toward Western Europe. There are 27 divisions and 1,400 aircraft poised in East Germany, Poland, and Czechoslovakia; another 4 divisions and 265 aircraft continue their occupation of Hungary. Substantial Soviet forces are also deployed to the borders of the People's Republic of China (PRC).

In the heartland of the USSR is an ICBM force -- some of it now deployed under the cover of the Moscow anti-ballistic-missile (ABM) defense system -- which numerically is 50 percent larger than the U.S. ICBM force. At sea and under construction are 75 ballistic missile submarines capable of attacking the United States. The Backfire bomber continues to come into service with both the Long Range Aviation and Naval Aviation forces of the USSR. Anti-bomber defenses remain substantial, and it is now evident that the Soviets seek to provide key elements of their population, industry, and food supplies with some degree of protection against nuclear attacks.

These nuclear strike capabilities and strategic defense forces seem excessive for second-strike purposes. Their locations and the nature of Soviet military planning are bound to cause some ambiguity about the roles and missions assigned to them.

CHART V-2



There is far less ambiguity about other forces available to the Soviets. The Soviets now have 7 ready airborne divisions which, as they demonstrated during the Middle East war of 1973, they would consider deploying overseas in special contingencies. They have also developed a substantial capability for long-range airlift with which they transported a great deal of war materiel to Angola and assisted in the transfer of a sizeable Cuban expeditionary force to Guinea in 1975. The Soviet navy continues to evolve into a force with worldwide capabilities, supported by a merchant marine designed to support military operations in peace and war.

What we are witnessing, at the minimum, is a growing capability sufficient to enable the Soviet Union to become a major participant in world geopolitics. In certain respects, they have already broken through or leapfrogged some of the barriers erected by the containment policies of earlier decades. Given the momentum of their programs, it must be assumed that this process will continue in the future.

Of particular significance is the continuing momentum behind Soviet defense programs. As far as can be judged, while U.S. defense outlays, until recently, have been in a long, slow slide and were more than 13 percent lower in 1976 than in 1964 (in constant dollars), the Soviet defense effort (estimated in U.S. prices) increased in real terms by more than 40 percent in the same period. Estimates show that in 1964, U.S. defense spending exceeded comparable Soviet efforts; by 1976, however, the situation had been reversed, with the Soviet level of effort exceeding that of the United States by over 30 percent in dollar terms and by nearly 40 percent when retirement costs are excluded.

Perhaps even more important over the longer term are the economic resources invested in future, not current, military capability. Estimates indicate that Soviet programs in RDT&E, military construction, and procurement have exceeded those of the United States in every year since 1966. In 1976, the Soviet military investment program was more than 90 percent larger than that of the United States.

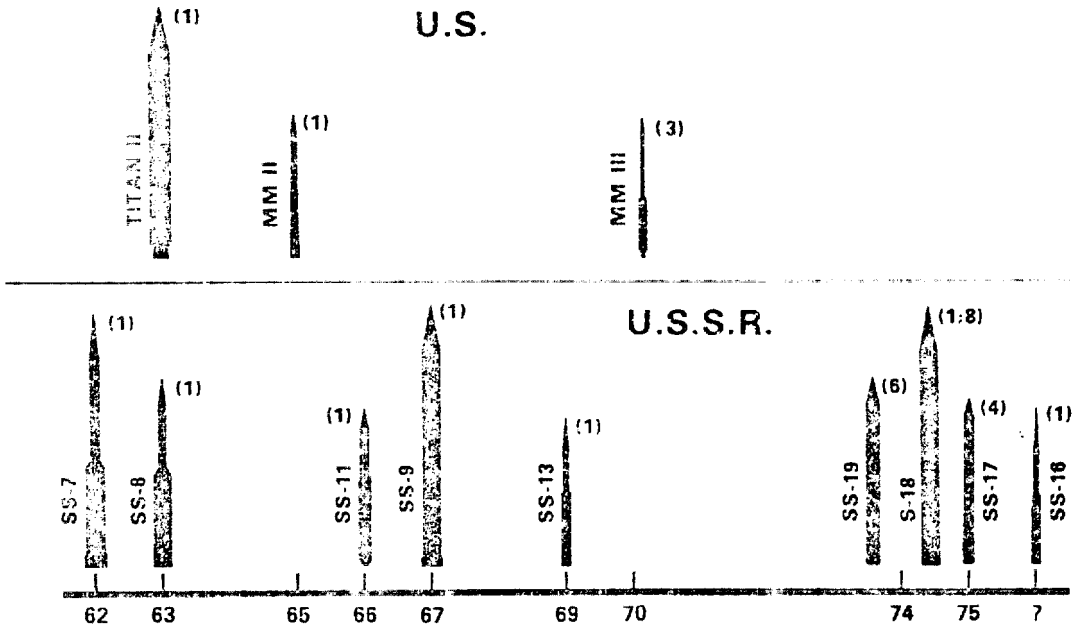
The bulk of both total Soviet military spending and the increases in it (measured in rubles) have gone to forces which constitute a direct threat to the United States and its European allies. On the average, the costs of the Soviet forces oriented toward China took about 11 percent of the total Russian military budget between 1964 and 1976. During those 12 years, roughly 15 percent of the growth in the Soviet level of effort, on the average, can be attributed to the buildup in the Far East. The remaining 85 percent has been allocated to strategic nuclear forces and the forces deployed opposite NATO Europe.

Because of the resources allocated to the Soviet defense effort during the past decade, the Soviets have consistently outproduced the United States in tanks, armored personnel carriers, artillery, submarines, and minor naval combatants. Their present output of tactical aircraft and even helicopters is now greater than ours. While the United States has developed one new ICBM since 1965, the MINUTEMAN III, the Soviets have developed seven. Of their newest generation of ICBM's, three -- the SS-17, SS-18, and SS-19 -- have (compared with the MINUTEMAN III) greater throwweight, more and higher-yield multiple independently targetable re-entry vehicles (MIRVs), and nearly comparable accuracies. With a large and growing war production base, and an expanding corps of scientists and engineers devoted to military research and development, reasonable observers must conclude that, if anything, these many programs will continue to accelerate.

We cannot state with certainty exactly why all of these scarce resources (from a Gross National Product probably no more than two-thirds as large as ours) are being devoted to military power. But as I have pointed out: It would be unreasonable to assume that a nation would develop that kind of capability, that number of square feet under roof of shipyards, laboratories, test facilities, that number of scientists,

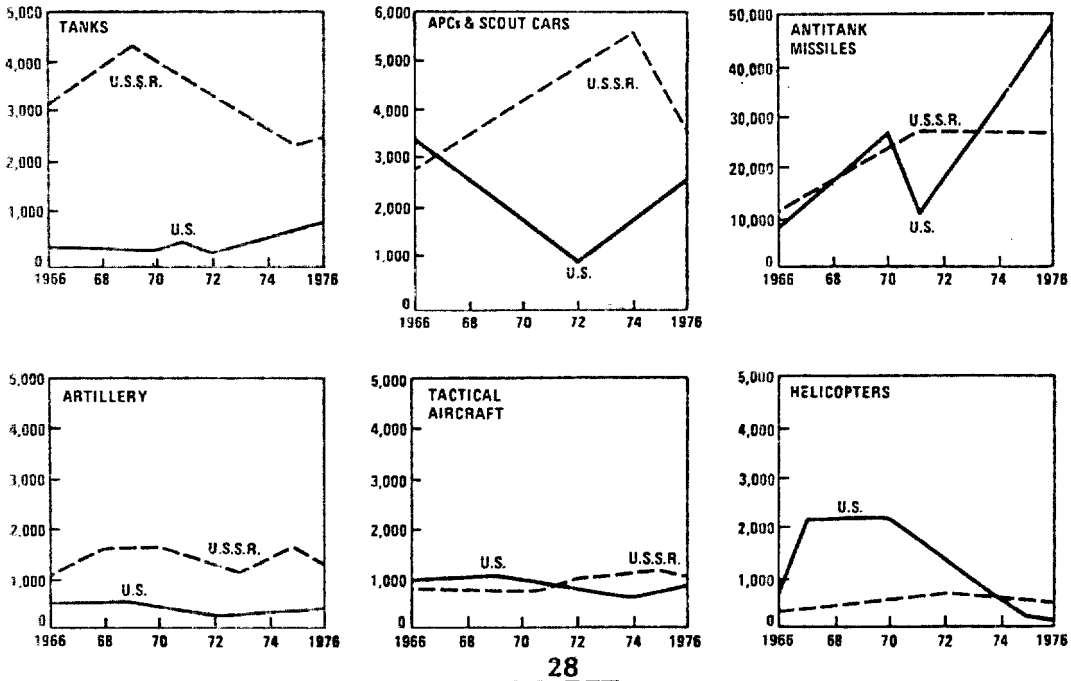
CHART V-3

US AND SOVIET ICBM DEVELOPMENTS [1/]



[1/] The numbers in parentheses represent the number of independently targetable re-entry vehicles associated with each missile

TRENDS IN US/USSR PRODUCTION OF GROUND FORCE EQUIPMENT 1966 - 1976



engineers, and construction workers, suddenly to turn them off. It is a pattern; it is clear; it is unambiguous; it is providing increasing military capabilities which, in turn, offer the Soviets increasing military options; it cannot be ignored.

To be sure, the argument can be and has been made that this large and dynamic effort results simply from a traditional fear and distrust of the outside world. However, the Soviet people are ruled by a totalitarian regime with a passion for secrecy and a capacity for abrupt reversals of policy. Stalin demonstrated this capacity in 1939 when he suddenly allied himself with Nazi Germany. Times have changed, we are told, since the paranoid years of the old dictator. But it was not Stalin, who ordered the invasion of Hungary in 1956, nor was it Stalin who sent the Soviet armored and airborne divisions into Czechoslovakia in 1968. We know by their words, moreover, that Soviet leaders say that they see themselves engaged in a long-term competition with the West, that they seek to tilt the international "correlation of forces" in their favor, and that they continue to support and sponsor, "wars of national liberation." To describe the Soviet Union as a status quo power is to ignore their words and much of what has been taking place over the past 20 years.

No evidence is available that the Soviet leadership intend to launch a direct military attack on the West in the immediate future. Recent experience may underline the prudence and caution of that leadership -- despite an older and more flamboyant history of threats to Berlin and the deployment of missiles to Cuba. U.S. self-interest may demand that we try to resolve conflicts of interest with the USSR by peaceful means, to seek understandings and mutual cooperation where the opportunity arises, and seek to improve the prospects for international stability through sound arms control agreements. But at the same time, prudence requires that we take into account the other and darker face presented by the Soviet Union.

-- We must recognize that the Kremlin is not demonstrating restraint in the development of military capabilities.

-- We must recognize that Soviet capabilities indicate a tendency toward warfighting and damage-limiting rather than for the more modish Western models of deterrence through mutual vulnerability.

-- We must recognize the magnitude of the Soviet military effort and the momentum it has today as a result of their purposefulness over more than a decade.

-- And, logically, U.S. force planning must be based on a recognition of the size and scope of the Soviet military effort as it is, not as we would wish it to be, for it is those capabilities today and in the future which provide the Soviet Union with the options that we must face.

These, indeed, are the critical assumptions underlying the defense budget for FY 1978 and the Five-Year Defense Program. These assumptions fit the facts about the Soviet Union as we now know them.

B. The People's Republic of China

The future course of the PRC remains somewhat uncertain. The United States continues to seek more normal relations with that country. Despite hopeful prospects, we cannot wholly ignore the PRC for purposes of force planning. Sino-Soviet relations could improve. Peking is gradually developing an intercontinental and sea-based ballistic missile capability. We must take it into account in the design and deployment of our strategic nuclear posture, even though we may believe that its targets will not be in the United States.

Because our allies in Asia are necessarily sensitive to the regional power of the PRC, we cannot ignore the possibility that local conflicts of interest might bring about the danger of armed clashes and pressures on the United States to support our allies.

But the deepest concern must be reserved for the outcome of the rivalry between the PRC and the Soviet Union -- a rivalry with a continuing potential for violence, including even the possibility of nuclear exchanges. The United States has not encouraged or taken sides in this antagonism. But we cannot ignore the existence of the substantial military buildup that has occurred on the frontiers of the PRC, or the history of border clashes between the USSR and the PRC since 1969. The extent to which this situation should affect the defense posture of the United States, broadly defined, requires continuing review.

C. Other Foreign Military Capabilities

Other and lesser powers may choose to challenge the interests and allies of the United States. North Korea, Libya, and Cuba are only the most obviously bellicose of the candidates. Such challenges may become more dangerous in the period ahead.

We are already witnessing the proliferation of modern conventional weapons beyond the main industrialized nations. Regrettably, one cannot rule out a further diffusion of nuclear weapons. If both trends continue, what we have characterized in the past as minor contingencies may become

more substantial in scale, as recent conficts in the Middle East, including the war in Lebanon, have foreshadowed. The incidence of terrorism, possibly fostered by less responsible leaders of some nations, could also increase and terrorists could become more heavily armed with sophisticated weapons.

VI. THE CHALLENGES TO SECURITY

For purposes of force planning, it is necessary, although not sufficient, to know that there are threats to the security of the United States. Such threats must be understood and evaluated within a geographic context. The scope of the security problem facing us should not be underestimated, just as it should not be overestimated. We cannot expect to match all the capabilities of every conceivable adversary who might threaten U.S. interests in various parts of the world. In addition to identifying both U.S. interests and the potential threats to them, the force planner must indicate the kinds of challenges that might realistically be expected to arise. There is no shortage of such challenges.

A. Nuclear Challenges

First among these challenges -- and one that is accepted by almost all as requiring countermeasures for the indefinite future -- is a nuclear attack on the United States. Whatever the state of U.S. relations with the Soviet Union, and however much we may strive for progress toward strategic stability through arms control agreements, force planning must treat this challenge with the utmost seriousness.

The threat of a direct nuclear attack on the United States must have the first call on our attention and resources. But we must not forget that our closest allies face the same possibility. Since none of them have nuclear capabilities on the scale of the United States and the Soviet Union, U.S. force planning must take their situation into account. Nor can we ignore two other harsh facts:

-- the Soviet Union is modernizing and expanding its nuclear capability to a point where it could threaten and coerce its neighbors as well as the United States;

-- the PRC continues gradually to develop a medium-range nuclear capability which will bring all of Asia within its range.

Historically, these challenges have been taken into account in U.S. force planning. We must continue to do so.

B. U.S. Relations with the Soviet Union

The Soviet Union is and will remain for the foreseeable future the major threat to the United States and the international system on which we depend. While Soviet intentions and objectives are obviously not fully knowable outside of the Kremlin, Soviet military trends can be identified with some certainty:

1. Across the spectrum of capabilities from strategic nuclear to general purpose, the Soviets give evidence of moving toward a fundamental

shift in the "correlation of forces" that would give them peacetime and crisis leverage over the United States and its allies.

2. The emphasis in Soviet nuclear programs on quantitative superiority indicates concern for major warfighting potential, in contrast to the U.S. emphasis on deterrence and stability.

3. Increases in the overall size of Soviet forces in Eastern Europe -- together with increases in armor, armored fighting vehicles, and artillery -- and continued stress on force modernization indicate the continued priority of Europe in Soviet military planning. They may also reflect a change in operational concept toward capabilities for attack without major prior reinforcement.

4. The Soviets have built up forces capable of meeting Chinese threats and providing assurance of success at all levels of Chinese attack or provocation.

5. Military capabilities for power projection at long distances from the Soviet Union are being developed with the resulting ability to extend influence in areas such as sub-Saharan Africa, and to employ higher levels of aggressiveness in so doing.

(a) Increased Soviet naval capability can provide forward presence and a basis for contesting U.S. influence.

(b) Improvements in both airlift and merchant sealift now provide Soviet leaders with a long-range intervention capability.

(c) Availability of a willing proxy -- Cuba today, possibly others (such as North Korea and Vietnam) tomorrow -- offer the opportunity to avoid direct Soviet military involvement, thereby lowering the political cost of exercising influence. Concern for adverse Chinese reaction may limit Soviet use of Asian proxies.

The scope and vigor of the Soviet programs occurring at a time when the USSR has achieved a powerful deterrent as well as rough equivalence with the United States in strategic forces, raises the question of whether these programs can or will carry them to some form of strategic superiority over the United States. They trends lead to one judgment about the Soviet Union, and that is, in the main, their large and growing military capabilities with a growing offensive and warfighting orientation offer options to them which clearly are adverse to those who believe in freedom and self-determination, and particularly the United States.

As to the future, the USSR can be expected to continue certain patterns, including:

-- strengthening its already formidable nuclear and conventional military forces;

-- seeking to expand its influence by manipulating local tensions and conflicts, particularly in the Third World;

-- offering political support and various forms of military assistance to exploit opportunities to divide the Western alliance system;

-- seeking to neutralize Western military advantages in areas in which Soviet and Western policies are in contest;

-- pursuing arms control initiatives that will enhance their security, support their military and political objectives, and stabilize the military balance at levels favorable to the USSR.

Soviet policies toward the West, according to their own statements, remain predicated on the doctrine that the forces of history will result in the victory of Communism worldwide and that the appropriate Soviet role is to facilitate the process without endangering the Soviet state. Soviet leaders profess to believe that the balance is shifting in their favor in the world. At the same time, structural economic weakness represents a vulnerability for the USSR and has compelled the Soviets to look more to the West for food and technology.

The Soviet leadership has engaged in policies which can reasonably be described as relaxing tensions with the United States and Europe in areas which it believes provide, at present, the best opportunity for enhancing its own security, promoting its economic development, dealing with the problem of an unfriendly China on its eastern front, dividing the West and encouraging the spread of Soviet influence.

Soviet leaders seem to recognize that U.S.-Soviet relations are particularly sensitive to developments in Europe, and Soviet policy toward Western Europe has seemed to be designed to enhance Soviet influence without arousing alarm in the United States or among our European allies.

In Asia and elsewhere, a reality has been the Sino-Soviet dispute. Particularly difficult from the Soviet standpoint has been the improvement in U.S.-PRC relations. The Soviets would logically view any overt U.S.-PRC military collaboration as increasing the threat to them. Conversely, the U.S. position in Asia and elsewhere could be made considerably more difficult by any significant Sino-Soviet rapprochement. Despite the past intensity of the dispute, the Soviets have substantial incentives to seek such a rapprochement, as a method of enhancing their security in the Far East and easing their problems in the Communist movement.

To the extent that the past is a guide to the future, the Soviets are likely to regard the Third World as a primary arena for competition

both with the West and with China. The growth of their strategic and conventional forces will give them more room for maneuver in support of their clients and in attempting to intimidate neutrals and friends of the United States. The question is how far the Soviet leadership is prepared to go in exercising the options that its newly developed capabilities provide. Clearly, there are dangers in challenging the United States directly in such critical areas as Europe, the Middle East or Asia. However, despite an apparent desire, thus far, to minimize the risk of a direct military confrontation with the United States, they have not been willing to exercise notable restraint in all areas of the Third World. Their use of Cuban forces as surrogates in Angola introduced a disturbing new dimension to their methods of operations.

There seems little prospect for significant change in Soviet policies affecting U.S. security interests, even were there to be a change in Soviet leadership. Soviet military budgets seem likely to remain high and to increase in real terms. The options and opportunities that the resulting military capabilities will provide the USSR over the next few years will enhance its ability to counteract Western political-military capabilities and to exploit opportunities almost anywhere in the world.

In such a situation, U.S. security objectives toward the USSR should be to have sufficient military capabilities to:

-- deter a Soviet nuclear or conventional attack on the United States, its allies, and countries important to us, and to be capable of protecting their territorial and political integrity should deterrence fail;

-- deter and to offset the expansion of Soviet power and influence in areas important to the United States;

-- reduce areas of tension that risk U.S.-Soviet conflict, while improving mechanisms for maintaining stability and control should a crisis develop;

-- limit, and if possible reduce, Soviet-U.S. arms competition; and

-- encourage constructive Soviet collaboration on such international problems as arms control, nuclear proliferation, terrorism, and Law of the Sea that affect our mutual security interests.

American policy toward the USSR in support of these objectives has several distinct elements. They should include:

-- maintaining a strong national and collective allied defense that can discourage Soviet adventurism or if need be respond to efforts at coercion, either overt or tacit, on the part of the Soviets and their allies;

-- encouraging negotiation to settle outstanding differences and to reduce tensions;

-- pursuing arms control initiatives to enhance stability in the military balance and improve crisis control;

-- seeking, where appropriate, bilateral and multilateral agreements of mutual interest.

The emphasis given to any one of these elements of policy will vary with circumstances and the degree to which it is seen to be contributing to overall U.S. objectives.

C. U.S. Regional and Functional Security Interests and Objectives

While some U.S. security interests and objectives, particularly those concerned with strategic nuclear arms control, will be pursued in a bilateral U.S.-Soviet context, most will involve close interaction with U.S. allies and friendly governments. In the sections that follow, the nature of U.S. interests, objectives and policies are examined by region. There are, in addition, functional elements of U.S. security policy such as arms and technology transfer, arms control and non-proliferation that have foreign policy implications of global rather than specific regional nature. They are discussed throughout the chapter.

1. Europe

The fundamental U.S. security interest in Europe is to maintain Western European strength and deny the Soviets any ability to control or coerce Western Europe, either by military occupation, intimidation, or manipulation of domestic political or economic forces in Western European states.

Major U.S. security objectives in Europe include:

-- to maintain the military capability, conventional and nuclear, necessary for deterrence and the defense of Western Europe;

-- to promote the continued cohesion and development of NATO;

-- to encourage a major contribution to the NATO collective defense by the Western European states, and ensure that European and U.S. defense efforts are complementary and effective;

-- to encourage the continued growth of strong, popularly supported national states in Western Europe which, are collectively capable of resisting Soviet pressures, and prevent growth of Soviet or local communist influence;

-- to encourage political, economic, and security cooperation among Western European states and between them and the United States;

-- to seek to reduce tension in Europe that might lead to conflict, and encourage various negotiations which could enhance stability in the East-West military relationship with undimished security.

The overall U.S. security relationship to Europe will continue to be governed largely by NATO treaty obligations. In our European security policy, we must seek to balance the fundamental NATO relationship with the emergence of new areas of European cooperation in the defense field. A variety of proposals and efforts toward European defense cooperation were put forth or attempted in the 1950's and early 1960's. More recently, as our European allies have grown stronger, they have attempted some improvement in and coordination of their defense efforts. However, progress has been slow and the problems involved in developing effective regional defense arrangements remain formidable. The United States has adopted essentially an attitude of support toward such recent cooperative efforts. However, overall U.S. support for European integration has been predicated on the assumption that defense would and should continue to be handled within the NATO framework.

A European defense entity seems not to be a near-term prospect. But we have encouraged Western Europeans to explore possibilities of a greater degree of defense cooperation among themselves. In the long run it would be healthier for Europe and for the U.S. relationship with Europe if Western Europeans developed a stronger defense capability.

Given the importance of Central Europe to the defense of NATO, the Federal Republic of Germany is a principal geographic focus of NATO strategy. For many years the United States has had a close relationship with the Federal Republic in the military field, which reflects not only its critical geographic location but also the economic and military capabilities it can bring to bear on the task of defending Europe. The Germans, of course, see the U.S.-FRG relationship as a crucial guarantee of their security, bilaterally and in the alliance context.

France withdrew from the NATO military structure in 1966. However sensible the subsequent low-key but useful pattern of ad hoc French cooperation with NATO, it is highly desirable over the longer term that members who benefit from the alliance so directly make a full contribution to its strength.

Since the Defense Review of late 1974-early 1975, the British have undertaken additional budgetary reductions. By 1979-80, British forces will be virtually non-existent east of Suez (Hong Kong is an exception), British capabilities to deploy and reinforce in the Mediterranean will be vastly diminished, and Britain's overall quick reinforcement forces -- both manpower and transport capability -- will be dramatically cut back,

severely limiting Britain's ability to show force on either of NATO's flanks, or in the Middle East or Persian Gulf. Britain's formal contribution to the Central Front, for the present, continues undiminished.

Whether or not the Southern Flank continues to be politically unstable, the United States will want to work closely with its allies to ensure necessary cooperation in dealing with Middle East crises. It should now be clear to all NATO allies that events can and do occur outside of the NATO area which directly affect the nations of the Alliance. It is imperative that the divisions apparent in the October war of 1973 do not recur in any future crises.

Portugal is effectively firming up its ties to NATO. If political progress in Spain continues as it has over the past year, the prospects of its future membership in NATO would seem good. The United States must continue to support its eventual entry into the alliance. The question of possible Communist participation in some allied governments remains a serious problem. Only those seemingly willing to grant Communism moral parity with freedom can ignore the speed with which communist campaign promises can be and are reversed. Only those who ignore the impossible problem of having nations with whom we are engaged in a most intimate security relationship, involving the sharing of substantial national security information, can be unconverned with the evolving election pattern in some NATO nations. The fact is that in such an alliance, the inclusion of communists in the government of a member nation, over time, is incompatible with our security interests.

Both the aftermath of the 1974 Cyprus war and the recent "Cod War" between Iceland and the UK have underlined the difficulties of NATO, as an organization, assisting effectively in resolving conflicts among NATO's members. NATO's role in seeking to bring Greece and Turkey closer together may be limited largely to offering a forum for bilateral reconciliation, and the exercise of moral suasion and good offices. At the same time, NATO faces a number of problems and decisions that have their roots, directly or indirectly, in the Greek-Turkish relationship.

The difficulties concerning Greece and Turkey, however, do not alter their strategic importance. It is important for the defense of Europe, for NATO, and for the long-term interests of the two nations that both remain on the Western side and continue to participate in European defense.

On the northern flank, Norway's strategic position remains important both to the defense of Central Europe and to the balance of power in the Atlantic. There have been conflicting Soviet and Norwegian claims to the Arctic seabed, and a buildup of Soviet forces along this flank. Norway cannot meet the threat on its own.

2. East Asia

The fundamental U.S. security interest in East Asia is to ensure that the area will not be dominated by any country or combination of countries hostile to the United States. The elements which compose the Asian balance are multiple and fluid, reflecting the complex relations among the United States, the Soviet Union, China and Japan. The threats to the current stability are diverse -- ranging from the possibility of armed attack across an established frontier in Korea to adventures in Southeast Asia, supported in varying degrees by some of the Communist nations of Asia. The present situation, however, is not unfavorable: Sino-Soviet rivalry persists; Japan remains allied to the United States and threatening to no country; the non-Communist nations of Southeast Asia are developing a degree of national resilience and regional cohesion to the point where they may not be readily susceptible to outside manipulation. But the leadership adjustments in China, North-South tension in Korea, and the uncertain policies of Vietnam constitute uncertainties that could have a major -- yet unpredictable -- impact on East Asia. U.S. policy, including a strong military position in the Western Pacific and the maintenance of existing security commitments there, will be an important factor in preserving peace and stability in the area, although the future will also depend on a number of factors which are not directly under U.S. control.

Aside from its formidable military capabilities against China, the Soviet Union can pose a significant nuclear and a limited naval threat throughout the Pacific; the USSR also possesses a limited capability for combined conventional operations against Japan. The Soviet capacity to utilize force to promote political objectives in the area is currently severely limited by the continuing U.S. military presence in the area, by the Sino-Soviet dispute, and by its lack of political resonance among the non-Communist nations of East and Southeast Asia. The forward presence of U.S. conventional forces thus plays an important role as the source of psychological and political reassurance necessary to avert intimidation. The maintenance of Pacific-based strategic nuclear forces serves a similar function in providing evidence of the U.S. nuclear umbrella.

a. China

The United States has a basic security interest in building constructive political and economic ties with China, even as we continue to seek to lessen tensions with the USSR.

Basic U.S. security objectives in pursuit of these interests are:

-- to counter attempts by any single nation to dominate the Asian-Pacific area;

-- to implement the declared U.S. intent to normalize relations with the People's Republic of China, while protecting U.S. interests in a peaceful settlement of the problem of Taiwan;

-- to encourage Chinese cooperation in promoting stability in the area, including Korea and Southeast Asia; and

-- to maintain a military posture in the Pacific which will contribute to stability in the area over the longer term.

China has now entered the post-Mao era, and the present leadership in Peking has indicated that China's foreign policy will not change. The fundamental characteristics of Chinese foreign policy seem likely to persist, including a deep suspicion of the USSR that influences China's view of the U.S. role in the world. While China will probably continue to have a basic foreign policy objective of countering the threat from the USSR, some readjustments in their relationship, for example, a lessening of border tension, could take place. Such developments might or might not require adjustment in the U.S. posture. Yet in planning we must also hedge against the possibility of a future deterioration in U.S.-PRC relations, for differences persist between the U.S. and PRC outlook in policy and ideology.

b. Japan

The United States seeks to preserve and strengthen its partnership in all fields with Japan, our most important Asian ally. The U.S.-Japanese alliance is not only a central pillar of Japanese foreign policy, it is a crucial element in the stability achieved in Northeast Asia, and contributes significantly to the maintenance of peace and security in the region and worldwide. The alliance thus serves fundamental U.S. interests.

Despite the modest size of its existing defense forces, Japan's economic power and political influence make it a key factor in the East Asian political and security situation. In dealing with Japan in the security field, it is important that we display strength and steadiness, and that we act only with appropriate sensitivity to Japanese concerns.

In broad terms, United States security objectives vis-a-vis Japan are:

-- to ensure Japan's security against nuclear threats and to cooperate with Japan under the terms of the Mutual Security Treaty in defending against potential conventional threats. In fulfilling that

objective, the United States should continue to encourage Japan to improve the capabilities of its forces for the defense of its territory;

-- to encourage -- through close consultations -- compatibility and complementarity between U.S. and Japanese military forces and doctrines;

-- to avoid policies and actions which would undermine Japanese confidence in our bilateral relationship, and in general to demonstrate to Japan -- through consultation, a sensitivity to its concerns, and steadiness in our own policies -- U.S. strength and reliability, as an ally and a stabilizing force in East Asia.

c. Korea

The U.S. interests in Korea derive from our historic commitment to the independence and security of the Republic of Korea (ROK), its geographic location, the concern of the other major Asian powers over events there, and the fact that developments in Korea could significantly affect our relations with these powers. U.S. security objectives include the following:

-- to deter conflict in Korea, while seeking a political resolution of the Korean problem; and

-- to help the ROK to strengthen its deterrent through assistance to ROK development of its economic and military strength and self-reliance.

Our ability to pursue these objectives is constrained by a number of factors. North Korean intransigence and Sino-Soviet rivalry make a political settlement negotiated by the two Koreas unpromising.

In pursuit of these objectives we and the ROK have made clear to North Korea and the PRC our readiness to dissolve the UN Command provided North Korea gives reliable assurances that the existing Armistice Agreement will remain valid, or to replace the existing Armistice Agreement with mutually acceptable permanent arrangements to keep the peace and ease tensions in the Peninsula. The United States has also urged resumption of the South-North dialogue, expressed a readiness to open relations with North Korea if the Communist powers are prepared to take similar, reciprocal steps toward the ROK, and supported UN membership for both the ROK and North Korea on a provisional basis, pending progress toward unification.

The ROK, in pursuit of greater self sufficiency, has made notable economic and military progress, with U.S. support. It has emerged as a strong middle-level economic partner of the United States while assuming the main burden of its defense. U.S. military assistance to the ROK is now on a credit rather than grant basis, and the ROK has planned -- and

is financing with its own resources -- an extensive five-year military Force Improvement Program. The continued modernization of ROK forces should allow us the eventual option of a further reduction of U.S. forces in Korea. However, the appropriate level of our forces will continue to be a function of the nature and magnitude of the North Korean threat, the ability of the ROK to meet that threat, and the prevailing international situation.

3. Southeast Asia and Oceania

The United States continues to have formal defense relationships with the Philippines under the 1951 Mutual Defense Treaty and with Thailand through the 1954 Manila Pact. We have contributed to regional stability following the fall of South Vietnam by assisting friends and allies. Specifically, U.S. objectives are to:

-- encourage regional stability which will preserve the independence of countries friendly to the United States;

-- provide material support to allies and friends; and

-- maintain access for ourselves and our allies to vital lines of communication through the area.

Events in Southeast Asia are less likely than in the past two decades to have a major impact on the major power alignments. Except for China, whose capability to project military force outside its own borders remains limited, the area is remote from the major powers. The principal potential threat to stability comes from Vietnam, whose military power has grown and whose attitude toward its neighbors remains unclear. The other countries of the area, to one degree or another, are seeking to adjust their relations with one another, as well as with the major powers, in an effort to preserve their independence and security.

Those countries friendly to the United States acknowledge the value of a continuing presence of American forces on the periphery of Southeast Asia (e.g., in the Philippines) to lend substance to our contribution to the regional balance. The basic task is to relate U.S. political, economic and limited security assistance programs to the efforts of friendly regional states to build stable societies capable of withstanding internal security threats and to maintain essential base rights and facilities that make possible fulfillment of a responsible regional role.

U.S. air and naval bases in the Philippines are important in this respect. In addition to fulfilling a defensive mission for the Philippines,

they provide the capability to monitor and if necessary defend the lines of communication through the area. Moreover, facilities in the Philippines are the southern anchor of the U.S. forward military position in the western Pacific; as such they help reassure friends and remind adversaries of the U.S. determination to play a role in Asian security.

We have fundamental interests in preserving the military balance in the South Pacific, in supporting key relationships with Australia and New Zealand and in ensuring that Micronesia does not come under the domination or excessive influence of an outside power.

4. Middle East - North Africa

Fundamental U.S. interests in the Middle East include:

-- continuing progress toward a Middle East peace settlement;

-- uninterrupted access to Middle East oil and gas resources by the United States, and especially by Western Europe and Japan, at acceptable prices;

-- use of international waterways and airspace on a non-discriminatory basis; and

-- establishment of internationally recognized borders.

Major security objectives in the Middle East and North Africa include:

-- preventing the spread of Soviet or Soviet-supported radical influence in the area;

-- not permitting the military balance to become adverse to Israel, while encouraging progress toward an Arab-Israeli settlement;

-- continuing and expanding constructive relations with all Middle East states, including the major oil producing countries;

-- reducing potential causes of major power confrontation in the area; and

-- encouraging regional stability and promoting cooperation among the states of the area.

Several factors constrain the U.S. ability to protect these interests:

-- intra-regional tensions: the Arab-Israeli conflict and intra-Arab rivalries jeopardize U.S. interests, and offer the USSR opportunities for exploitation at U.S. expense;

-- the growth of Soviet military power: its presence in the region increases the possibility of confrontation between the superpowers; and

-- different perceptions between the United States and its major allies: occasional differences on how to protect common Middle East interests constrain U.S. freedom of action.

Security assistance and development of cooperative military relations between the United States and friendly states of the area, and among each other, will continue to make a contribution to the:

-- maintenance of regional military balances between contending states create a situation of mutual deterrence;

-- development of reliable friendly forces (for example, Iran, Saudi Arabia, Morocco) capable of contributing to regional order and deterring or combating outside intervention.

Given the reality of the local arms competition and, given that the United States is certainly not the only arms supplier, the intensity and character of the competition is not subject to U.S. control as such. The Soviets, other Western countries and even Third World countries are sources of arms for the contending states. In addition, certain countries have a greater indigenous military production capability than others. These are obstacles to cooperation in controlling the overall flow of arms to the area. It will continue to be important, therefore, to encourage forms of regional cooperation in political, economic and military affairs that will reduce local tensions and contain any expansionary ambitions.

5. Latin America

U.S. interests in Latin America are both political and economic although there are important strategic interests with respect to lines of communication, particularly for oil, and access to critical mineral resources. There are few contingencies, however, that might impose a substantial requirement for U.S. forces.

U.S. security objectives in these areas include:

-- monitoring, and if necessary defending, certain key lines of communication, such as in the Caribbean and the Panama Canal;

-- deterring, and if necessary blocking, intervention by nations hostile to us in countries important to our security or where such intervention would be seen as affecting the major power balance; and

-- supporting allies and countries friendly to the United States to encourage stability through regional balances.

The United States has important interests in these areas. We can anticipate continuing Soviet attempts to expand its influence in Latin America. However, these countries, because of their complexity, diversity and nationalistic sentiment, have not been easily manipulated.

This is not to say that threats to U.S. security might not arise in Latin America. The future status and security of the Panama Canal, Cuba's potential for subversion and intervention, and the persistence of possibly troublesome regional rivalries are serious problems.

The roles for U.S. forces in these areas could include monitoring and, if necessary, defense of key lines of communication, reassurance to U.S. friends, and deterrence of hostile intervention in areas we deem important.

6. South Asia - Africa

As in the case of Latin America, U.S. interests in South Asia and Africa are primarily political and economic, with strategic interests limited to lines of communication (LOC).

U.S. security objectives in South Asia and Africa include:

-- monitoring and, if necessary, defending key LOC; and

-- supporting friendly countries by diplomatic and economic means to encourage stability and to assist them in being less susceptible to Soviet or other influences hostile to Western interests.

The immense social and economic problems of these areas will continue to create conditions of local disorder and tension, which will be both disruptive in themselves and may offer opportunities for exploitation by the Soviet Union or other countries hostile to the United States.

VII. THE ROLE OF THE UNITED STATES

The size and composition of the U.S. defense posture depends to an important degree on the role the United States may wish to play in contributing to international peace and stability.

A. The Problem of Vulnerability

That Americans have been forced to play an active and leading part in international affairs does not come from a lust for profits or world domination. Nor has it been an accident or an aberration. The role has been inescapable in part because the United States itself has become increasingly vulnerable to direct attack by intercontinental and sea-based ballistic missiles. This new vulnerability has led to the conclusion that the United States must be concerned about the outside world, if for no other reason than to minimize conflicts of interest with the Soviet Union and discourage the proliferation of nuclear weapons, which could increase still further our potential vulnerability.

B. The Problem of Power

Another reason for the U.S. role is the power potential of the United States -- so much the product of the energy, imagination, and freedom of its citizens, the richness of its resources, its continental size, and the dynamism of its market economy. Such power acts as a magnet on those who wish us ill as well as on those who seek support and protection. As the years immediately preceding our involvement in the last two world wars demonstrated, this magnetic attraction, among other factors, made it impossible for us to stay aloof from what had begun as the quarrels of others.

C. The Problem of Interdependence

Since those days, U.S. involvement with the rest of the world has become even more intimate. By any measure, our external interests are larger and growing. Interdependence has become something more than a slogan, even though the United States continues to remain relatively more self-sufficient than most other nations. This interdependence is heightened by those who, with close ties to other countries, expect the United States to interest itself in the circumstances of the homelands they have left (as in the dispute between Greece and Turkey over Cyprus) and to protect them individually in their many overseas enterprises.

D. The Problem of Superpower Status

There is the further fact that the United States, by reason of its energy and accomplishments, belongs to an exclusive group. It is one of only two military superpowers. The Soviet Union, with a GNP much smaller

than that of the United States, a weaker technological base, and an inefficient civil economy, has lifted itself to this status by dint of large allocations of resources to its military and the imposition of sacrifices on its citizens. As a consequence, it has become a formidable power. If the United States were to retire from the world stage, or decide to play only a minor role, there would be no counterbalance to the USSR. Few would suggest that given the magnitude of Soviet power -- and the absence of the United States as a counterweight -- the Soviet Union would long be restrained from expanding its influence. Western Europe and the Far East would be susceptible to domination. The world-wide effects of a U.S. retreat would be politically, economically, militarily, and psychologically disastrous.

E. The Weakening of the Old Order

If such a forecast seems to place an undue burden on the United States and exaggerate its responsibility for world order, we must remember how much has changed since World War II. Our friends in Europe, while vital to the United States and contributing in essential ways to collective security, are no longer playing the parts on the world scene to which they and we had become accustomed for so long. Understandably, their old empires are gone, and with their breakup has vanished what authority and order they imposed on large parts of the world. The imperial policemen have left their beats and the increased disorder, now so evident, is one legacy of their departure.

Only forty years ago, the idea that Great Britain, France, and Germany combined could not contain the Soviet Union would have seemed ludicrous. Now, no one believes that they can. Furthermore, in the absence of a strong united Europe, the United States has lost the luxury of time in which to mobilize its forces, adapt its industry to war production, learn from the mistakes of others, and support others in conflict as the great arsenal and reinforcement of freedom and self-determination.

F. Leadership

History has now cast the United States in a role of world leadership -- a role which requires military power to accompany justice -- a role which requires large, ready forces and places the United States in the frontline rather than in the rear of freedom's defense. The emblem of the American eagle, with an olive branch in one talon and a sheaf of arrows in the other, has become fully symbolic of our role.

To have history push us center stage does not mean we are left without choices. For thirty years, however, we have assumed in our planning, and we continue to assume, that the United States will not shrink from world leadership. There are a number of reasons for this

assumption. Historically, we have found that a relatively passive role not only left the initiative in the hands of others, but also resulted in losses which later had to be recovered at a tragic cost in lives and treasure. In today's world, a passive role would imply that initiatives taken by others could not be harmful. Yet there is no evidence to show that if we fail to protect our interests, others could or would do it for us.

It was argued before Pearl Harbor that if only the United States stood on the sidelines, Hitler and Stalin would eventually destroy one another, after which we could help our friends in Europe to pick up the pieces. However, the nation did not believe we could take the risk of leaving to others the settlement of a conflict so decisive to the future of western civilization. Ultimately, the decision was made to play an active role in both war and peace, to help shape events in directions favorable to the United States, even though the costs of doing so would prove great.

C. The Risks of Retrenchment

Despite this, we still hear echoes of the old plea for passivity in the assertion that if only we would exercise restraint, the Soviets would reciprocate and follow suit. Unfortunately, the evidence on Soviet behavior points in the opposite direction. The reality is that the interests of the United States stretch beyond our shores, and a reduction of our commitments while maintaining equal security and well-being would lead to significantly higher, not lower, defense costs.

In the present situation, there is no serious way to maintain U.S. security at diminishing cost. To be sure, we could redefine major U.S. security commitments, reduce the U.S. defense perimeter accordingly, and turn our back on some of the larger contingencies that now concern us. But the burden of proof for the safety of such a retrenchment must lie with its proponents. Certain questions in particular would require answers:

-- Do they believe (and if so, on what grounds) that a major reduction in U.S. commitments would in any way lessen the U.S. need for strategic nuclear forces?

-- Do they believe that the vacuum caused by a U.S. withdrawal from its obligations in Europe, the Middle East, or the Western Pacific would or could be filled adequately by our former allies in default of superpower backing and support?

-- Do they believe that the prospects for nuclear proliferation would be reduced by a lessening of our relationship with South Korea, the Republic of China, the Philippines, and Iran?

-- Do they believe that the Soviet Union is so benign and modest in its interests that it would not be tempted at some point to fill the vacuum we would have created, with subsequent and adverse effects on international stability?

-- Do they believe that a momentum would not be created, with the effect of reducing the national security of the United States, unless U.S. defense costs were raised considerably higher than they are now?

-- Do they really believe that the world is so divided into watertight compartments, that the loss of one or two major compartments would have no consequences for the others?

For those who fear that world commitments and the defense posture necessary to our security could tempt U.S. leaders to play the world's policeman, a moment with the realities of history should be somewhat reassuring. First, we have never aspired to that role. Second, history suggests that our part in the dramas of the past has been limited, despite the pleas of friends and the challenges of foes. Yes, in some instances, we have tried to provide a measure of leadership; we have tried to assist in replacing the old imperial order with a more democratic system of international politics; we have tried in a number of instances to create a measure of order and stability. Above all, we have tried to contribute to the process of collective security in a volatile and divided world. We have had a measure of success. I know of no choice but to continue that effort.

VIII. OTHER CONSIDERATIONS

A. The Role of Allies

In the design of U.S. nuclear forces, we assume that any missions assigned to these forces must be accomplished without external assistance other than from overseas bases, communications, and intelligence facilities. To say this, however, is not to suggest that we lack interest in the closest possible coordination with the British and French nuclear forces. We seek such cooperation at all times.

Our approach is different in the design of our non-nuclear general purpose forces. For certain major contingencies, such as an attack on Western Europe by the Warsaw Pact, we assume that our NATO partners will meet their commitments and that, at a minimum, the forces pledged to the alliance will become available as scheduled. This assumption materially reduces the need for U.S. general purpose forces, although we have to recognize that other non-NATO contingencies might arise in which we could count only on U.S. forces for the necessary response. We need only recollect the obstacles the United States encountered in its effort to resupply Israel during the Middle East war of 1973 to realize that our major interests and our major regional allies' view of their interests sometimes diverge.

B. Arms Control

One of our primary objectives in arms control negotiations is enhanced security through increased stability, preferably at reduced force levels. We prefer a world in which neither superpower has any incentive either to attack the other or to strive for a long-term military advantage. At the same time, we seek to reduce uncertainty about the future and ease where possible the pressure for growth in the costs of defense. If security through stability can be achieved by means of agreements for equitable force reductions, we, of course, support such agreements.

1. SALT

We must, however, be realistic. So far, arms control successes have been modest. The ABM Treaty of 1972, with its subsequent modification, has somewhat forestalled greater expenditure on the deployment of ABM systems, reduced uncertainty about the need to counter these defenses, and perhaps constrained the competition in this area. Conceivably, it has contributed to stability as well, although that is less certain.

The Interim Offensive Agreement, which expires in October 1977, placed a ceiling on the number of U.S. and Soviet ICBMs and SLBMs and thereby reduced one element of uncertainty, during its life. But it has not lessened the Soviet determination to acquire new strategic offensive systems and has not appreciably increased stability. The Vladivostok Understanding of 1974 would represent an improvement over the Interim Offensive Agreement. But, as yet, it is not clear whether or when a new treaty which is in the U.S. security interest, will emerge from the negotiating process.

2. Other Negotiations

The complex multinational negotiations for Mutual and Balanced Force Reductions in Central Europe (MBFR), with objectives as laudable as those of SALT, have yet to realize specific results. In MBFR the United States and the participating NATO allies are negotiating with the Soviet Union and its Warsaw Pact allies to reduce as well as limit forces in Central Europe. Although these negotiations have been in progress for more than three years and NATO has demonstrated its seriousness with significant proposals, the Warsaw Pact nations continue to oppose parity of outcome in the form of a common collective ceiling on active-duty military manpower. As the MBFR negotiations continue, they serve as a significant example of the solidarity of the Atlantic Alliance and its ability to coordinate policy on far reaching and complex issues.

Within the last year the United States has successfully negotiated other agreements, including the Peaceful Nuclear Explosion Treaty, the Threshold Test Ban Treaty, and the Environmental Modification Treaty, which has just been opened for signature, and would prohibit "engaging in military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effect." Some ongoing negotiations, such as on the International Humanitarian Law in Armed Conflict, are also in progress, and there have been preliminary consultations or technical discussion with other states about possible future arms control efforts, including chemical weapons, and radiological weapons. Although recent arms control measures have to some extent imposed restraints, and may help to slow the competitive interaction, it would be an exaggeration to claim that existing agreements have succeeded in these directions.

The United States has conducted and will continue to conduct, its defense planning strictly within the limits set by existing arms control treaties and agreements. We continue to hope that the Soviet Union will do the same. But we cannot afford to pretend that current accomplishments in controlling arms have materially lessened the problems and costs of prudent force planning or the need to apply ourselves to that planning with the utmost dedication.

C. The Requirements of Deterrence

A more decisive factor in shaping the defense posture is the concept of deterrence which underlies U.S. force planning. As has been frequently noted, deterrence is based on the assumption that if a potential aggressor is confronted with the threat of a sufficiently severe response, he will be likely to refrain from making his attack. The fundamental condition of deterrence, therefore, must be the actual military capability to implement the threat.

That much is obvious. But deterrence, as we have emphasized over the years, requires even more than an inventory of forces. The capability itself must be at least as ready as the threat, able to absorb even a surprise attack by the aggressor and still respond deliberately, able to penetrate defenses and reach its designated targets, and sufficiently powerful to do the required amount of damage to the target system.

Furthermore, the threatened penalty must be credible; if challenged, the United States, and, in certain cases, its allies, must have the evident resolve to commit the capability to the declared course of action. If these conditions are not met, there is a risk that an aggressor will choose either to ignore the threat because he considers it implausible, or to attack in the hope that he could eliminate our capability as a preliminary to proceeding with his plans.

Clearly, the U.S. posture depends heavily on the degree to which we meet these requirements of deterrence. If we were to decide that a declaratory policy need not coincide with action policy, if we believed that as a nation and a government we were superb at deception, or if we would not be disturbed at being caught out in our bluffs, we could conceivably move in one direction. We could try to create the facade of a defense capability, a military house of cards, accompany it with threats of mutual disaster, and hope against hope that the deterrent would never be tested. This is the direction seemingly urged by those who believe there is a distinction between deterrence and defense.

The other direction -- indeed the only sound direction -- requires that we design and maintain a defense posture which is credible against a wide range of challenges. This means that the posture must have a serious fighting capability that we ourselves believe is responsive and effective, and that the threats accompanying it do not frighten us more than they do the potential enemy. We have chosen to go in this latter direction with our defense posture, although in certain areas progress has been less than complete.

To arrive at a credible deterrent, whether nuclear or conventional, we must assume for purposes of planning that deterrence has somehow

failed, allow a hypothetical attack to take place, and then assess the effectiveness of various possible defense postures as they absorb and respond to the attack. If we can design a posture which can credibly perform its missions under these conditions, we believe we will have confidence in it, potential enemies will be reluctant to challenge it -- even in desperate circumstances -- and deterrence will thereby be reasonably assured.

D. Contingency Analyses

The tests selected as the basis for designing and assessing the adequacy of U.S. forces have a major impact on the size and character of the defense burden we must bear. It is essential, accordingly, to be as explicit as possible about methodology.

The many contingencies which could arise out of the troubled international environment provide an ample basis for designing the U.S. posture. But U.S. forces are not planned on the assumption that we alone, or the United States even with its allies, must be able to meet all possible and plausible contingencies simultaneously. Nor is it assumed, because selected contingencies have been used for the purposes of designing and testing the U.S. defense posture, that these are the only contingencies to which U.S. forces can or will be committed.

Contingency analysis is useful because it permits a reasonably realistic if aggregate method of determining U.S. force needs. It also provides a way of imposing a measure of control over the total size of the posture. It is not useful, and is not intended to be useful, as a forecast of where, when, or how the United States would or should use the resulting capabilities. Those decisions remain with the President and the Congress; they are not within the exclusive province of the Department of Defense. The functions of this Department are limited. They include:

-- providing the Commander-in-Chief and the Congress with forces adequate to the security of the United States;

-- advising how to achieve the nation's objectives most efficiently with the military means at our disposal;

-- operating the forces at his direction.

Discussions of contingency analysis must not be confused with these realities.

E. Strategic Concepts

If contingency analysis is to serve as a technique for arriving at and controlling force size and composition, not only must particular contingencies be selected for analysis; strategic concepts must be specified as well. Several considerations shape the choice of contingencies and concepts for use in force planning. The designated contingencies must entail serious but plausible threats in areas of major interest to the United States. They must involve a substantial but realistic commitment of capabilities by a prospective enemy. And they must be genuinely demanding in that the potential attacker has the initiative, is malevolent (rather than cooperative), and uses the maximum of his available capabilities in the most efficient way open to him. We could, of course, assume a more cooperative enemy who would lead to our strengths. But that is not what war and its deterrence are about. Persumably, a serious antagonist will do his best to prevail, and we have to allow for that possibility.

1. The Nuclear Contingencies

We must obviously look at a number of contingencies in the course of designing the U.S. defense posture because of variations in geography, distances, climate, and possible opponents. But for the purpose of translating military requirements into a specific force size and composition, we focus on a limited number of cases. In the design of U.S. strategic nuclear forces, three main contingencies are considered:

-- a surprise attack by the Soviet strategic offensive forces against U.S. retaliatory capabilities postured in their regular day-to-day alert status;

-- a surprise Soviet attack against what is called a U.S. generated alert posture -- that is, a posture which has more bombers on alert and SLBMs at sea because of a deteriorating international situation;

-- and what amounts to a sequential PRC-Soviet attack against a U.S. generated alert posture.

A number of other contingencies are also analyzed, not so much to derive the basic U.S. force structure as to determine whether the three base cases have demanded sufficient size and flexibility in that structure to deal with dangerous "off-design" possibilities.

2. The Conventional Contingencies

The contingencies to which the most attention is given in considering the design of the general purpose forces are also three in number:

-- an attack by the Warsaw Pact, starting at the conventional level, on the three main fronts of NATO;

-- an attack on South Korea by North Korean forces, which could be supported by the PRC or the USSR, or both;

-- and what in the past has been described as a lesser contingency such as might arise in the Caribbean or the Middle East, and initially involve U.S. but not Soviet forces. During the 1960s, a war at sea was also examined as a separate contingency. Today, however, maritime campaigns are treated as parts of the other contingencies.

Because the variety of non-nuclear contingencies is so great, it is particularly important to test our posture in a number of "off-design" cases. A conflict in the Persian Gulf is an example of a case, which could make demands on the U.S. posture not brought out by any of the base cases. Force planning must analyze the implications of this kind of sequencing, and possible Soviet reactions in the immediate area and elsewhere, so as to permit judgments about the insurance to maintain against its possible occurrence and demands.

It has long been recognized that if the U.S. defense posture were designed to deal simultaneously with all the contingencies that could occur around the world, the defense budget would rapidly absorb a much larger portion of the Gross National Product. If allied forces were not included in the calculation of requirements for general purpose forces, the demand would be greater still. Even when analysis is limited to a small number of cases for force planning purposes, and allies are taken into account where appropriate, the demands become substantial. In order to place a ceiling on these demands, and at the same time to make a rough statement of the risks run with the posture, a strategic concept is developed. In essence, it dictates the number of base or realistic contingencies for which the United States should be simultaneously prepared.

3. The Planning Concepts

Strategic nuclear force planning deals only with the case of a Soviet surprise attack on U.S. day-to-day alert forces. The assumption is that a U.S. posture configured to deter this contingency should be able to handle other nuclear contingencies (including a PRC attack), provided that we had received strategic warning and gone to a generated alert. Where general purpose forces are concerned, the U.S. posture is planned on the assumption that, in conjunction with our allies, we must be able to respond to one major contingency (with Europe and Korea as the two test cases) preceded by a minor contingency (such as a conflict in the Middle East not involving Soviet forces).

There are circumstances in which a strategic nuclear posture conservatively designed to absorb a massive surprise attack and strike back could fall below the planned level of effectiveness. A successful Soviet damage-limiting program could produce such a relative failure. Even a conservatively designed general purpose force posture based on the current strategic concept could be stretched to the breaking point if two major contingencies were to arise more or less simultaneously, as they did in World War II. In the past, the strategic concept required the capability (which included the high-priority reserves) to deal simultaneously with two major contingencies and one minor contingency. Since 1969, however, planning for force sizing has assumed that the Sino-Soviet split would preclude the need for the United States to be prepared at all times to fight a conventional two-front war on the ground.

Whether that assumption continues to be valid is an issue which deserves continuing review. Some slight modification in the concept has already, in practice, occurred. For the most part, active forces are relied upon for planning an initial defense. And it has been concluded that positions of deployed strength in both Europe and Northeast Asia should be maintained. Thus, even in the event of a war in Europe, the United States would attempt to hold a forward defense line in Asia anchored by our Pacific base system in Japan and elsewhere in the area.

A case can be made for going still further in this direction, even with a continuation of the Sino-Soviet split. The alternative of moving toward a less ambitious strategic concept is not as persuasive at this time. Modifications of the strategic concept, because of the force planning approach, could have an impact on the U.S. defense posture, as was demonstrated in 1969. But hardly anyone now denies that the United States should have the capability to resist an attack on Europe in conjunction with its allies. And the volatile state of the world, combined with the nature of U.S. interests, still make it prudent to have the capability to respond simultaneously to one other contingency of a smaller scale. Even U.S. overseas deployments are becoming increasingly difficult to modify in light of the need both for deterrent forces in place and for rapid-reaction capabilities in an emergency. In fact, one of the criticisms made of the U.S. reply to the Mayaguez seizure in 1975 was that we had not maintained sufficient quick-response forces deployable in the vicinity of Cambodia.

While strategic concepts can be changed, with implications for the U.S. posture and the risks we run in the world, the process should not be arbitrary. Those who believe that the current U.S. defense posture is excessively large or even counter-productive should demonstrate where and why they would change the assumptions underlying it. I do not see any basis for a reduction.

The selection of planning contingencies and the determination of strategic concepts permit the specific analysis of hypothetical campaigns and the derivation of the forces needed by the United States to maintain the conditions of national security. Two features of this approach deserve reiteration and re-emphasis.

-- First, although the process of force planning requires a simulation of military engagements, whether through field exercises or war games of various kinds, the purpose of the approach is to ensure the maintenance of peace through deterrence and stability.

-- Second, although quite specific contingencies are used as the basis for generating the U.S. defense posture, the resulting forces are not tied to these particular contingencies, except insofar as they are deployed to a particular theater or committed annually to an alliance. The fact that the European contingency dominates U.S. defense planning and generates the bulk of the general purpose force requirements does not mean that these forces can and should be used only in the defense of NATO. Once generated, they are available for commitment as the President and the Congress so direct. It is on this basis that the determination of detailed force requirements proceeds.

4. Future Planning

The current planning approach still does not come to grips adequately with an emerging nuclear problem. This year, as in the past, the Defense Report uses the terms strategic and theater to describe U.S. nuclear forces, and treats these forces as having separable roles in the arsenal of deterrence. However, there are several reasons why, in the future, we should be cautious of this nomenclature and consider all the nuclear forces as constituting a continuum of capabilities.

The first reason is that there is no clear distinction between strategic and theater (or tactical) nuclear forces. For some years, the Soviets have based variable-range ICBMs in their medium-range sites. Now, with the prospective deployment of the SS-X-20 missile and the deployment of the Backfire bomber, they have introduced a further element of ambiguity as to the range capabilities and missions of their various nuclear forces. The United States, for its part, has forward-deployed various systems capable of striking targets in the Soviet Union (carrier-based aircraft, for example).

The second reason is that aircraft and missiles designed to perform deep missions, and attack what used to be called strategic targets, may not necessarily have the decisive role in nuclear warfare currently attributed to them. The outcome of a nuclear conflict, as has been the case in more traditional warfare, could depend on an ability as much to hold or occupy territory as to destroy specific targets.

The third reason is a function of the first two. Important systems such as the SS-X-20 do not fall neatly into one or the other of the two current arms control categories of central or non-central systems. Yet they could play an important role in a nuclear conflict. If arms control negotiations are to reduce the probability of nuclear war over time, it seems likely that they must at some point, in some manner, take into account these "gray area" systems, regardless of where they are based or what targets they can attack.

Cruise missiles are particularly difficult to classify. They are applicable to many missions. They can be launched from aircraft, land launchers, ships and submarines -- with nuclear or conventional warheads -- in strategic, theater and antiship operations. The development program being pursued has focused on cruise missiles in the following categories:

-- air launched strategic nuclear;

-- land launched theater nuclear;

-- ship launched theater nuclear, and non-nuclear antiship;

-- submarine launched strategic and theater nuclear, and non-nuclear antiship.

Improved cruise missiles would be consistent with a mix of large-deck and smaller carriers in the 1990s. A broad spectrum of shallow and deep interdiction targets in a theater could be attacked by cruise missiles with several different launch modes. In the longer term, as terminal guidance systems are developed, many "strategic" targets could be attacked with conventionally armed cruise missiles. In the nearer future, a long-range air-launched cruise missile will constitute the most efficient way to maintain the utility of the B-52 force.

Cruise missiles may be tempting candidates for arms control, but because of their versatility and the verification issues they raise, considerable caution needs to be exercised in how they are treated within the framework of SALT.

Cruise missiles raise management issues as well. Precisely because of their versatility and efficiency, they cut across traditional mission boundaries and challenge familiar weapon systems. Central supervision of their development may be necessary both to realize their promise and to ensure the caution necessary in arms control discussions of the future.

The classifications of strategic, tactical, or antiship used in Section II of this Report will probably require change as cruise missile

technology evolves. Tomahawk is a case in point. It is being developed for several different roles. Current efforts are directed toward developing an antiship version of the missile with a conventional warhead and a land attack version with a nuclear warhead. Maritime platforms currently being planned for conventional Tomahawk deployment are attack submarines and some surface ships. The missile is also designed to be compatible with aircraft. Combatants would carry a mix of Harpoon and Tomahawk missiles, with Tomahawk providing greater lethality against major Soviet combatants and a longer range strike capability.

IX. STRATEGIC NUCLEAR FORCES

The first task in U.S. force planning is the design of the U.S. strategic nuclear posture. At this time and for the foreseeable future, only strategic nuclear forces, particularly those of the Soviet Union, can directly threaten the safety and the survival of the United States itself.

TABLE IX-1

U.S. AND USSR STRATEGIC FORCE LEVELS

	END FY 1976		END FY 1977	
	U.S.	USSR	U.S.	USSR
OFFENSIVE				
ICBM LAUNCHERS				
OPERATIONAL 1,2/	1054	1550	1054	1450
OTHERS	0	0	0	0
SLBM LAUNCHERS				
OPERATIONAL 1,2,3/	656	800	656	880
OTHERS	0	0	0	0
LONG-RANGE BOMBERS 4/				
OPERATIONAL 5/	418	187	418	212
OTHERS 6/	184	166	184 11/	153
FORCE LOADINGS 8/				
WEAPONS	8330	3270	8402	4110
DEFENSIVE 9/				
AIR DEFENSE				
SURVEILLANCE RADARS	59	6500	59	6970
INTERCEPTORS 10/	416	2590	341	2540
SAM LAUNCHERS 11/	-	9720	-	9650
ABM DEFENSE				
LAUNCHERS	-	64	-	64

1/ Includes on-line missile launchers as well as those in the final stages of construction, in overhaul, repair, conversion and modernization.

2/ Does not include test and training launchers, but, for the USSR, does include launchers at test ranges which are probably part of the operational force.

3/ Includes launchers on all nuclear-powered submarines and, for the Soviets, operational launchers for modern SLBMs on G-Class diesel submarines.

4/ The following long-range bombers are placed in this category: for the U.S.: B-52s, FB-111 and B-1; for the USSR: Bear, Bison, Backfire. FB-111 does not fit the SALT definition of strategic nuclear delivery vehicle

5/ Includes deployed, strike-configured, aircraft only.

6/ For the U.S., includes bombers for RDT&E and in reserve, mothballs and storage. For the USSR, includes all variants of Bear, Bison and Backfire (tankers, ASW, trainers, reconnaissance, etc.) wherever located.

7/ Represents the maximum number of aircraft assuming no cannibalization.

8/ Total force loadings reflect only those independently-targetable weapons associated with on-line ICBMs/SLBMs and UE aircraft. Weapons reserved for restrike and weapons on inactive status are not included.

9/ Excludes radars and launchers at test sites or outside CONUS.

10/ These numbers represent Total Active Inventory (TAI).

11/ These launchers accommodate about 12,000 SAM interceptors. Some of the launchers have multiple rails.

A. Their Functions

The U.S. strategic nuclear posture deters such attacks. But that is not its only function. Although both Great Britain and France maintain modest nuclear forces, only the strategic capabilities of the United States stand as a major bulwark against nuclear blackmail of and attacks on our allies.

It is fashionable, I realize, to assert that if only the two superpowers, and especially the United States, would set a good example and engage seriously in nuclear disarmament, other countries would be less tempted to acquire nuclear capabilities of their own. But this assertion is almost surely without foundation in fact. The motives of states which

aspire to nuclear status are invariably complex. It hardly seems plausible to believe that any significant reductions in U.S. nuclear forces, and the subsequent decrease in their nuclear protection for other countries, would discourage nuclear proliferation. Strong U.S. nuclear forces may not be a sufficient condition for nuclear restraint on the part of others, but they appear to be a necessary condition. Indeed, they may have a role to play in discouraging rash action by nations which acquire small nuclear forces. In this connection, only six nations have tested nuclear weapons at this tume, But there may already be as many as 20 nuclear aspirants, and the number could well rise to 40 by 1985.

An equally important function for the strategic nuclear forces is to provide the foundation on which U.S. and allied general purpose forces gain credibility. Consequently, even though they absorb no more than 20 percent of the total U.S. defense budget (when a share of indirect support costs is added), they require the most serious, continuing attention.

If the U.S. strategic foundation is not solid at all times, the rest of the defense structure we build -- and our entire system of collective security -- may collapse. If we fail to maintain a modernized strategic posture, the Soviets (who seize every occasion to modernize and improve their own) will certainly see the opportunities presented to them. They are already behaving in a manner which indicates their interest in more than deterrence as some have defined it in the West. We must expect them to continue in this vein. As the Central Intelligence Agency has pointed out:

> The Soviets are committed to the acquisition of "war-fighting capabilities," a decision which reflects a consensus on the need to assure the survival of the Soviet Union as a national entity in case deterrence fails. It also accords with a long-standing tenet of Soviet military doctrine that a nuclear war could be fought and won, and that counterforce capabilities should be emphasized in strategic forces. Mutual assured destruction as a desirable and lasting basis for a stable strategic nuclear relationship between superpowers has never been accepted in the USSR. But Soviet political and military leaders probably regard it as a reality which will be operative at least over the next decade.*

B. The Threat

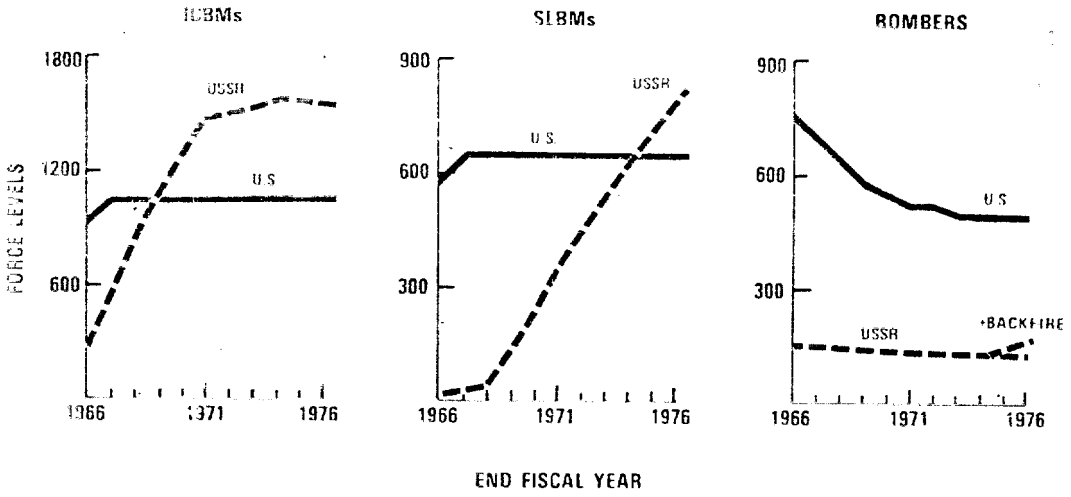
While this judgment may seem harsh, even unseemly in a period of negotiations, and contrary to much conventional wisdom, it is supported by a great many facts. To be sure, the Soviets started well behind the

* Hearings before the Subcommittee on Priorities and Economy in Government, Joint Economic Committee, Congress of the United States, Part 2, May 24 and June 15, 1976, p. 68.

United States in strategic capabilities, and with a much weaker technological and industrial base. For many years, therefore, it was possible to rationalize Soviet programs largely as reactions to earlier U.S. initiatives Now, however, the situation has quite a different appearance. Between 1965 and 1976 alone, the Soviets managed to increase their ICBM force from 224 to over 1,500 launchers, and their SLBM force from 29 to around 800 launchers. They also began to modernize their long-range bomber force.

CHART IX-1

CHANGES IN U.S./U.S.S.R. STRATEGIC FORCE LEVELS



As their offensive capability has increased, so has their inventory of deliverable weapons. Their strategic loadings (weapons which can be loaded on board strategic missiles and bombers) rose from 450 to about 3,300 warheads and bombs between 1965 and 1976, and there is every indication that the growth in deliverable weapons will continue at a rapid pace.

1. Current Deployments

In 1977, we already face a mature and sophisticated Soviet strategic nuclear capability. At the present time, the Soviets deploy fewer than 1,500 ICBMs, over 800 SLBMs, and over 200 long-range bombers, including those Backfire aircraft assigned to naval aviation and other aircraft rapidly convertible from tankers to bombers. They appear to believe, as we certainly do, that a diverse offensive force mix is important insurance to have and that investing in only one basing mode for missiles would

entail an unacceptable risk. However, to date, they have placed less emphasis on long-range bombers than we do.

As far as we can tell, the Soviets are building to the limits on missile launchers set by the Interim Offensive Agreement of 1972, with a deployment mix of about 1,400 ICBMs and 950 SLBMs. As their SLBM force has expanded well over the threshold of 740 launchers, they have been deactivating older SS-7 and SS-8 ICBM launchers. Of the 1,320 MIRVed launchers which a SALT II agreement based on Vladivostok would allow, the Soviets have deployed about 235 thus far.

It has been estimated that the Soviets could deploy as many as 3,300 launchers and bombers (excluding Backfire) by 1985 if they were not constrained by existing and proposed SALT agreements. There is evidence that they could, as an alternative, reload some silos after an initial launch.

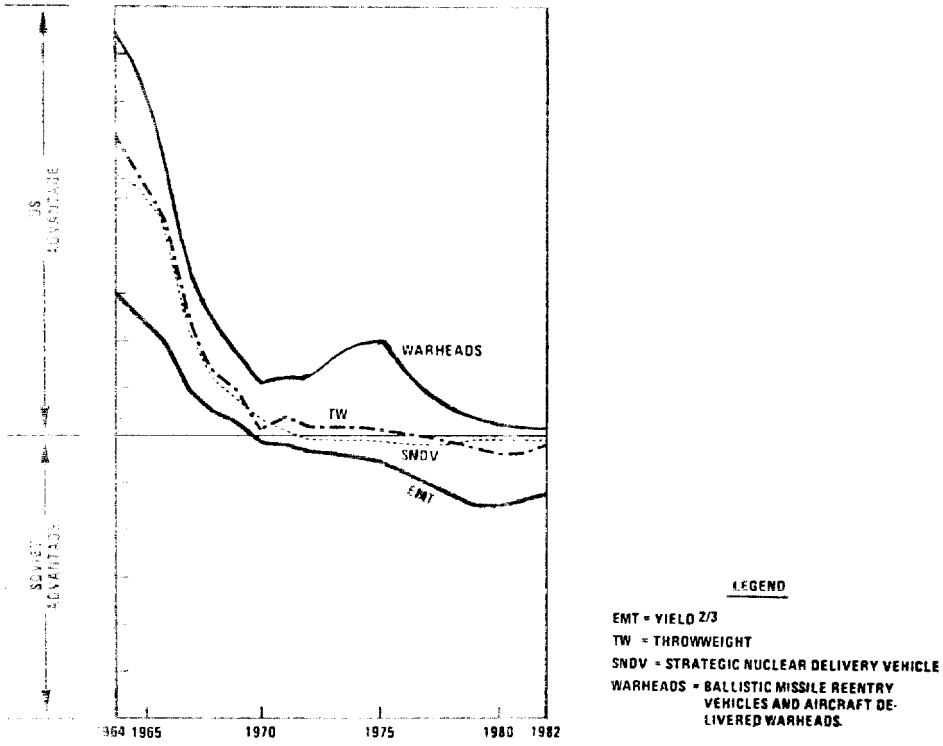
Soviet active strategic defenses remain about as they were reported a year ago. The Moscow ABM system consists of 64 launchers. Anti-bomber defenses are composed of about 9,700 surface-to-air (SAM) launchers and 2,600 PVO interceptors. Soviet command-control-communications (C^3) for both strategic offense and defense have been given increased sophistication and redundancy during the past year, and they appear to have the capacity to execute a flexible, war-fighting strategy. During the past year, we have gained a better appreciation of the extent of the ongoing Soviet civil defense effort. The program, which is under military direction, provides varying degrees of protection for leaders, the general population, and industry.

2. Force Improvements

The overall Soviet strategic posture is already impressive in terms of numbers, throw-weight, and equivalent megatonnage. Even more impressive is the generally successful effort to improve the quality of the posture within the limits of various SALT agreements and understandings. In short, we are witnessing a significant upgrading of Soviet war-fighting capability in the current wave of modernization. A further wave, expected to follow this one by the end of the decade, could increase that capability still further.

CHART IX-2

US/USSR STRATEGIC FORCES ADVANTAGE



a. Intercontinental Ballistic Missiles (ICBMs)

The most striking evidence of the qualitative improvements arising out of the current wave of modernization comes from the Soviet ICBM force. The new SS-17, SS-18, and SS-19 missiles continue to be deployed in modified and upgraded silos at a rate of about 100 a year. We estimate that there are now about 40 SS-17s, 54 SS-18s, and around 140 SS-19s in the force. We believe that some of the modified silos have been hardened to resist at least 2,500 pounds per square inch over-pressure. Units of the SS-11, SS-17, and SS-19 ICBMs have been deployed underneath the umbrella of the Moscow ABM system. In addition to a MIRV configuration, the Soviets have developed high-yield, single warheads for the SS-17, the SS-18, and the SS-19. The SS-18 is currently being deployed in both single and MIRVed warhead modes.

When configured in its MIRVed mode, the SS-17 has 4 MIRVs, each with a yield of about 700 kilotons. The SS-19 can carry 6 MIRVs with yields estimated at one megaton per MIRV. We now believe that the SS-18 can deploy as many as 8-10 MIRVs with yields estimated at between a half and one megaton per MIRV. The SS-18, carrying two types of MIRV, can probably use both types to attack a single target without causing fratricide. The

second, and blunter, type of MIRV will arrive on target about 10 seconds after the first and faster RV, but with a sacrifice in accuracy. It is becoming increasingly evident, moreover, that the SS-19 now could have an accuracy approaching that of the Minuteman III, and there are no intrinsic reasons why the SS-17 and SS-18 cannot have nearly the same CEPs (Circular Error, Probable). A major Soviet hard-target kill capability must therefore be anticipated in the near future.

We believe that the Soviets could deploy the SS-X-16 ICBM in a land-mobile mode as a successor or supplement to the SS-13. The payload of the SS-X-16 will probably consist of a single warhead with a CEP of about .25 nautical miles. As reported, a shorter-range version of the SS-X-16 ICBM system, the SS-X-20, is about to be deployed in southwest Russia and in the vicinity of the PRC as a replacement for the older SS-4 and SS-5 MRBMs and IRBMs. The SS-X-20 consists of the first two stages of the SS-X-16, has a demonstrated range of at least 2,200 nautical miles, and carries three MIRVs with a CEP of about .2 nautical miles. As far as we can now judge, the planned deployment of MIRVed SS-X-20 missiles could give the Soviets almost three times as many warheads as did the older MRBMs and IRBMs. There is also the possibility that the missile could be given a range equal to the SALT definition of ICBM range (5,500 kilometers or about 3,000 nautical miles) either by the addition of a third stage or by offloading MIRVs.

Even as these deployments and developments go forward, still another generation of at least two new ICBMs proceeds in research and development. We do not yet know the specific characteristics of these new missiles. But we anticipate that they will show still further improvements in accuracy and thus in hard-target kill capability. Testing of one or more of these missiles will probably begin later this year.

b. Submarine-launched Ballistic Missiles (SLBMs)

The Soviets have continued to modernize their SLBM force and are producing a significant improvement in the sea-based component of their Triad. Submarines are becoming only slightly quieter, but missile ranges are growing longer, and MIRVs are being developed for SLBMs. The Soviets have ended production of the Yankee class submarines in part, no doubt, because the boats would have to go on station within range of U.S. and allied ASW forces in order to cover targets in the United States.

The Delta I submarine, of which at least 15 have been launched, carries 12 SS-N-8 missiles, each with a range of at least 4,200 nautical miles. (A recent firing of the missile covered 4,900 n.m.) The Delta II submarine has ceased production after four units. It is nearly as large as the Trident submarine and carries 16 SS-N-8 missiles. Additional Delta production is continuing; the latest variant has been designated the Delta III. It will carry 16 of the new SS-NX-18 missile. The SS-N-6, Mod III, aboard the

Yankee submarines has three multiple re-entry vehicles (MRVs). The SS-N-8 missile currently has one warhead, with a yield of about one megaton. The present generation of SLBMs does not have a significant hard-target kill capability. But it is sufficiently accurate for use against bomber bases and other soft targets of high value. The SS-N-8 has the further advantage that it can cover major targets in the United States from launch-points as distant as the Barents Sea and the North Pacific. Such deployments, relatively close to home ports, allow more time on station (the equivalent of having additional SSBNs) and provide a degree of sanctuary from anti-submarine warfare (ASW) forces.

It should be emphasized that the SS-N-8 is about comparable in range to the full-payload range Trident I missile we plan to deploy in 1979. By that time, the Soviets may have begun deploying a submarine even larger than any of the Delta series. They have already tested two new SLBMs. One, the SS-NX-17, is a solid fuel missile with a large post-boost vehicle (PBV) and a single warhead. The other, designated the SS-NX-18 is a liquid fuel missile which, to date, has flown with two MIRVs. It is estimated to have a capability of carrying three RV's. In November 1976, the SS-NX-18 underwent a successful launch at sea. Its range is approximately 4,000 nautical miles. We now estimate that it will go into the new Delta III boats. It could also be installed in modified versions of existing submarines at some future time.

c. Long-range Bombers

The most significant change in the Soviet long-range bomber force has been the addition of the Backfire to the older Bisons and Bears. The Backfire has now been in service with Soviet Long-Range Aviation for about 30 months. Around 25 are deployed with the LRA, and total production (including aircraft for Naval Aviation) is currently running at a rate of about 2.5 a month. We continue to believe the Backfire has an inter-continental capability given certain flight profiles. Use of its inflight refueling capability would assure intercontinental ranges, and its performance is likely to be improved with time. Evidence exists that the Soviets are also working on a follow-on heavy bomber with greater range and payload to replace the aging Bears and Bisons.

d. Active Defenses

The Soviets have not yet remedied their vulnerability to relatively slow bombers penetrating their air defenses at low altitudes. However, they continue efforts to plug this gap, and they are expected to develop an AWACS-type aircraft and a look-down, shoot-down capability greater than that of the Flogger B in the 1980s.

More imminent is the renewed development of rapidly transportable, high-performance surface-to-air missile defense systems. One new system consists of a phased-array search and track radar and probably an

interceptor missile with a velocity almost comparable to that of our Sprint low-altitude ABM interceptor. This new system, which has been tentatively designated as the ABM-X-3, has a well-defined capability against both strategic and tactical aircraft and tactical missiles. The full system has not been tested in an ABM mode. However, it also appears to lend itself to the defense of both hard point and soft targets against ballistic missile attacks. If its components were stockpiled, the system could be deployed on relatively short notice. Deployment could begin as early as 1980.

In theorizing about strategic nuclear stability, some analysts have postulated that mutual vulnerability is a condition of stability -- in other words, if each side offered its vulnerable population and industry as hostages to the other, neither side would dare to attack. These same analysts saw acceptance by the Soviets of this premise in their signature of the ABM Treaty of 1972. It has become equally plausible to believe that the Soviets have never really agreed to this assumption, and that they entered the ABM Treaty either because of severe resource constraints or because they feared that, without an agreement, U.S. technology over the near term would give us a continuing and even growing advantage in this form of defense.

e. Passive Defenses

This hypothesis gains in plausibility when the spectrum of Soviet active and passive defense programs is considered. While U.S. R&D on ABM systems has slowed down, theirs has not. In the realm of civil defense, there were significant shifts in program emphasis in the late 1960s and early 1970s. The current Soviet civil defense program is broad in scope with preparations suggesting the following order of priority;

-- Assuring continuity of government and control by protecting the political and military leadership;

-- Providing for the continuity of important economic operations by hardening facilities, protecting personnel, protecting some food supplies, and other measures; and

-- Protecting nonessential personnel through sheltering or evacuation.

Available evidence suggests that all of these preparations are continuing and that the Soviets are following the above priorities. While the evidence is still coming in, and we cannot make firm judgments on either the magnitude or potential effectiveness of Soviet civil defense, the available information suggests a strong Soviet interest in damage limiting.

3. Conclusions

Two points should be made about these developments in Soviet offensive and defensive programs.

-- First, whatever the motives for past Soviet strategic expenditures, it should now be evident that the Soviets have taken the initiative in a wide range of programs, that restraint on our part (whatever its reason) has not been reciprocated -- and is not likely to be -- and that the behavior of the Soviets indicates an interest -- not in the more abstract and simplistic theories of deterrence -- but in developing their strategic nuclear posture into a serious war-fighting capability.

-- Second, while the Soviets may not persevere or succeed in this admittedly complex and difficult task, their growing capabilities must play a major role in U.S. force planning.

To underline this last point may seem trivial. But some believe that U.S. strategic nuclear forces are already insensitive to whatever the Soviets do with their offense and defense. In my judgment, few ideas could be more dangerous to the security of the United States or further from the actuality of the strategic situation. As Albert Wohlstetter wrote nearly twenty years ago, the balance is delicate, and the task of strategic nuclear deterrence is continuing and demanding. Not only should the design of the U.S. strategic posture be highly responsive to the threat; it must also reflect a number of other factors including the specific and changing conditions of modern deterrence.

C. Second-Strike Forces

It has been a longstanding policy of the United States to recognize, first, the peculiar ability of strategic nuclear offensive forces to deliver devastating and even decisive attacks with little or no warning, and second, the advantage that an attacker would gain if he could destroy the U.S. strategic forces. Accordingly, a major condition of nuclear deterrence is the maintenance of second-strike retaliatory capabilities -- that is, forces which can reliably wait until an enemy has attacked before striking back.

The reasons for this caution are worth remembering. Nuclear strikes have such unprecedented implications that they must never result from an accident, an unauthorized act, a misunderstanding, or a hasty conclusion that if they are not used, they will be lost. Under law, it is the responsibility of the President to decide when and how to use the nuclear forces of the United States. It is the responsibility of the Department of Defense, not to force his hand, but to ensure as far as possible that he can make this decision with deliberation and with the confidence that he knows the circumstance of the nuclear attack.

We take a number of measures to keep the probability of accidents and unauthorized acts extremely low. We also strive wherever possible to design U.S. forces so that, if necessary, they can actually absorb an enemy attack, rather than depend on warning for their survival, and strike back only after nuclear weapons have actually detonated. Until recently, ICBMs and SLBMs have been ideally suited to meet this design requirement: through a combination of mobility and concealment in the case of the SLBMs; through hardening in the case of the ICBMs. Since bombers are extremely soft and concentrated when on the ground, they cannot ride out an attack in the same way as ICBMs and SLBMs. We must keep some percentage of them in a high degree of alert, and depend on tactical warning to get the alert aircraft off their bases before incoming weapons arrive. Positive control measures then permit their recall after launch in the unlikely event that warning systems have given a false alarm, as is at least within the realm of possibility even with the advanced and complementary surveillance systems now available. In addition, we maintain the capability to keep a portion of the bomber force on continuous airborne alert if the need should arise.

The President can obviously commit any or all of these three forces to their missions with or without warning of an attack. But his option to avoid pre-emption or a "launch on warning" of ballistic missiles (which cannot be recalled) should be preserved by ensuring that he does not have to commit the forces until he is confident a nuclear attack is in fact under way. To design otherwise would be to undermine deterrence by creating unnecessary fears of a first-strike which, in turn, could lead to instability in a crisis and increased risks of a nuclear war.

D. The Triad

The most efficient way to preserve a responsive, controllable, retaliatory capability is by means of a mixed force of ICBMs, SLBMs and bombers -- namely the Triad. Maintenance of a second-strike Triad continues to be justifiable on a number of grounds. First, history shows that no system, however ingeniously designed, is ever entirely invulnerable for an indefinite period of time. For most measures, there tend to be countermeasures. And the countermeasures may show up with little advance warning, especially when one of the contestants operates in a closed society. Considering the fundamental importance of the tasks assigned to the U.S. strategic retaliatory forces, it is not unduly conservative to maintain three capabilities with differing characteristics, differing challenges to an opponent bent on countering them, and differing rates at which their vulnerability is likely to become critical. To take a less conservative approach is to risk precisely the instabilities which arise from claims of "bomber gaps" and "missile gaps." The Triad minimizes those risks because when vulnerabilities do begin to appear, they can be dealt with in an orderly fashion rather than with costly crash programs.

Another advantage of the Triad is that the three forces interact to promote the survivability of them all. While the survivability of the SLBMs does not depend directly on the ICBMs and bombers, the Soviets could concentrate much larger resources on countering ballistic missile submarines if they did not have to worry about the other two components. The ICBMs and bombers, on the other hand, interact strongly for their mutual benefit. A simultaneous attack against ICBMs and bombers through U.S. warning screens would enable the alert bombers to launch even if the ICBMs were withheld. An effort to slip under the warning screens and attack the bombers would give the ICBMs unambiguous evidence of the attack through the prior detonation of weapons on airfields. And any attempt to pin down the ICBMs while attacking the bombers would run into such delicate problems of communication and timing that it would risk triggering both forces.

The Triad also provides major insurance against systems failures. The bombers are a thoroughly tested part of the Triad because they have experienced actual combat and fly daily. However, ICBMs and SLBMs are only fired on non-operational trajectories. Although we seek operational realism in test launches of our ICBMs, we have never launched them from operational silos. On two occasions, the Department has been denied the funds and the permission to fire the Minuteman ICBMs in this mode -- a practice the Soviets follow with some regularity. As a consequence, confidence in the three components of the Triad is uneven, and the possibility that some portions of the force might not perform as expected cannot be overlooked. As far as can be judged, however, there is virtually no probability that all three components would fail catastrophically.

As long as the ABM Treaty is observed, the ICBMs and SLBMs surviving a Soviet first-strike should be reliable enough to reach and attack their targets. Bomber penetration is less certain, although the great majority of the bombers should reach their targets, and planned modernization of the force will preserve that confidence in the future.

A second-strike by such a mixed force, approaching enemy targets at differing speeds, trajectories, and azimuths of attack, not only would complicate the problem of the defense; it would also permit a particular target to be attacked with delivery systems and weapons of differing characteristics. Cross-targeting increases the probability that even after a highly effective enemy first-strike, and even after some system failures, targets of importance to the enemy would come under attack from at least one element of the Triad.

For all these reasons, I believe we must continue with a Triad of bombers, land-based missiles, and sea-based missiles.

The overall size and composition of the Triad must necessarily depend on a variety of factors. I should point out in this connection that the peacetime inventory of delivery systems, weapons, and megatonnage is only one datum, and by itself not the most important, in indicating whether and

in what ways U.S. forces need to be strengthened. What counts from the standpoint of force planning is how much of a given peacetime inventory would survive a first-strike, penetrate the enemy's defenses, and destroy a designated set of targets. It matters very little if we have an arsenal of 3,000 delivery systems, 8,500 warheads, and thousands of megatons if only a few of those systems could survive a surprise attack and reach their targets. In the perspective of the force planner, if 200 bombers need to reach their targets, attrition from defenses is estimated at 20 percent, and we maintain a peacetime alert-rate no higher than 50 percent, the inventory would have to consist of at least 500 bombers. Depending on the system, peacetime inventories must always exceed the number of attacking systems, especially in the design of a second-strike posture. In short, a premium must be paid for the safety and stability of an assured retaliatory force. Such a premium should not be mistaken for overkill.

E. Assured Retaliation

Force size and composition will also be sensitive to the types of missions this retaliatory capability must perform. It is on this score, in fact, that the most significant issues arise concerning U.S. strategic nuclear forces. Widespread agreement exists that, at a minimum, the U.S. second-strike capability should be able to execute the mission of assured retaliation as the prime condition of deterrence. But even here, arguments persist as to specific targets and the damage to be assured. According to one approach, planners could simply target major cities, assume that population and industry are strongly correlated with them, and measure effectiveness as a function of the number of people killed and cities destroyed. Thus, as one example, prompt Soviet fatalities of about 30 percent and 200 cities destroyed would constitute a level of retaliation sufficient to assure deterrence.

A different approach views assured retaliation as the effort to prevent or retard an enemy's military, political, and economic recovery from a nuclear exchange. Specific military forces and industries would be targeted. The effectiveness of the retaliation would be measured in two ways:

-- by the size and composition of the enemy's military capability surviving for postwar use;

-- by his ability to recover politically and economically from the exchange.

If the Soviet Union could emerge from such an exchange with superior military power, and could recuperate from the effects more rapidly than the United States, the U.S. capability for assured retaliation would be considered inadequate.

Both approaches can obviously be carried to absurd lengths. The point, however, is that whichever approach is taken, the number, yield, and accuracy of the weapons needed in the U.S. inventory will depend to an important degree on the level of damage required of the assured retaliation mission. The ability to destroy only 10 cities on a second-strike makes one kind of demand on the posture; the requirement to destroy 200 makes quite another.

The present planning objective of the Defense Department is clear. We believe that a substantial number of military forces and critical industries in the Soviet Union should be directly targeted and that an important objective of the assured retaliation mission should be to retard significantly the ability of the USSR to recover from a nuclear exchange and regain the status of a 20th-century military and industrial power more rapidly than the United States.

This objective has been set for a number of reasons. With the growth and diversification of the Soviet economy, and with continued Soviet efforts to disperse and protect vital industries, the practice of simply targeting the largest cities might no longer produce the effects previously assumed. More specific and precisely designated aiming points are needed, especially for the lower-yield weapons now in the U.S. strategic inventory. The number of targets must be substantial because low levels of damage would not necessarily deter a desperate leadership, whereas high levels of damage and a low probability of recuperation might do so. Where the assured retaliation mission is concerned, any prospective enemy must understand at all times that the United States has a second-strike capability which can do him, not significant or serious, but virtually irreparable damage as a modern nation and great power.

F. Options

For some, a second-strike capability for counter-city retaliation is the essential and sole condition of strategic nuclear deterrence. To go beyond this minimal capability, as they see it, is to invite trouble: further competition, arms race and crisis instability, an increased risk of nuclear war, and a decreased probability of progress toward arms control and disarmament. For the United States, however, the deterrence of nuclear war requires a different approach than is embodied in the concept of counter-city retaliation.

1. Soviet Capabilities

As previous Defense Reports have emphasized, the Soviet Union has now developed a strategic nuclear offensive capability of such size and diversity that a number of options must be taken into account. One could begin with an attack on the theater-based forces of the United States and its allies, after which the Soviets might seek to deter retaliation with their large strategic nuclear reserve capability. Second, a creeping attack on SSBNs

at sea, selected military facilities in a theater, or even silos in the continental United States itself, could be launched to demonstrate their resolve and to force the United States into major concessions. A third example would be an attempt to destroy U.S. bombers and ICBMs, disrupt our command-control-communications, and avoid major damage to U.S. cities and people, while at the same time holding in reserve a large follow-on capability targeted against other U.S. assets and available for successive waves of attack. Such a campaign would not necessarily disarm the United States, but it could leave us with only the forces and the plans for partial coverage of the enemy target system. With them, the United States might be able to cause heavy damage to the industrial base of the Soviet Union and even to its people. But the withheld Soviet force would be able to do equal or greater damage to an equivalent target system in the United States.

2. The Problem of Deterrence

The credibility of a deterrent based solely on the capability and doctrine of counter-city retaliation, however large or small the programmed response, is likely to be low in the face of such contingencies. The Soviets might be skeptical about the threat contained in such a posture, and inclined to test U.S. resolve to defend allies by these means. Even though we might delude ourselves about the credibility of the threat under normal peacetime conditions, we might find that we were more deterred by it than the Russians in a crisis.

These examples admittedly raise contingencies which, as far as can be judged, have a low probability of occurrence. However, we should not forget the risks that accompanied the Soviet deployment of missiles to Cuba in the autumn of 1962. And, even the surprise attack everyone agrees should be deterred tends to fall into this same category of low probability and high risk. Why then should the United States be any less concerned about equally rational and more limited attacks?

3. Options and Escalation

Less than full attack contingencies raise enormous uncertainties. We are totally lacking in any relevant experience of them. Yet we know that once nuclear weapons are used, calamity of an unprecedented nature will lurk in the wings. In these circumstances, even if the probability of nuclear escalation is high, it seems appropriate to have available for the President some options rather than only the full response of assured retaliation. Accordingly, the U.S. posture should include the ability both to implement some preplanned options and to improvise responses to events not anticipated in contingency planning.

4. Options and Hard Targets

It should be evident that once the possibility of some options is admitted, the range of targets becomes wide. Many targets important to a

society's economy and political system are separated to some degree from heavy concentrations of people. That tends also to be the case with a number of military targets, including general purpose as well as strategic nuclear facilities. To attack relatively soft targets, and to minimize collateral damage, relatively low-yield weapons with high accuracies are required. In previous years, because of these considerations, it has been U.S. policy to seek improved command and control, higher accuracy, and an increased variety of warhead yields in order to implement an effective range of options.

Last year I stated we would be making system improvements such as increased accuracy so as to ensure that any attack could be met by a deliberate and credible response. Certainly the need for more than a limited hard-target-kill capability was not foreseen. The costs of such a capability are substantial, in part because the phenomenon of fratricide limits the number of weapons that can be usefully applied to a hard target and therefore imposes heavy demands for accuracy, reliability, and command-control. A major effort to acquire a comprehensive hard-target-kill capability is likely to raise apprehensions about crisis and arms race stability.

The United States has continued to hope that the Soviets would have a similar outlook and comparable concerns. Today, however, it is much less certain that they see the wisdom of abstaining from comprehensive hard-target-kill capability. Not only have they failed to give serious consideration to U.S. proposals for reductions in throw-weight; they are actually in the process of increasing their own throw-weight by a substantial amount. In addition, they are making rapid improvements in the accuracy of their ICBMs, and they could have a reload capability for some of those ICBMs which can be cold-launched (that is, popped out of their silos prior to ignition), permitting reuse of the silos.

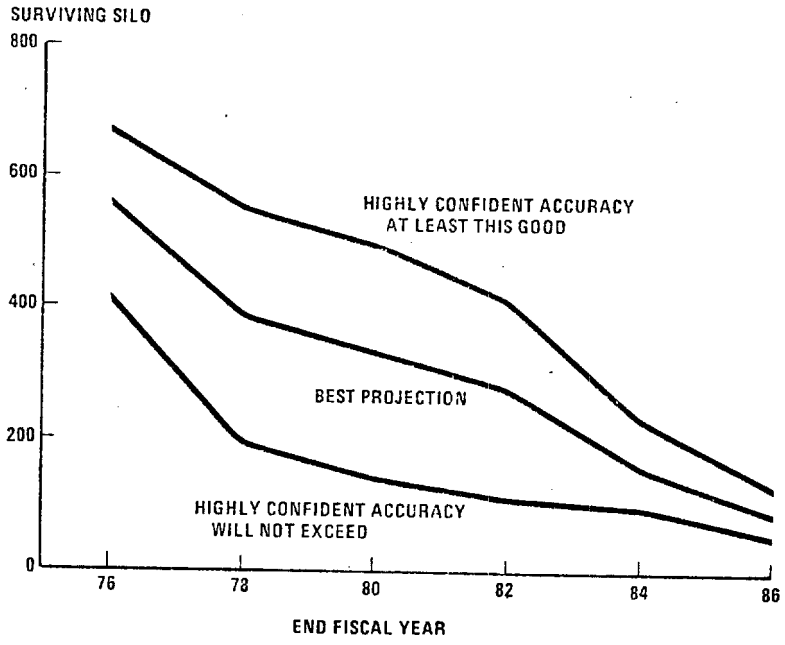
It is uncertain how rapidly these programs will come to fruition. But there is now an increasing probability that before the mid-1980s, the Soviets could have the capability, with a small fraction of their ICBMs, to destroy a substantial portion of the Minuteman/Titan force as well as non-alert bombers and submarines in port. This potential would in no way give the Soviets a disarming first-strike. But it could enable them to create a dangerous asymmetry. As previous Defense Reports have emphasized, much of the U.S. capability for deliberate, controlled, selective responses resides in the Minuteman force. If much of that force were eliminated, the Soviets would preserve their flexibility while that of the United States would be substantially reduced. The Kremlin would still have options; the choices open to a President would be limited.

This is not an acceptable prospect. It would be preferable to see the life of the fixed ICBM forces on both sides prolonged a good deal longer. Eventually, however, even with foreseeable arms control measures, improvements in accuracy combined with large throw-weights could make such systems unreliable as second-strike forces. But additional time in which to

negotiate and make deliberate decisions about reasonable substitutes would be valuable. That is the course the United States would still like to see both sides follow. But, we cannot permit the major degradation in the Triad that the growing Soviet capabilities threaten. And the United States must not permit the development of a major asymmetry in potential outcomes, with all the political and military hazards accompanying such a prospect.

CHART IX-3

SILO SURVIVABILITY
SENSITIVITY TO SOVIET ACCURACY



If the life of the fixed, hard ICBMs cannot be extended, then stability requires both sides to improve their land-based forces enough so they they are more difficult to target by the other side. The United States should not accept a strategic relationship in which we must bear the heavier costs of alternative basing while the Soviets are allowed the luxury of retaining their fixed ICBMs. Since high accuracies can be built into mobile as well as fixed systems, the Soviet leadership should be aware that if the United States moves toward mobility, the Soviets will have strong incentives to go mobile as well.

5. Options and First-Strike

The United States is not interested in creating a first-strike capability, acting provocatively, or threatening stability. The Congress will surely

recognize that it is the Soviet Union and not the United States which has taken the initiative in creating this prospect. Members will also notice that the same critics who oppose the necessary U.S. countermeasures argue that the strategic nuclear balance is stable, not delicate, and that major asymmetries do not matter. Perhaps critics can live with these inconsistencies. The United States cannot.

The U.S. position is straightforward and consistent. We do not believe either side can achieve a serious, high-confidence, disarming first-strike capability, and we do not seek to attain one. To that extent, the strategic nuclear balance can be said to be stable. But significant asymmetries in the outcome of a strategic nuclear exchange can be created, and these asymmetries could give -- and would be seen to have given -- a meaningful advantage to one side over the other. As long as so much of the U.S. capability for flexibility is invested in the ICBM force, and as long as some options continue to be desirable, such an asymmetry could arise if one side eliminated most of the other's ICBMs. The United States should not permit that eventuality to develop.

6. Options and Stability

This line of reasoning tends to be opposed only by those who, despite the evidence, cling to the view that there is only one condition of stability, namely mutual assured destruction; that the Soviets faithfully subscribe to that doctrine; and that the Kremlin will respond cooperatively to U.S. restraint. The same opponents contend that any options are provocative and increase the probability of nuclear war. More or less simultaneously, they assert that having options (and the limits on destruction implied by them) is infeasible because any nuclear exchange is bound to escalate to an all-out attack on cities, and because the collateral damage from nuclear detonations on military targets, especially hard targets, would make even a limited exchange indistinguishable from an all-out conflict. The conclusion from this reasoning is inexorable: the maintenance of options is both destabilizing and infeasible. Presumably, the prospective loss of the U.S. capability need be of no concern, while any threat to a comparable Soviet capability is provocative.

This is not a persuasive position. It depends upon assumptions about Soviet beliefs and behavior that are not borne out by the facts. It applies different standards of conduct to the United States than to the Soviet Union. And it is inconsistent. None of the allegations -- about the provocative and damaging consequences of options -- have any basis in experience. U.S. strategic plans have contained options for many years, yet no one has been provoked or tempted in a crisis. Indeed, to attach such importance to options, which are little different from other contingency plans, is to ignore how decisions about peace and war are made. Far more important than options in the choice of capabilities is the degree of U.S. conventional strength. If the nuclear threshold has been kept high, conventional responses will be given first priority in a crisis (at least

by the United States) regardless of whether nuclear options are available. Experience should make that evident.

7. Options and Collateral Damage

As for the argument that anything less than a full-scale response would be indistinguishable from direct attacks on population, data and analyses indicate the contrary. In every case considered, both the short-term and the longer-run collateral damage from attacks on a comprehensive list of military targets (including ICBM silos) has been dramatically lower than the fatalities from direct attacks on population targets. It must be emphasized, however, that the results, even in limited and controlled exchanges, could be appalling. They could involve the potential for millions of fatalities, even though the distinction between 10 million and 100 million fatalities is great and worth preserving. No U.S. decision-maker is likely to be tempted by this prospect, especially in view of the dangers of nuclear escalation.

It is no inconsistency to recognize those dangers and still see the desirability of having some options short of full retaliation. The other side is fully capable of inventing and considering options. And precisely because we are uncertain about the course and ultimate consequence of a nuclear exchange beginning with less than a full response, surely all would want to avoid bringing about a holocaust by U.S. actions and would want any President to have at least the option to respond in a deliberate and controlled fashion. Just as surely, if such were actually to be the U.S. response in the terrible event of an attack, it is a response that must be available for the purposes of deterrence. To depend on irrational behavior by the Soviets, and to depend equally on an irrational response by us, is to put nuclear deterrence in double jeopardy. The Soviets, by their activities, indicate that they are not interested in mutual assured destruction. Accordingly, they must be accepted for what they are, not for what we want them to be. Their actions indicate that they take nuclear war seriously; the United States must do no less. Part of taking it seriously is responses short of full-scale retaliation in our strategic nuclear capabilities. It is a condition of stable deterrence.

G. Equivalence

Satisfaction of the fundamental requirements of second-strike survivability, Triad insurance, assured retaliation, and options should ensure stable deterrence under most circumstances. These requirements, in fact, underlie the current U.S. strategic nuclear posture. There is, however, one other factor we must consider in our planning.

It is generally recognized that world stability depends to a remarkable extent on the strength of the U.S. strategic nuclear deterrent. Unfortunately, not everyone assesses the effectiveness of that deterrent in the same way. It is the subject of many and differing perceptions which, in turn, can

affect the behavior of prospective enemies, allies, neutrals, and attentive publics in the United States itself. If friends see the balance as favoring the Soviet Union rather than the United States, their independence and firmness may give way to adjustment, accommodation, and subordination. If potential enemies have a similar perception, they could misjudge the situation and make demands leading to confrontation, crisis, and unnecessary dangers. If domestic audiences see real or imaginary imbalances, they could insist on excessive and costly crash programs to restore the equilibrium. One has only to recall the reaction of Mao Tse-tung to the appearances of Soviet missile superiority after the Sputnik demonstrations, and the response in the United States to charges of a "missile gap," to recognize the impact of such perceptions on international affairs.

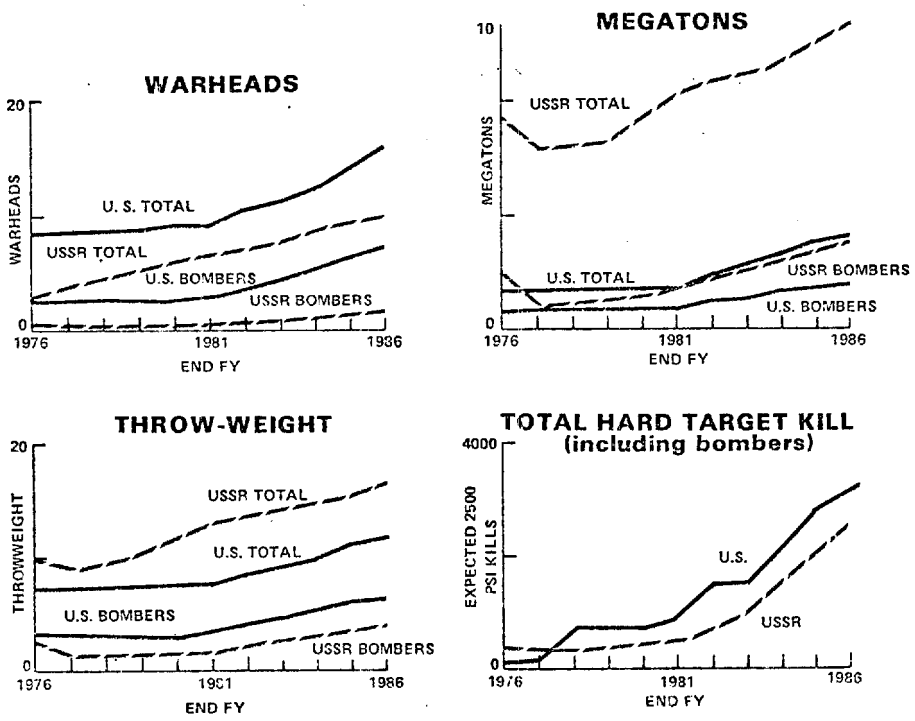
However much one might wish otherwise, popular and even some governmental perceptions of the strategic nuclear balance tend to be influenced less by detailed analyses than by such static indicators of relative nuclear strengths as launchers, warheads, megatonnage, accuracy, throw-weight and the like. If all or most of these indicators were to favor the Soviet Union, a number of observers might conclude that the United States was not equivalent to the USSR in strategic power and that the balance was now weighted in favor of the Soviet Union.

It is to be hoped that, in designing the U.S. strategic posture to meet the requirements of adequate and stable deterrence, the perception as well as the reality of a strong deterrent will be created. U.S. programs of research and development should be expected to be, and be seen to be, sufficient to offset the dynamism of the Soviet Union in this realm. But to the extent that rough equivalence is not credited to the United States in these two respects, actions to create the necessary perception of equivalence could be required.

At the present time, it is widely agreed that the United States is seen as having "rough equivalence" with the Soviet Union, even though, up to now, we have not added to our strategic posture for that purpose. The United States should also continue to stress the effectiveness of its strategic forces in the performance of their missions as the basis for judging their adequacy. But the Congress and common sense require that the United States not be inferior to the Soviet Union, and the Vladivostok Understanding postulates equality between the two sides in central offensive systems. Accordingly, U.S. plans and programs for future U.S. offensive capabilities must be geared to those of the USSR.

CHART IX-4

MEASURES OF THE STRATEGIC BALANCE
—ON-LINE FORCES—



H. Arms Control

Whatever the influence of rough equivalence on U.S. force planning, it is occasionally asserted these days that a powerful factor affecting the U.S. strategic posture is a distorted view of arms control held by the Defense Department. The allegation imputes to DoD an exploitation of every loophole in existing agreements to develop exotic and unnecessary weapons and drive the strategic force structure up rather than down. Arms control negotiations and agreements, at least in their present form, are alleged to be counterproductive in that they create demands for bargaining chips subsequently converted into legitimized weapons programs. Just as bad, by this theory, are the safeguards demanded by the Defense Department as the "price" for endorsement of pending arms control agreements, since they, too, allegedly can turn into entering wedges for further weapons developments.

Such charges might better be directed at the Soviet Union. Certainly they are wide of the mark when aimed at the United States. The idea of bargaining chips is not new; it was not invented in our lifetimes. For

example, in 1966, President Johnson began to use the ABM defense system as a negotiating counter. In fact, despite its cost, the ABM "chip" did not serve the United States badly. An ABM treaty would hardly have been signed without it. It should be remembered, moreover, that weapons can only be effective as bargaining chips if there is a serious need for the weapon system in the U.S. strategic inventory. To develop systems simply to throw them on the negotiating table would be folly. The Soviets would not pay anything to stop them. U.S. policy is to develop only those weapon systems for which there is a justifiable military need. Serious programs thus may become bargaining chips and be affected in their development and deployment by arms control considerations. What are seen merely as bargaining chips will not become serious programs, nor will they be effective bargaining chips.

It is worth recalling that the United States has been able to detect and investigate a number of questionable practices on the part of the Soviets since 1972. U.S. monitoring of agreements has been adequate so far. This reasonable level of confidence in national means of verification is likely to decline, however, to the extent that the Soviets attempt to conceal or disguise their programs, and if SALT negotiations attempt to control the more qualitative, as opposed to quanitative features of strategic arms. In these circumstances, it makes sense to take account of the possibilities for cheating, the possible failure of complex negotiations, or even the sudden abrogation of agreements, followed by a rapid Soviet deployment of systems previously banned or controlled.

Arms control considerations do have an impact on strategic force planning. The United States is committed to abide by existing and pending SALT agreements. Strategic stability is considered next to deterrence in force planning, and the United States has sought to preserve stability in the presence of highly dynamic technology. But it must be recognized that precisely because technology is dynamic, the contributions of arms control to stability may well be modest, and may be overtaken on occasion by events.

Even under more hospitable conditions than now exist, arms control negotiations and agreements could not be expected to substitute completely for unilateral force planning or remove all the uncertainties with which that planning is so centrally concerned. Given the attitudes of the USSR toward war-fighting and stability -- which differ from ours -- the results of arms control negotiations are bound to be limited. Accordingly, the United States must continue its efforts in SALT while supporting them with prudent unilateral planning to ensure the continuing credibility of the deterrent and the maintenance of stability.

f. Damage-Limiting

One of the main uncertainties at the present time is the extent to which the Soviets are developing a major damage-limiting capability. Since

the concept of damage-limiting has not received much attention for some time, it is useful to set out the range of damage-limiting strategies.

The most modest strategy attempts to limit the damage from attacks directed against military and other targets not directly associated with population. It does so primarily through fallout shelters and the evacuation of people from exposed target-areas. The most ambitious strategy dictates a first-strike capability against an enemy's strategic offensive forces which seeks to destroy as much of his megatonnage as possible before it can be brought into play. An enemy's residual retaliation, assumed to be directed against urban-industrial targets, would be blunted still further by a combination of active and passive defenses, including ASW, ABMs, anti-bomber defenses, civil defense, stockpiles of food and other essentials, and even the dispersal and hardening of essential industry.

Most damage-limiting strategies represent an effort by one belligerent to maximize damage to his enemy and minimize it to himself. The assumption behind such strategies is that, if major asymmetries in damage can be achieved, one side (the "winner") will survive as a functioning nation while the other will not. Thus, the outcome of damage-limiting campaigns can in some sense be measured in terms of the ability of the two belligerents to recuperate from such barbaric attacks. However, the techniques currently used to assess the post-attack powers of recuperation of the two sides are analytically weak and plagued with uncertainties. Key decision-makers, in any event, are not likely to be very interested in the possibility that the Soviet Union could restore its prewar Gross National Product in 10 years, while it would take the United States twice as long to achieve the same result.

The most modest approach to damage-limiting would not attempt to protect urban-industrial targets from direct attacks. Consequently, it would not seriously jeopardize an opponent's capability for assured retaliation. The most ambitious approach, with its emphasis on active and passive defenses for both population and industry, would obviously try to minimize the effects of assured retaliation. In the United States, such a strategy has been seen, therefore, as a major stimulus to the strategic arms competition and a guarantee of instability.

The United States has never gone very far down the road of damage-limiting. Opposition to that strategy has been sharp, and there have been other reasons for stopping short in such an endeavor. The problems of eliminating any enemy's entire strategic nuclear force by offensive means have grown increasingly difficult with the years, and further investments toward that end have always shown rapidly diminishing returns to scale. Moreover, once SALT limited ABM deployments to one site, little seemed feasible against the large, early-warning Soviet missile force, and little worth doing against the small, late-arriving Soviet bomber force. Emphasis therefore shifted from the elaborate dedicated

continental air defenses popular in the 1950s to early warning, surveillance and peacetime control of American airspace, and development of a mobile, fighter-defense force based on AWACS. The advantage of the mobile force is that, while it is intended primarily for defense of a theater overseas, it would be based in the United States and could be committed to continental air defense in an emergency. With the emergence of the Soviet Backfire the continued development of this dual-purpose force seems particularly appropriate.

With the emphasis on active defenses substantially reduced, it was considered almost pointless to advocate a major program of passive defenses centered on blast shelters. Only a modest fallout shelter program has been provided as what amounts to a hedge against limited attacks on military and non-collocated economic targets -- attacks which would not be directed at major urban-industrial centers but which could produce serious short-term fallout effects on nearby concentrations of people.

In sum, U.S. policy for some years has been to avoid the development of large first-strike forces and major damage-limiting capabilities through active and passive defenses. Restraint in both areas, it was hoped, would demonstrate to the Soviets that the United States did not intend to threaten their capability for assured destruction, and that, accordingly, their basic security was not endangered by the U.S. deterrent posture. But such restraint cannot long be unilateral; it must be reciprocated. Any effort by the Soviets to erode the U.S. capability for assured retaliation by means of major damage-limiting measures must lead to adjustments on our part to maintain a credible deterrent.

J. Requirements

It is with all these factors, assumptions, and objectives in mind that, over the years, the United States has adopted a strategy of flexible nuclear response and arrived at a strategic nuclear posture consisting of:

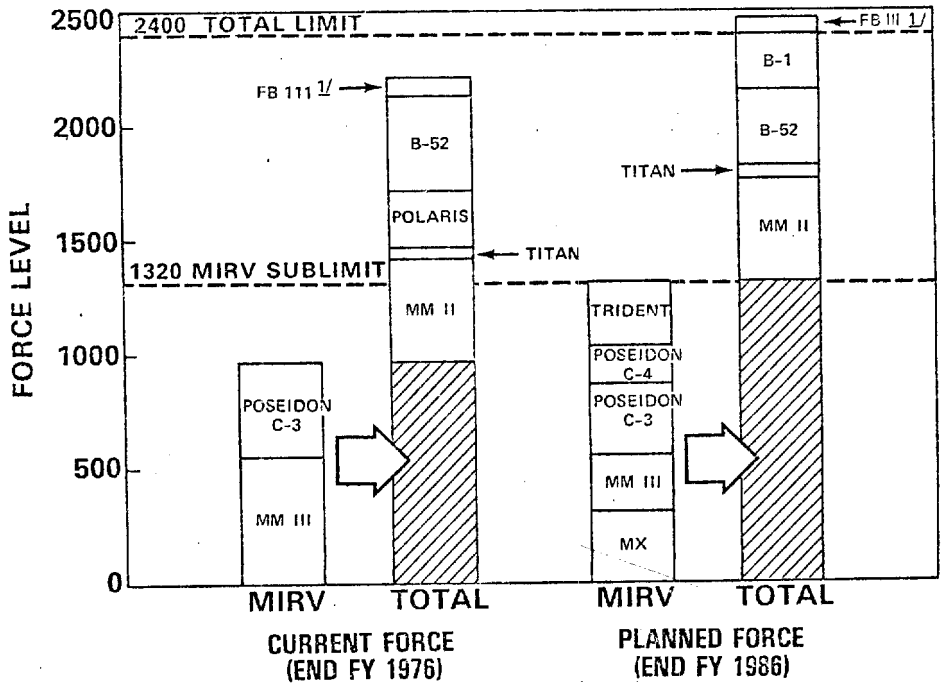
-- A high-confidence Triad of second-strike retaliatory forces within the Vladivostok Understanding of 2,400 strategic nuclear delivery vehicles;

-- Around 8,500 warheads on delivery vehicles for adequate coverage of all relevant mission targets, even after the attrition suffered from an enemy first-strike and from the penetration of his defenses;

-- A single ABM site on inactive status except for its Perimeter Acquisition Radar (PAR) and a light dedicated air defense to provide surveillance and peacetime control of U.S. airspace and prevent a "free ride" over the North American continent;

CHART IX-5

U.S. STRATEGIC FORCE LEVELS



1/FB-111 IS CURRENTLY NOT ACCOUNTABLE FOR SAL PURPOSES

-- A mobile fighter-interceptor force coupled with AWACS which could be used for continental air defense in an emergency;

-- A civil defense program designed to shelter the population against fallout in existing structures, and to develop the capability to evacuate citizens from selected areas during a period of grave crisis;

-- A system of multiple, complementary surveillance and early warning capabilities combined with a survivable command-control-communications network designed to permit the President to direct the strategic nuclear forces in a deliberate and controlled manner in pursuit of national objectives.

With the necessary modernization to replace aging and obsolescing systems, this remains a reasonable posture for the future. Whether the United States can continue to adhere to these preferences much longer depends on the cooperation of the Soviet Union. Unfortunately, excessive expectations on that score are not in order.

C. THEATER NUCLEAR FORCES

It has been convenient for analytic purposes to separate nuclear systems that fit into the strategic Triad from those directly supporting tactical operations -- commonly referred to as theater nuclear forces -- and those with more narrow defensive applications, such as antisubmarine warfare (ASW) and antiair warfare (AAW) weapons. In reality, nuclear systems provide a continuum of capabilities. As part of that continuum, theater nuclear forces constitute a major capability in the defense posture of the United States. Despite some controversy about them, the arguments justifying their existence continue to be persuasive.

A. Functions

Since the detonation of the first Soviet atomic device, there has been a growing recognition that U.S. strategic nuclear forces would not be able to bear the entire burden of credible deterrence by themselves. Some may have questioned that judgment in the past; no serious person doubts it today. The need for other forces to provide a credible response to contingencies less than a direct strategic attack on the United States or its allies is no longer an issue. Clearly, theater nuclear forces must constitute a part of that spectrum of deterrence and response.

Further, as strategic nuclear forces have become less dependent on overseas basing, adequate U.S. theater nuclear forces must be available as part of the deterrent. It has been generally accepted that the theater nuclear forces are not interchangeable with U.S. and allied conventional forces, and that nuclear firepower is no convenient substitute for manpower on the ground. But there should be no question about their importance as a backup to strong conventional defenses and as a major hedge against a failure of those defenses.

The United States has never ruled out a first use of nuclear weapons. If an enemy, whether by stealth and deception or by large-scale mobilization, should attempt to defeat U.S. and allied conventional forces, it is NATO and U.S. policy to take whatever action is necessary to restore the situation. Thus, the theater nuclear forces provide a source of options and flexibility that would be difficult and perhaps inadvisable to incorporate exclusively into strategic nuclear forces. Accordingly, to the extent that a nuclear response may be required locally, theater nuclear forces have an indispensable function to perform in defense and deterrence.

Perhaps most important of all, because other nations -- and most particularly the Soviet Union -- have developed theater nuclear capabilities, a U.S. deployment of such forces is required to deter and if necessary counter them. The United States no longer has the choice of whether or not to deploy strategic or theater nuclear capabilities.

B. Foreign Capabilities

It is true that the United States set the example in the deployment of theater nuclear forces. Postwar planners clearly misjudged the length of the U.S. nuclear monopoly and the amount of time it would take the Soviets to acquire theater nuclear forces of their own. Neither the value of stolen secrets nor the level of Soviet investment was fully anticipated. The size of the Soviet conventional forces oriented toward Europe was overestimated. At the same time, it was assumed that the less costly theater nuclear firepower could make up for shortfalls in NATO manpower, and that there would be an enduring U.S. advantage in tactical nuclear forces. But as early as 1956, the Soviets began deploying MRBMs and nuclear-capable light and medium bombers. Nuclear-capable missiles organic to the ground forces were deployed to Soviet forces by the early 1960s. Today it is estimated that the Soviets have, or soon will have, a nuclear artillery capability, and their theater nuclear forces contain a greater variety of missile delivery systems and more launchers (including those based in the USSR) than those of the United States. The current Soviet capability ranges from the variable-range ICBMs (SS-11, SS-13, SS-17, SS-19) and the new SS-X-20 (described in the strategic section) to short-range tactical rockets deployed with Soviet forces in the Far East as well as in Eastern Europe and with other Warsaw Pact units. All in all, so large and diversified is this capability that it has become difficult to deduce the target system used by the Soviets to justify it.

Much of this force is based outside the NATO Guidelines Area; accordingly, it does not come within the purview of the negotiations on Mutual and Balanced Force Reductions. This is disturbing because the Soviets continue not only to maintain and modernize their force, but also to articulate a military doctrine which permits an early use of nuclear weapons in a European war -- initiated either by NATO to avert a conventional defeat, or by the Warsaw Pact to pre-empt NATO first use. On balance, however, the Soviets would seemingly prefer to wage a purely conventional campaign in Western Europe; they appear to see their growing theater nuclear capabilities both as a deterrent and as a counter-capability to the nuclear forces of NATO.

The USSR is not the only other nation besides the United States with theater nuclear forces. The PRC officially entered the nuclear lists only in 1964. But it has now deployed a medium-bomber force of 77 Tu-16s which is nuclear-capable, and a small complement of MRBMs and IRBMs. We also believe that the Chinese are now conducting a research and development effort to acquire nuclear weapons of various yields along with differing types of delivery means for direct support of their ground forces. This effort underlines the possibility that any major clash between the Soviet Union and the PRC could involve nuclear weapons at an early stage. For the foreseeable future, however, Soviet tactical nuclear forces will greatly outnumber those of the PRC.

This is not the only possibility for nuclear conflict. Other nations continue to show a strong interest in acquiring theater nuclear forces; India already may have a small nuclear capability. Both Great Britain and France have long-standing nuclear capabilities against targets in Central Europe as well as in the USSR. Not only is the United States obliged to maintain major theater nuclear forces in these difficult circumstances; we must also recognize that neither we nor the Soviets are any longer necessarily the sole judges of where, when, and how nuclear weapons will be used. To pretend that by unilateral restraint alone, the United States can control this situation or decide whether other nations will deploy nuclear weapons in a sensitive and important region of the world is to ignore the realities, however unpleasant they may be.

Foreign nuclear capabilities are bound to have an impact on the size and composition of U.S. theater forces. But here as elsewhere, the goal is not to make U.S. forces a mirror-image of what others deploy. Instead, planners must consider what is needed as a function of specific theaters, threats, contingencies, and missions. And because accidents, unauthorized acts and terrorist activities must be of concern where nuclear weapons are involved, we must ensure that security and control over the necessary nuclear warheads are maintained with high confidence at all times.

C. Contingencies

The main planning contingencies to consider in determining a preferred theater nuclear posture are an attack by the Warsaw Pact in Central Europe and an offensive launched against South Korea by North Korean forces logistically reinforced from the outside. Enough nuclear warheads should be maintained for both theaters, since the weapons required for the one would not be available for the other. For planning purposes, an assumption is made that a U.S. decision to use theater nuclear forces would be determined either by an overwhelming enemy conventional breakthrough or by his first use of nuclear weapons.

Within the framework of these planning contingencies, a number of factors determine the conditions of deterrence and hence an appropriate U.S. theater nuclear posture. Since planning allows for the possibility that an enemy might strike first with theater nuclear forces, U.S. capabilities must be sufficiently survivable to absorb such an attack and still have enough sufficient surviving launchers and weapons of the appropriate yields to perform their assigned missions. This means not only a proper mix of forces, but also -- because of the relatively short distances between opposing battlefield systems -- an emphasis for survivability on mobility and concealment. Sophisticated and survivable command-control-communications networks are an integral part of these forces as well.

D. Missions and Forces

The types of missions assigned to the theater nuclear forces will have a major impact on their size and composition. It is noteworthy in this connection that all of the U.S. theater nuclear forces are programmed against military targets. In fact, although there is no less interest in deterrence and stability here than in the strategic realm, the United States plans its theater nuclear forces on the basis of warfighting missions. Both the posture and the contingency plans place proper emphasis on restraint rather than on indiscriminate damage, and on the achievement of traditional military and political objectives, rather than on the destruction of an enemy's society.

The principal missions needed to achieve these traditional ends are:

-- limited nuclear strikes designed to destroy selectively important, fixed military targets and at the same time demonstrate a determination to resist the enemy's attack by whatever means necessary;

-- regional nuclear strikes intended, as one example, to destroy an attacking enemy force before it achieves a major breakthrough;

-- and theaterwide strikes directed at counter-air and counter-missile targets, lines of communication, and troop concentrations both at the front and in reserve.

Various methods exist for computing the number of theater nuclear weapons needed to perform these missions with an acceptable level of confidence. Owing to the transient nature of many tactical targets, the most reasonable approach is to develop options keyed to likely military targets -- such as ground force units, airfields, bridges, or ships -- and determine the number of weapons required to achieve a high probability of significant damage to them on a second-strike. It is on this basis that consideration should be given to whether the number of nuclear weapons deployed to key theaters and at sea is sufficient for the performance of the three vital main missions of the theater nuclear forces.

E. Modernization

Numbers alone, however, do not provide a satisfactory basis for judging the adequacy of the theater nuclear forces. Since it is policy to minimize collateral damage in any theater nuclear employment, an effort is made to tailor warheads and delivery systems to their targets, and to plan the use of yields no greater than necessary for the destruction of designated targets. As nuclear and guidance technologies advance, lower yields can be incorporated into the theater nuclear forces. Where it is done, there is neither a plan nor an intention to blur or erase the distinction between nuclear and non-nuclear weapons. The objective has been and remains to increase kill probabilities, reduce collateral

damage, and economize in the use of scarce nuclear materials.

Some opposition, even now, remains both to the current theater nuclear posture and to its modernization. Some critics question the feasibility of conducting a theater nuclear campaign resembling a conventional conflict in any way, and doubt that the damage from such a campaign could be kept below catastrophic levels. They express skepticism about the stability of less than theaterwide nuclear options; they suggest that any use of nuclear weapons would escalate rapidly to a strategic nuclear exchange. With these reservations in mind, proposals are made to reduce the U.S. overseas deployments of nuclear weapons and to halt any procurement of the newer generation of nuclear weapons.

The difficulty with these proposals is that they seem to treat as known what is intrinsically uncertain. That theater nuclear warfare would resemble a traditional conflict can be described as a contradiction in terms: damage might be unprecedented; chaos could ensue; rapid escalation might follow. But the fact is, we do not know what the outcome would be. Therefore, as long as theater nuclear capabilities exist -- and hardly anyone in a position of responsibility favors unilaterally doing away with them -- the United States must surely insist on exercising control over them and having the option to use them in as selective and deliberate a manner as possible. Uncertainty is no excuse for irresponsibility and the possibility of disaster is no reason to make certain that it occurs.

Just as there are risks in most things, there are some risks associated with the maintenance of non-central systems. But most of those systems are dual-purpose, and there would be a need to deploy them with or without nuclear weapons. In any event, the current Soviet nuclear threat makes clear that there are serious risks in rejecting deployed theater nuclear forces. Opponents could be tempted by their absence; allies would question their own and U.S. capabilities. Greater flexibility may be desirable in designing the characteristics of the U.S. theater nuclear posture; but the basis for the posture itself should not be in serious question.

To say this, and to recognize the importance of retaining our own and allied confidence in U.S. theater nuclear capabilities, is not to argue that the current posture should remain forever immutable. It cannot. If U.S. defense capabilities and the deterrent are to remain strong, periodic modernization is essential. A case in point is the stockpile of atomic demolition munitions (ADMs), which can be emplaced as nuclear barriers. It is characteristic of the current generation of ADMs that if they are subject to acceptable peacetime security and wartime control, they are unlikely, without prepositioning, to be emplaced in a timely enough fashion to be militarily useful. To take other instances, nuclear air defense and ASW weapons have warheads which may increase the probability of destroying aircraft and submarines once

these targets are identified, tracked, and pinpointed. But their overall probability of kill is not necessarily greater than that of their non-nuclear counterparts. Since these weapons are expensive in terms of nuclear material which could be effectively used for other purposes, we should periodically modernize the force. Where newer weapons are more efficient than their predecessors, they should be substituted in the stockpiles -- overseas as elsewhere -- for older weapons. The test of deterrence must not be the overall number, but the utility and capability of the overall force.

Allies deserve to see the U.S. determination to collaborate in their defense by available means. Critics are entitled to know that the currently deployed nuclear forces are not simply dangerous relics from a previous decade. Friend and foe, supporter and skeptic, need to recognize that U.S. theater nuclear forces, even though they may evolve in size and composition as technology advances, constitute an integral part of the overall U.S. deterrent.

XI. CONVENTIONAL FORCES

How we see the relative strength and dynamism of the two superpowers depends on judgments or intuitions about the nuclear balance. This nuclear preoccupation is heightened by official and academic fascination with the technology and strategy of central systems. At the same time, nuclear equivalence, combined with the uncertainties which surround the consequences of nuclear conflict, has led to a revived awareness of the importance of conventional military power.

Increasingly in the West, and probably in the East as well, nuclear forces are seen as credibly deterring only a limited -- although potentially devastating -- number of hostile acts. The main burden of deterrence has once again fallen on the conventional forces. Assessments of where nations stand in the international hierarchy of power may be made according to nuclear criteria (and frequently inadequate criteria at that). But with the reality of rough equivalence in nuclear forces, gains and losses in the international arena are largely determined by conventional military power, will, and resolve. To complete the paradox, conventional military power obtains authority from the nuclear capabilities underlying it. The two basic forces are in this sense inseparable, although the history of the past 30 years indicates that, so long as alliances hold firm, it is not necessary for each member alone to maintain the full spectrum of nuclear and conventional capabilities adequate to the total task. A division of labor has developed. Only the two superpowers have been obliged to carry the burden and responsibility of covering the entire range of modern military power.

A. The Utility of Conventional Forces

Acceptance of this paradox, and of the revived importance of conventional military power, has not gone unchallenged. Questions continue to arise about the need to maintain major conventional capabilities. Since the burden is heavy -- conventional forces take nearly 70 percent of the current U.S. defense budget -- these questions deserve consideration. Three in particular are fundamental to decisions about the size and composition of U.S. conventional capabilities:

-- First, are the risks and uncertainties any fewer in a conventional than in a nuclear engagement, or is escalation just as probable and non-nuclear capabilities simply a small but costly way-station on the road to the nuclear war?

-- Second, whatever the controllability of conventional conflict, what is the feasibility of balancing the large, manpower-intensive, conventional forces of prospective opponents?

-- Third, is it even desirable for the United States to maintain a large conventional capability? Will it deter, or will it weaken deterrence

by its very presence, tempt decision-makers, and draw us into wars at the wrong place or the wrong time?

Absolute answers to these questions are not available. No empirical basis exists for comparing the nuclear with the conventional forces simply because nuclear weapons have not been used since World War II. There are a number of reasons, nonetheless, why a conflict begun at the non-nuclear level seems less likely to end in a strategic nuclear exchange than one which starts with nuclear weapons. The conventional campaign -- even if one thinks of it as a fuse -- has much further to burn than its nuclear counterpart before the greatest risks and uncertainties are reached. And the spark must cross the nuclear barrier. That barrier, or threshold, has now stood for more than 30 years. The precedent is an important one. It seems reasonable to assume that it can continue as a major obstacle to escalation in the foreseeable future. For this reason alone, conventional warfare should be less escalatory -- at least as long as the United States and its allies keep adequate conventional capabilities on hand.

Equally important, we understand conventional warfare, and have been engaged in two conventional wars since World War II, both without violent escalation. The Soviet Union was not directly involved in either. But by and large, it seems plausible to believe that non-nuclear wars will remain more controllable than any nuclear counterpart. Their tempo is likely to be somewhat slower, so that policymakers are under less pressure to make momentous decisions. Sanctuaries can be tolerated more easily, and other limitations on the conflict can be more readily defined and accepted. Damage to the societies of the belligerents can be better controlled and, as a consequence, war aims kept more manageable. Guarantees cannot be given that conventional warfare will be controllable in the future, but its salient features are such that there is certainly a higher probability of limiting it than a nuclear campaign.

The feasibility of countering the main conventional challenges of the future appears to be less open to doubt, despite much conventional wisdom to the contrary. Admittedly the number, variety, and sophistication of conventional probes may increase as the traditional international order evolves, as modern conventional weapon technology proliferates, and as certain nations become more venturesome because of nuclear equivalence. But it is reasonable to suppose that if the United States and its allies can meet the conventional challenge of the Soviet Union and its satellites, they can deal with any of the lesser threats that might arise. The problem, from the standpoint of feasibility, can thus be defined as the Warsaw Pact with particular emphasis on the Soviet Union.

B. Foreign Capabilities

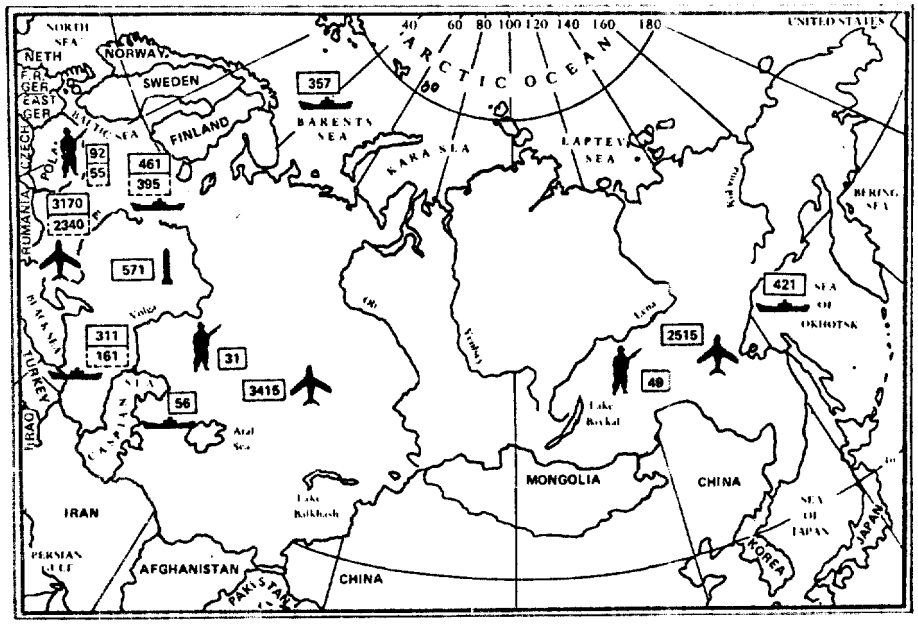
It would be a tragic mistake if, because of the various economic, social, and political handicaps voluntarily assumed by the Soviet Union,

that power were to be characterized as a military pygmy. It is not. However, the zeal to underscore the serious military challenge we face from Moscow should not cause the opposite mistake of describing the Soviet Union as our military superior. It is not -- at this time.

What we are witnessing in the conventional as well as in the nuclear realm, is a determined, energetic, sustained, and increasing effort by the Soviets to develop two large and powerful theater capabilities -- one facing Europe, the other China -- with substantial and increasingly modern offensive power. These forces, and a capability to project power thousands of miles from their shores, are not new developments. They are the product of an effort undertaken over more than a decade and continued regardless of whether U.S. and allied forces have increased or decreased. What is new is the growing recognition of its magnitude and continuity.

CHART XI-1

DISPOSITION OF WARSAW PACT FORCES



Out of the 4.4 million people in their armed forces, the Soviets maintain a general purpose capability of about 2.1 million men (not counting 450,000 border guards and internal security units of an essentially military character). Of this total, about 1.8 million men are in the ground forces. Last year, the number of Soviet divisions was estimated to be 168. Now that total is believed to be over 170. Soviet Frontal

Aviation remains at roughly the same size as last year, with about 4,600 tactical fighter and bomber aircraft. Most of the approximately 500 Badger/Blinder medium-range bombers could also be used for conventional operations. The size of the Soviet general purpose forces navy also remains essentially unchanged. The major surface combatant force consists of approximately 210 ships, and attack submarines total about 150 diesel-powered and 84 nuclear-powered boats.

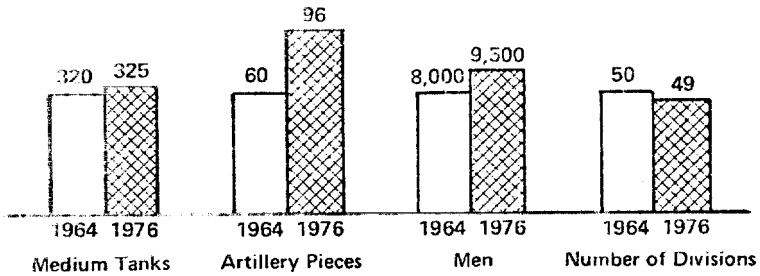
Soviet strategic airlift has continued to expand steadily, especially in lift capability. With an air fleet consisting of approximately the same number of aircraft as they had in 1966, the Soviets can currently lift better than 50 percent more cargo to a range of 2,000 nautical miles (14,800 tons versus 9,600 tons). Soviet amphibious forces, which in the past were designed principally for use in seas near the USSR, are now being upgraded with the construction of new units apparently designed for extended operations and open-ocean transit. The Soviet merchant marine is receiving considerable attention as well. It is already integrated with the Soviet navy, and is being given additional military support capabilities, especially with roll-on/roll-off ships. Prior to 1973, the Soviets had none of these types; they are expected to have as many as 40 by 1978.

As pointed out in previous years, about a third of the Soviet divisions are fully combat-ready, or what are considered Category I divisions. Roughly another third are manned at 50-75 percent of combat strength and may lack some equipment, while the remainder tends to be in cadre status. These Category II and III divisions would be filled out by reservists who receive no further training once they leave active duty. Of more than 170 divisions, about 45 are deployed on the Sino-Soviet border, and about 30 percent of the total force remains east of the Urals.

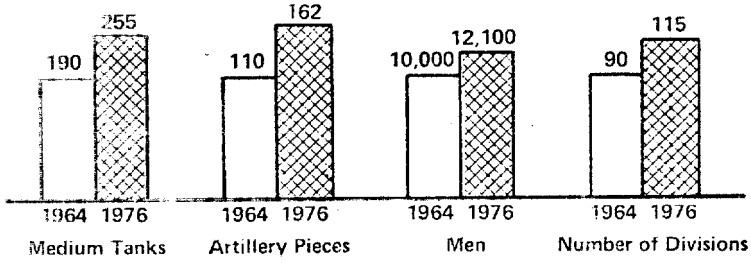
The Soviets have done a great deal to increase the combat effectiveness of their ground forces generally, and have notably favored those divisions oriented toward Europe. The divisions have been expanded in size, and their firepower and mobility have been increased and modernized. Of particular note, a new tank (the T-72) is now being introduced; a capable armored fighting vehicle (the BMP) has been deployed in increasing numbers since 1967; self-propelled artillery is appearing; and army-level air defenses will provide dense, all-altitude coverage. The ground forces today have much greater combined-arms power, speed, and antiair protection than they did a decade ago. They are equipped with chemical munitions, emphasize protection against chemical warfare (CW), and conduct live firings and training exercises to test their CW plans, doctrine, weapons, and equipment. Their capabilities may be commensurate with long-standing Soviet doctrine, which continues to favor rapid offensive thrusts reminiscent of German blitzkrieg tactics in World War II.

CHART XI-2

CHANGES IN THE SOVIET TANK DIVISION, 1976 COMPARED TO 1964



CHANGES IN THE SOVIET MOTORIZED RIFLE DIVISION, 1976 COMPARED TO 1964



Includes artillery and mortars 100 mm or larger, and multiple rocket launchers.

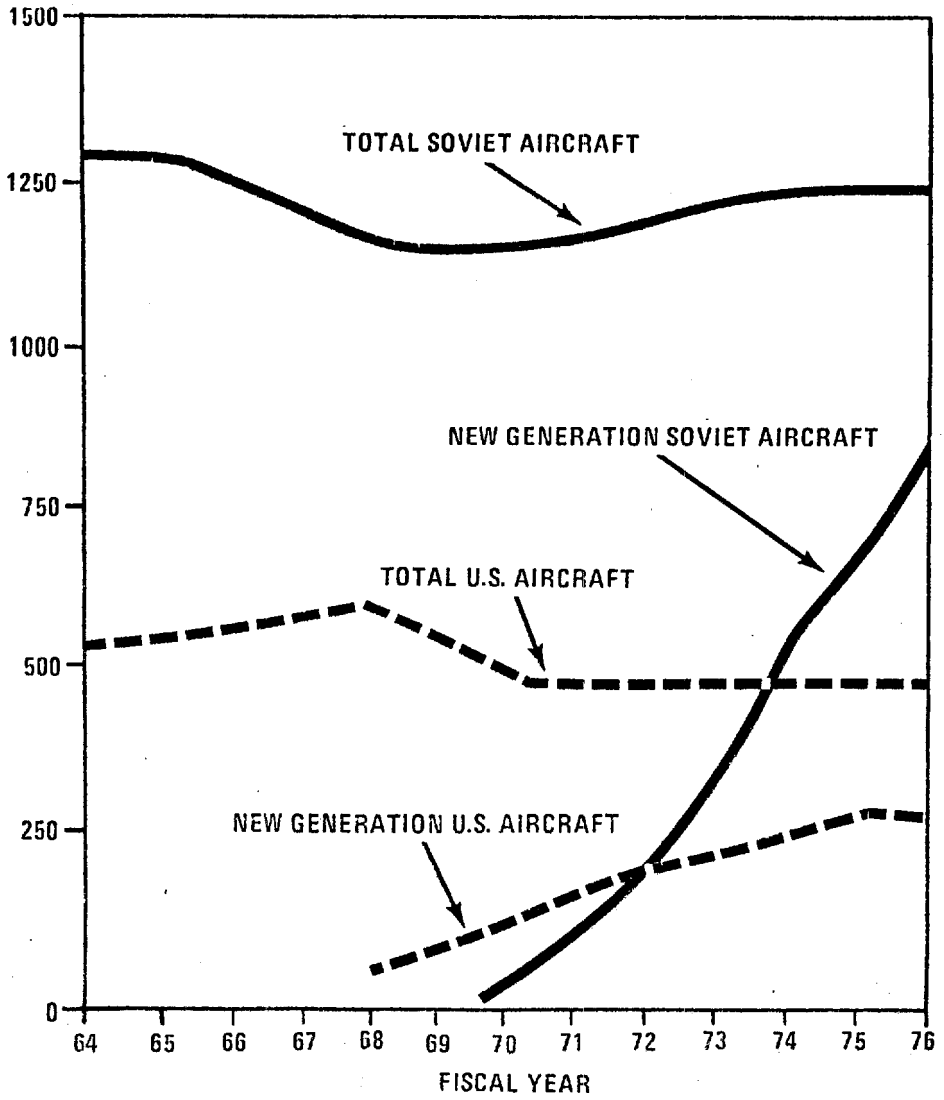
In the past, this doctrine was seen as an indication that the Soviets were preparing to fight a short war of rapid maneuver. This meant that if they could be held for a few days, their forces were expected to exhaust the supplies available to sustain the campaign. Now, however, there is evidence that both in Eastern Europe and in the Far East, the Soviets have added to their war reserve stocks and non-divisional support personnel. As a consequence, they may be acquiring a significant capability to sustain an attack, even though in Europe they continue to emphasize the goal of reaching the English Channel in about two weeks.

A similar effort to match capability with doctrine is evident in the evolution of Soviet Frontal Aviation. Whereas about 2,100 of the tactical aircraft are assigned to units with a primary mission of air defense, most of these, as well as 1,800 ground-attack fighters and tactical bombers are suited and train for offensive operations. Increasingly, the force can deliver bomb tonnages as far west as the United Kingdom. The late-model Fishbeds, and new Fitters, Floggers, and Fencers -- with substantially improved range, payload, avionics, and ECM capabilities -- are adding to the flexibility, reach, and power of the force. The capabilities of these new aircraft are in many ways competitive with current U.S. aircraft such as the late-model F-4s. Although they are

not comparable to the newest U.S. fighters (the F-15 and F-16), they are already deployed in large numbers in operational units, while U.S. aircraft are not. In short, the Soviets give evidence of developing an offensive capability in the air which can complement the growing agility of their ground forces.

CHART XI-3

US/USSR FIGHTERS (Central Region)

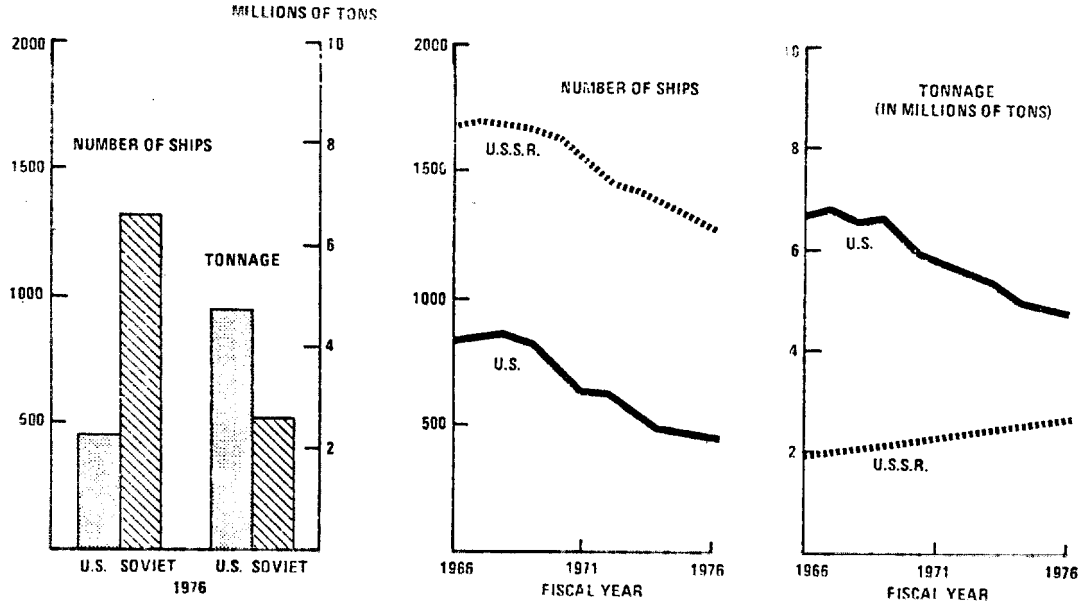


* U. S. FIGURES INCLUDE AIRCRAFT BASED IN UK: SOVIET FIGURES DO NOT INCLUDE AIRCRAFT BASED IN WESTERN MILITARY DISTRICTS

Soviet general purpose naval forces will probably continue to grow in combat power during the coming decade as older surface combatants and submarines are replaced by more capable ships, even though the number of ships may decrease slightly. Combat effectiveness will improve considerably in units designed for both the high seas and peripheral waters. One indication of the probable trend is the introduction to the fleet of the aircraft carrier Kiev, which will probably be used primarily for ASW, although its aircraft could support combat troops ashore, and the ship itself has considerable antiship capability. Another indication is the continued replacement of diesel with nuclear attack submarines, including units that can launch antiship cruise missiles while submerged. The Soviets also continue to improve their shipboard antiaircraft defenses, and the worldwide command-control-communications for their naval forces.

CHART XI -4

CHARACTERISTICS AND CHANGES IN GENERAL PURPOSE*NAVAL FORCES - U.S./U.S.S.R.



*DOES NOT INCLUDE BALLISTIC MISSILE CARRYING SUBMARINES

Two other developments are noteworthy. The Soviets have deployed an excellent system for surface ocean surveillance, and they have introduced the Backfire to their naval aviation. The first enables them to keep continued track of selected U.S. surface forces; the second gives them an extended-range, rapid-response, antiship missile capability of considerable power against U.S. surface ships.

A portion of the growth in Soviet general purpose forces can be related to the buildup in the Far East. However, the Soviets have made no military sacrifices elsewhere to facilitate that buildup. On the contrary, they have simultaneously improved precisely those forces which must be of the greatest and most immediate concern to the United States. The threat to NATO has not diminished; it has grown. Further, essential sea lines of communication are less safe today than they were a decade ago. And it must now be recognized that with their improved naval, airborne, and airlift forces, the Soviets can intervene by sea and air at considerable distances from the USSR, and can sustain such an intervention for a substantial period of time.

Despite these facts, the challenge is a manageable one. Although trustworthy comparative costs do not exist, NATO as a whole probably spends about as much on its defense establishment as the Warsaw Pact. NATO armed forces total about 4.8 million men and women, compared with the Warsaw Pact's 5.6 million men.

Since there is every indication that the Soviets are engaged in a steady, long-term effort which shows no signs of leveling off in the near future, the feasibility of a NATO conventional defense of Europe rests on continued improvements; it cannot be assured once and for all. Unless the United States and its allies are prepared to make up the increasingly obvious shortfalls in their collective security posture, unless we are willing to sustain our efforts and increase them, the response to the challenge could fail.

But failure, if it should occur, would not be for lack of the necessary resources. Compared with the Warsaw Pact, NATO has them in abundance. Despite the continued momentum of Soviet conventional programs, a satisfactory conventional defense capability is feasible for the United States and its allies, and at less of a burden on our economies, as a percent of GNP, than the Warsaw Pact countries have been bearing for many years.

C. Conventional Deterrence

Despite the changes in the international military environment, the argument can still be heard that the maintenance of a major non-nuclear capability will undermine the credibility of nuclear deterrence. Yet a deterrent which depends solely on nuclear capabilities is credible over too narrow a range of contingencies. In most circumstances, choices are needed between passivity and the risks of nuclear warfare. No one suggests that the Soviets have weakened their deterrent by maintaining large conventional forces. What is good for them cannot always be bad for others.

A second argument is that the availability of major conventional forces will tempt Presidents into irresponsible acts. This is an

argument without evidence to support it. We became involved in Korea before we had sufficient forces to support the decision. We did not become committed in Southeast Asia because we had the forces necessary to intervention. Rather, the forces were raised to support the intervention.

Surely we do not want to restrain a President by attempting to deprive the United States of the defense capabilities necessary to national security. Weakness has not become a virtue simply because, in the view of some -- and then, after the fact -- strength may have been used unwisely at some point in the past. We must face the fact that in the current era, as in the past, there can be no risk-free posture for the United States.

One hears the argument, finally, that however desirable it may be in principle to keep the nuclear threshold high, we are not getting value received for the money spent on U.S. conventional forces. The assumption seems to be that conventional forces do not buy additional security; they simply add to the costs of defense. The strong implication is that the world is no safer with the existence of U.S. conventional forces than it would be without them.

Whatever the merits of this argument, it does serve to remind us that the prevention of war cannot be taken for granted. It is almost axiomatic that we can never be certain of achieving deterrence, nuclear or conventional; in a given situation, there is always some probability that deterrence could fail. The burden of conventional deterrence is particularly complex and demanding. Conventional forces are more familiar; if a military response seems justified, their use represents less of a leap into the unknown. The prospects for controlling the most destructive forms of escalation seem better; catastrophe appears to be less probable.

Where nuclear forces are concerned, an adequate posture -- including flexibility and a sound declaratory policy -- may suffice to deter all but the most critical nuclear contingencies. Where conventional forces are concerned, a nation's will and demonstration of resolve loom large. Since the risks of using conventional capabilities may be seen as commensurate with the objectives sought -- which is rarely the case where nuclear weapons are concerned -- the prospective attacker, to be deterred, must have powerful evidence that his intended adventure will be unduly expensive or cannot be counted on to achieve his objective.

It is for others to judge, and avoid error, with respect to the will, resolve, and staying power of the United States. Nonetheless, several points should be made here in response to any who still question the necessity of major U.S. conventional forces. What has not happened is as important as what has happened in our troubled world. International order has broken down in many places, frequently at the instigation or with the encouragement of the Soviet Union. But it has not broken down

in Western Europe since 1945, and it has not broken down in Korea since 1953, despite recklessness and irresponsibility on the part of North Korea. That peace and stability exist in those two key regions after so many years must be credited in no small measure to the deterrent effect produced by the presence and steadiness of U.S. and allied conventional forces. They have worked as a deterrent. They have more than paid for themselves by their silent effectiveness in Western Europe and Northeast Asia.

Just as we are not the world's policeman, so we cannot be expected to deter events in every instance that are off our beat. To say that, however, is not reason to dismantle U.S. conventional forces. That those forces may be 80 rather than 100 percent effective is no argument against their continuation. On the contrary, strength -- conventional as well as nuclear -- contributes to peace; weakness, clearly in this day and age, but also throughout history, can invite war. It is not even too much to say that present circumstances make weakness a greater provocation than strength.

For these reasons, the United States has a clear requirement to maintain an unquestionably strong conventional posture -- land, sea, and air. However, such a declaration of general policy is not enough. It is necessary to be more specific in any statement of needs. To do so, a number of factors must be considered:

-- the contingencies to be used for planning purposes (including the details of the threat and the circumstances of a hypothetical attack);

-- the contributions made by allies;

-- basic strategic objectives;

-- the missions to be performed;

-- the measures of effectiveness to be employed;

-- the levels of confidence sought; and

-- the expected duration of a conflict.

It must be stressed in this context that the definition of a mission in a particular theater -- sea control, for example -- does not automatically result in the specification of a unique force package. The size and composition of the package will depend on a number of factors which can vary, including the magnitude of the threat. As a consequence, caution should be exercised in trying to reach major defense decisions on the basis of missions alone.

D. Contingencies, Missions, and Forces

U.S. force planning approach calls for the United States, in conjunction with its allies, to deal with a major contingency in Europe. Since the threat from the Warsaw Pact to the Central Region of NATO is the worst case, it is given primary attention for planning purposes. However, the northern and southern flanks of NATO also influence the design of the U.S. posture. An attack on the Republic of Korea would have its impact on planning largely in the realm of logistics and overseas deployments.

1. Europe

In Central Europe, two contingencies have concerned the United States for many years. The first is a short-warning attack initiated by the deployed and combat-ready forces of the Warsaw Pact stationed in East Germany, Czechoslovakia, and Poland. The second is an attack by these forces reinforced, primarily from the USSR, after perhaps 30 days of mobilization and deployment. In both cases, attacks on NATO naval forces and sea lines of communication are assumed.

a. Short-Warning Attack in Central Europe

These two cases continue to be the most appropriate for the purpose of generating the U.S. conventional posture. But there is reason to give careful attention and emphasis to the possibility of an unreinforced attack which minimizes warning time. Soviet doctrine has highlighted this possibility for some time; the divisions in the Group of Soviet Forces, Germany (GSFG), have been expanded and given increased firepower and mobility; war reserve stocks have been built up; and more sophisticated aircraft with a greater offensive capability have been deployed to Eastern Europe. The conditions for tactical surprise have become more favorable in the last few years.

Surprise, it should be emphasized, can be much more than the rapidity of the transition from peace to war. Soviet doctrine emphasizes a variety of ways to confuse opposing commanders, disrupt critical defense decisions, and delay their implementation. For the potential attacker, such measures could be preferable to the deployment of massive ground and air forces and all the other preparations for a long, costly, and less winnable war.

The Warsaw Pact already deploys 58 divisions in varying degrees of readiness opposite NATO's Central Region. Of these, 27 are the Soviet divisions in East Germany, Poland, and Czechoslovakia. The remainder consists of 6 East German, 15 Polish, and 10 Czechoslovakian divisions. It is conceivable that the entire force could be ready to attack within 96 hours of a decision for war. Almost certainly the 20 divisions of the GSFG and the 6 East German divisions could meet or exceed this schedule. The other divisions could be used as a first element of reserves.

Because of these possibilities, the size of the attack force could vary from a low of about 500,000 men to a high of as many as a million. They could bring to bear anywhere from 9,000 to 15,000 tanks. The Pact could also commit on the order of 2,900 tactical aircraft to a surprise attack. Of that total, around 1,400 would consist of modern fighter aircraft at the present time.

To defend against such a very short-warning attack, NATO would have, at best, about 25 maldeployed non-U.S. divisions at low states of readiness and alert. To implement a forward defense strategy along a front of about 900 kilometers, this force -- without any U.S. contribution -- would have to be stretched thin. Even against the GSFG only, its chances would be poor since the attacker would have the initiative. Against the higher threats and a fast-breaking attack, its position could well prove untenable without an early use of nuclear weapons. Quite apart from any advantages of deception and tactical surprise, division frontages and force and firepower ratios would so favor the Pact that an early breakthrough of major proportions would have to be expected. Without a major U.S. presence, defense against such an attack would be precarious and problematic at best.

To increase military and political stability in Central Europe in the face of a possible short-warning attack, the United States has for many years supplemented the allied contingent with a deployed force of five division equivalents and eight fighter-attack wings. These capabilities help to improve coverage of the front and make force and firepower ratios much less favorable to the Pact. Because an attack could come with little warning, the divisions and air wings have to be stationed in Europe, or be rapidly deployable, if they are to have any effect on the battle and its deterrence. They must also have prepositioned stocks of combat consumables and materiel. The size of these stocks is affected by estimates of the length and intensity of the war and the ability to deliver additional stocks from the United States with hardpressed airlift and sealift assets. A reasonable goal for prepositioned war reserve stocks in Europe, all possibilities considered, is at least 60 days of supply, assuming intense rates of combat consumption.

As can be seen, a first slice -- but only a first slice -- of the U.S. conventional posture is based on four assumptions:

-- the possibility of a short-warning attack by in-place Warsaw Pact forces;

-- an attacking force which could amount to 500,000 or more men;

-- a forward allied defense;

-- the need to keep the ratio of attack to defense well below two-to-one.

Although these assumptions are tenable, others are possible. In principle, a larger allied and a smaller U.S. contribution to the common defense could be postulated. In practice, the difficulties of such a substitution are obvious. The bulk of any replacement for deployed U.S. forces would have to come from the Federal Republic of Germany; the security of U.S. nuclear weapons would become an increasing issue; and the political stability induced by a major U.S. presence would be shaken.

It should be noted that the force numbers used in arriving at judgments about U.S. requirements may not always coincide with those used in the negotiations on Mutual and Balanced Force Reductions (MBFR). Several reasons exist for the difference. First, force planning dictates that we look beyond the NATO guidelines area and, as appropriate, consider other capabilities, including those of Denmark and France and forces stationed in the United Kingdom. Second, we are interested, for planning purposes, in the field forces which might become engaged rather than in the manpower totals for armed forces with which MBFR must be concerned.

b. Mobilization and Deployment in Central Europe

The size and composition of U.S. general purpose forces are sensitive to the short-warning attack contingency in Europe. But their need derives primarily from a more demanding contingency. This is a case where, during a period of rising tension in Central Europe, the Warsaw Pact mobilizes and adds to the forces already deployed in Eastern Europe, after which it attacks. Since so much of the U.S. conventional posture is dictated by this contingency, the key assumptions about it need to be made explicit.

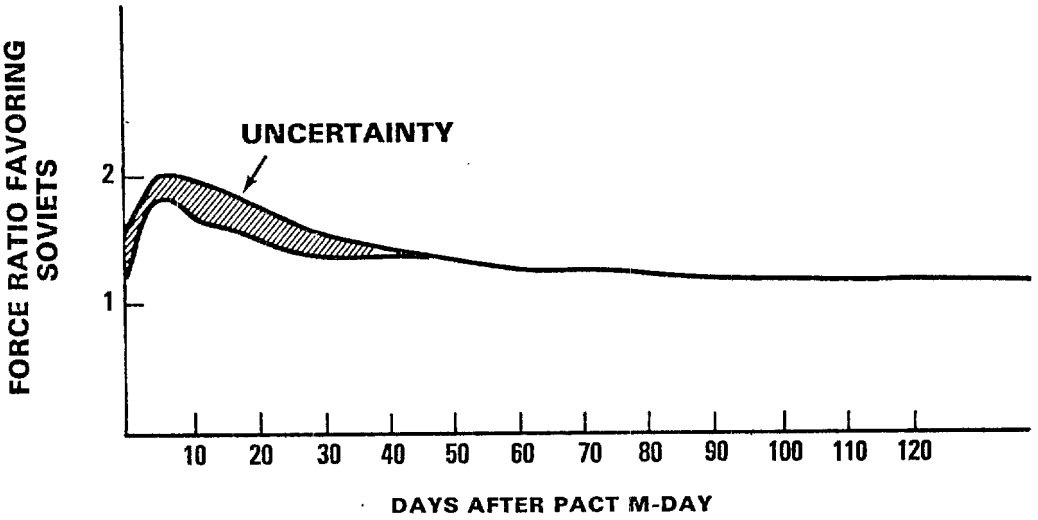
For planning purposes, it is postulated that, within 30 days, the Soviets could mobilize, flesh out, and deploy to East Germany the 29 divisions and 900 aircraft that they station in the three western military districts of the USSR. With the rounding out of other units, the total Warsaw Pact capability facing the Central Region of NATO would amount to about 87 divisions, 1.3 million men, 27,000 tanks, and about 3,700 tactical aircraft.

Although the Soviets have not conducted a mobilization and deployment on this scale since World War II, it is conceivable that they could do it in fewer than 30 days with a substantial use of air and road transportation to supplement movement by rail. It is also quite possible that the deployment would take longer.

With additional time, the attack force could be built up still further by divisions drawn from other regions, including the Far East. To do this, however, would create vulnerabilities on other Soviet borders and would afford NATO additional days in which to improve its posture. The United States in particular would have more time to move its forces. The Soviets, recognizing this, might choose to begin the attack earlier, with somewhat smaller forces.

CHART XI-5

WARSAW PACT/NATO FORCE RATIO
(CENTRAL REGION)



For these reasons, force planning, as contrasted with contingency planning, continues to use a force of 87 Warsaw Pact divisions attacking at M+30 as the basis for designing the U.S. response. I should stress, however, that an attack of this magnitude could occur after substantially fewer days of mobilization and deployment by the Pact, although it would have to include low-readiness divisions. There is also a possibility that NATO could fail to use effectively the available warning time and therefore could lag in its response to the Pact buildup sufficiently so that little more than the currently deployed forces would be available for defense along the Central Front. That is one reason why contingency plans exist for the possible use of nuclear weapons at a relatively early stage in the Pact attack.

The standard planning assumption is that NATO would have fairly clear warning of Pact intentions to attack, would begin its mobilization and deployment by seven days after the Pact's, and would, accordingly, have 23 days in which to build up its defenses. For force planning purposes, it is hypothesized that the main allied effort would take the form of rounding out and adding support forces to the divisions already deployed. This would leave to the United States the main burden of bringing NATO back into balance with the Pact. It has been judged that the early addition of about ten more divisions and 15 more tactical air

wings from the United States (for a total U.S. contribution of 15 divisions and 23 tactical air wings by approximately M+30), along with the strengthened allied forces, would provide an adequate basis for an initial forward defense against the 87-division attack force of the Pact. According to this planning concept, a total NATO capability in the Central Region of 40 divisions and 3,900 tactical aircraft should give reasonable coverage of the front, provide a reserve, and prevent force and firepower ratios from favoring the Pact to an excessive degree.

Once such basic planning assumptions are made, and the initial force are postulated, other requirements follow. Because U.S. forces should be on line in Germany within 23 days, most of them have to be ready and come from the active inventory. Major reserve units, however valuable for subsequent reinforcement and other less time-urgent situations, cannot be expected to meet even this, let alone the more exacting mobilization and deployment schedules generated by attacks with little or no warning.

Because the deployment schedule would allow so little time for the arrival of the crucial U.S. reinforcements, the means of bringing them on line are limited. One obvious way to solve the problem is by keeping as many as 15 divisions and 23 air wings in Europe at all times. That is not desirable for a number of reasons, including the fact that, while the Central Region of Europe is of vital interest to us, there are other contingencies we seek to deter as well. To tie down most of our ground and air forces in Central Europe, with all the problems of extracting them for use in the event of a crisis elsewhere, would be unacceptable.

As Soviet power in Eastern Europe has grown, the United States has added two brigades to the deployed forces in Germany, just as we have added to the total number of Army divisions. We have also added fighter-attack aircraft in Germany and the United Kingdom.

For purposes of rapid reinforcement, we can preposition stocks of materiel and supplies in a threatened theater, and fly in the men to "marry up" with that equipment. Another choice is to use airlift to move both men and materiel in the early stages of a buildup and rely on sealift for the satisfaction of longer-term needs.

Each of these methods has its own vulnerabilities. In order to spread the risks, we preposition several division sets of equipment in Europe and expect to improve the U.S. capability for sealift. But because of the demanding NATO deployment schedule (and the U.S. need for worldwide mobility), we rely most heavily on strategic airlift for quick response, and place particular value on wide-bodied aircraft with their ability to move outsize cargos. As long as large tonnages must be delivered rapidly over long distances, there is no other choice. Specifically, for the NATO contingency, the United States would need to move on the order of 370,000 tons within about 30 days. With a capability of that magnitude in hand, it should be possible to deal with most other contingencies that could arise.

The alternative to such a large capability would be a willingness to engage in the classic practice of trading space for time. As a result of such a trade, mobilization could proceed more slowly, and deployment capabilities would not have to be as massive and costly. But planning to give up territory to buy time is an unattractive proposition on several counts. Those whose territory would be traded -- our NATO allies -- are unlikely to see merit in the idea, and we would find that in saving peacetime investment and operating costs, we had simply deferred larger costs and greater risks to wartime.

Forward flexible defenses are often an advantage because smaller forces are required to hold a well-chosen line than to retreat and subsequently take the offensive to recover territory previously lost. Casualties also tend to be lower in the first than in the second case. In the circumstances, it is clearly why strategic airlift is regarded as such a bargain. The continued inability to fund the proposed modifications in the Civil Reserve Air Fleet (to make it adaptable to military cargos) is therefore particularly disappointing.

If there were complete confidence that the deterrence of conflict in NATO and elsewhere (including at sea) would require only short-war capabilities, the bulk of U.S. conventional needs could probably be met by active ground forces, tactical air wings, strategic mobility, and naval power projection forces. There is little confidence, however, that future NATO wars necessarily would be short or that other contingencies would not require longer-war capabilities.

As far as can be determined, the Soviets plan for a short, violent, fast-moving attack on NATO which, if not successful, would burn itself out in a relatively short time. But doctrine and practice do not always coincide; rationing of supplies and less violent offensives could lengthen Pact endurance. In any event, the evidence mounts that the Soviets are investing more in non-divisional support units and other elements of staying power.

It would make little sense to strengthen U.S. short-war capabilities at the expense of staying power only to discover that the enemy could outlast us. Accordingly, for the sake of deterrence alone, NATO must hedge substantially against longer-war eventualities. One part of the solution is to have the main Guard and Reserve forces serve as a first echelon of reinforcements and replacements for the active units which will have borne the brunt of the initial defense. Another part would be, in critical areas, to provide sufficient war reserve stocks so that we could fight from D-day to P-day (the time when production lines can satisfy our combat needs).

Uninterrupted access to the main sea lines of communication would be essential to any major overseas combat operation by the United States. Otherwise, even if an enemy could not defeat us directly in the land battle,

he could force us into a desperate situation by using his naval forces to cut us off from our home base of supply.

In the event of a major mobilization in Europe, the United States would begin to move and protect cargos at sea, partly because the period of crisis might last more than 30 days, and partly because it cannot be assumed that a major war in Europe, once started, would stop at U.S. convenience. Nor can it be assumed that the conflict would not actually have begun elsewhere (in the Middle East, for example), or that it would not spread elsewhere. In these circumstances, it seems essential for us, in conjunction with our allies, to have the capability to protect the sea lines of communication in the Atlantic, through the Mediterranean, and in the Pacific as far west as Japan and South Korea.

The main naval threats, for planning purposes, come primarily from the Soviet fleets based in the Barents Sea, the Black Sea, and the western Pacific, and from long-range Soviet naval aviation. These forces might begin operations only after D-day. But since the Soviets would have the initiative, they might be able to deploy some of their ships and submarines into the North Atlantic, Eastern Mediterranean, and Western Pacific before a conflict began. In either event, U.S. strategy would be to create a series of barriers that Soviet aircraft, submarines, and surface combatants would have to cross to attack our merchant shipping and surface combatants, and cross again to return to their home bases.

U.S. carrier and land-based air would provide the main defense against Soviet naval aviation and surface combatants, but they would also participate along with U.S. barrier forces in a campaign of attrition against Soviet submarines. Three types of barriers could be formed. The first could deploy in relatively narrow waters and consist primarily of mines, submarines, and patrol aircraft. The second and much looser barrier could be formed in the open ocean and depend for its effectiveness primarily on ocean surveillance systems, attack submarines, and patrol aircraft. The third barrier could consist of the close-in defense of such high-value units as carriers, amphibious groups, convoys, and underway replenishment groups and be based primarily on escort ships, helicopters, direct-support submarines, and where available, carrier-based air. The requirement for surface and submarine combatants is largely determined by this task. For force planning purposes it is assumed that around 240 frigates, destroyers, and cruisers, and enough direct-support submarines would be necessary to protect 12 carrier task forces, two amphibious groups, the necessary underway replenishment groups, and at least 6 convoys. Manning the other two types of barriers largely accounts for the remaining U.S. patrol aircraft, submarine, and modest surface mine-laying capabilities.

Naval forces also fulfill other important roles. In particular, the capability of the aircraft carrier to project tactical air power from the

sea represents an effective means of supporting national policy.

Aircraft carriers constitute a mechanism for showing a presence, managing crises, and projecting power. Since World War II, U.S. policymakers have used naval forces and carrier strike groups to support major interests on at least 43 occasions. The circumstances have ranged from reminding potential nations of the U.S. presence to engaging in combat operations. For the foreseeable future, there is little reason to expect that the need for carriers to perform such roles will decline.

Accordingly, planning of future naval forces should sustain the present capability for crisis management and power projection. The main elements of that capability will consist of task groups built around a mix of large-deck aircraft carriers and smaller, less expensive, conventionally-powered V/STOL carriers.

c. The Flanks

An attack on the Central Region of NATO is, of course, not the only basis for the U.S. non-nuclear posture. The flanks of NATO could come under attack simultaneously with a Pact offensive in the Central Region. Either in North Norway, Jutland, or possibly in Greek or Turkish Thrace, the weight of a Pact offensive could require reinforcement of the allies. For force planning purposes, it is assumed that at least part of this requirement would be satisfied by a U.S. Marine Amphibious Force and its associated lift. If used in other than a reinforcing role, this expeditionary force would have to depend, in turn, on fire support from accompanying surface combatants and, if available, from the aircraft of at least two carriers until Marine airpower could be established ashore.

2. The Minor Contingency

The strategic concept calls for the United States to plan on the occurrence of a minor contingency prior to or simultaneously with a major contingency. The reason for this relationship is twofold: not only could a small engagement result in a larger conflict elsewhere; it could require the commitment of U.S. forces which could not then be extricated in time for use against the major threat.

An example of this possible sequence of events arose with the covert introduction of Soviet MRBMs and IRBMs into Cuba. The problem for U.S. policymakers at that time was how to force the missiles out of Cuba and simultaneously deter the Soviets from taking action in some other region, particularly Europe, where their military leverage was greater. The solution was to place U.S. strategic nuclear forces on a high alert and mobilize land, naval, and air forces against Cuba while maintaining an ability to respond to a contingency in Europe with general purpose forces. Even though in the autumn of 1962 the general purpose forces were already being developed for two simultaneous contingencies

of considerable size (attacks in Europe and Korea), this response to the Cuban missile crisis made extraordinary demands on the U.S. non-nuclear posture and stretched it thin.

Under present circumstances, it does not seem excessively conservative to program at least three divisions, amphibious lift for an additional brigade of troops, at least 4 wings of Air Force and Marine Corps tactical aircraft, and two attack carriers for a minor contingency. This force would be no larger than the capability actually deployed against Cuba in 1962, well before the proliferation of modern non-nuclear technology. In some areas of the world, it might not be any better equipped than the forces of potential adversaries.

3. Force Implications

It is now possible, based on standard planning assumptions, to summarize the main elements of the active non-nuclear force structure the United States would require to deal with a major contingency in Europe and a more or less simultaneous minor contingency comparable in magnitude to the Cuban emergency of 1962. Land forces would consist of 19 active divisions, of which three (by law) would consist of Marines with accompanying air wings. Other land-based fighter-attack needs would be met by 26 active Air Force tactical fighter wings. Strategic airlift, measured in mission objective rather than aircraft, would be sufficient to move about 370,000 tons of military equipment over a range of 3,500 nautical miles in fewer than 30 days. Naval forces, with their farflung responsibilities for sea control and specialized power projection, would comprise a two-ocean ASW capability, 12 carrier task forces, and the amphibious lift for the assault elements of a Marine amphibious force and one Marine amphibious brigade. These are, in fact, the general purpose forces that have been programmed for the past two years.

4. Northeast Asia

There is a view, I realize, that the United States is actually preparing to deal simultaneously with more than one major contingency. According to this theory, not only are substantial forces oriented toward a high-technology war in Europe; the two-front strategy has been kept as well. Critics of this persuasion cite U.S. Navy deployments in the Pacific, the 2 divisions and 3 tactical air wings there, and the fact that some of the Continental U.S. (CONUS) based divisions still remain light and suitable primarily for the so-called third-world contingencies.

Several points are relevant to such suspicions, and should allay them.

-- First, it makes sense in peacetime to maintain a limited presence in the vital area of Northeast Asia to guard U.S. interests and keep watch over the sea lanes. Current deployments are there for defensive

purposes and are not excessive to their missions. Indeed, the U.S. military presence in the Western Pacific is smaller than at any time since 1950.

-- Second, a war in Europe could spread to the Pacific. Some forces would be needed in that area to hold positions, tie down Soviet forces in the area, and protect essential sea lines of communication.

-- Third, the great majority of the U.S. forces, including those based on the west coast and some elements in the Pacific, would be needed for a NATO contingency. The peacetime location of these forces does not necessarily indicate or restrict their use in wartime.

-- Fourth, funds to accelerate the "heavying up" of two more Army divisions are being requested, and consideration is being given to the problem of retaining the amphibious capability and, at the same time, making the Marine Corps more adaptable to the high-intensity wars of modern technology.

E. Conclusions

In correcting misapprehensions, the opposite error should not be made of mistaking the force planning process for a prediction of how the resulting posture will be used. The European contingency is a major factor in shaping the U.S. conventional force structure. And if a full-blown crisis should develop in Europe, it would absorb the bulk of U.S. conventional forces. But it is a planning contingency, not a flat statement of where an emergency will arise or the only theater where U.S. forces will necessarily be required. Without such a planning contingency, we could be left with unlimited demands on U.S. national resources, or even less satisfactory methods of designing the posture. Nonetheless, we must avoid becoming literal in equating contingencies with reality, rigid in committing forces to specific theaters and contingencies regardless of the circumstances, unimaginative in remaining wedded to a particular strategic concept independently of U.S. interests and the dangers to them.

The main U.S. security objectives continue to be peace and stability through suitable defense and deterrent forces. Aside from the Western Hemisphere itself, Western Europe and Northeast Asia are the two regions most essential to U.S. security. Whatever the strategic concept used for force planning purposes, it is necessary to avoid a demonstration of capability and will to resist pressure and aggression in one of these great regions at the cost of denuding the other and inviting pressure there as well. We may be willing to arrive at the necessary size and composition of U.S. forces on the basis of a major and minor contingency. But we must be equally sure to have a posture that is sufficiently large, modern, ready, and well-positioned to face the most demanding threat in Europe and still maintain the deterrence produced by a forward deployment

in Northeast Asia. If the strategic planning concept does not permit that, the concept should be changed.

Conventional deterrence does not come without cost in the modern world. Although the United States has a large stake in peace and stability, it could pay less for that deterrence. Others may choose to follow just such a course. Under the guise of efficiency, they may urge the redeployment and reduction of U.S. general purpose forces -- possibly, in part, to avoid those responsibilities which entail risk. I am convinced that the risks of irresolution and weakness are greater. The current U.S. conventional posture and deployments are the very least we can afford to provide for the security and stability we enjoy in an increasingly precarious world.

XII. OTHER CAPABILITIES

The size and composition of U.S. nuclear and conventional forces will be highly sensitive to the assumptions made about the factors reviewed here. It is possible to be more or less conservative in the way the structure is designed; more or fewer risks could be taken.

The present course continues to be a moderate one. The world has not changed significantly for the better in the past decade. In many ways, it holds more dangers and surprises for the American people than it did in the mid-1960s. The military threat has not declined; it has expanded, and become more diversified. Yet the United States has tried over a number of years to maintain security with defense budgets which, in real terms, have been lower than they were before the war in Vietnam, and with a defense posture which is smaller in many respects (if more capable in some) than it was in 1964.

Whether the adverse trends of recent years can be arrested, and the necessary conditions of security maintained with these forces, remains problematic. Certainly it cannot be done by reducing the other capabilities which add so much to the overall deterrent. The United States must have adequate funding for programs in intelligence, research and development, military cooperation with other nations, command-control-communications, and logistics.

A. Intelligence

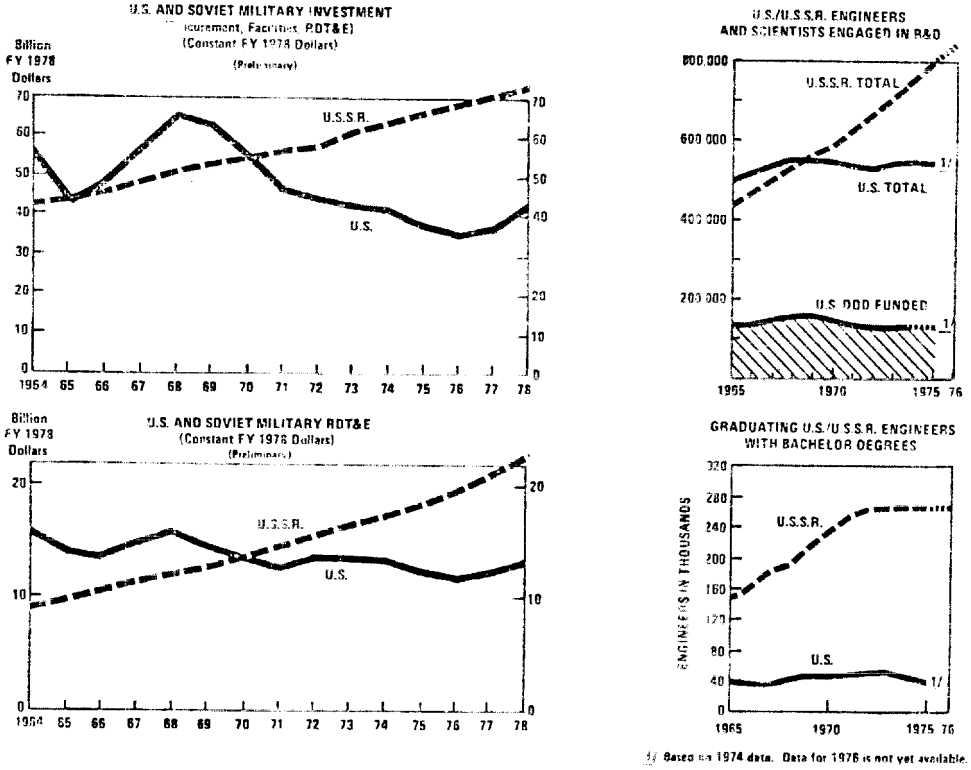
Without the collection and analysis of the various intelligence capabilities, uncertainty about the size and composition of adversary forces would be much more substantial, and we would know even less than we now do about opponents' plans and capabilities. Risks would increase. It would be necessary to introduce greater conservatism into the planning and programming of the U.S. posture and take out heavier insurance against surprises in action and technology. As one example, we have made relatively modest deployments to Europe based on our knowledge about current Warsaw Pact capabilities and deployments. Without that knowledge, either U.S. requirements would grow or our dependence on a nuclear strategy would have to increase.

B. Research and Development

Without a major program of research and development, the United States could not keep pace with the Soviet Union, improve the efficiency and effectiveness of our posture, or even understand adequately what our opponents are doing. The Soviets have had a long-standing and deep commitment to technological excellence in the military sphere; they have made great strides toward their goal. That is one reason why we must be cautious about the transfer of advanced technologies to them. In many

CHART XII-1

COMPARATIVE U.S. AND SOVIET INVESTMENT IN MILITARY FACILITIES AND TECHNOLOGY



areas of their military establishment, they have actually increased the size of their forces as they have heightened their sophistication. For the most part, quantity has not been traded for quality.

This development has several implications for the United States:

-- We must recognize that the principle of diminishing marginal productivity is as applicable in mature technologies as elsewhere; additional investments in those technologies will not produce returns to scale, and the Soviets will catch up -- as they are doing in inertial guidance.

-- This means that we must be more alert than ever for new technological opportunities with defense applications and invest more to bring them along. At present, for example, we must pursue the technologies of long-range cruise missiles and guidance which, in combination, can permit improvement in our conventional capabilities against many targets. There is also the possibility of improved sensors to detect, locate, and identify the presence and activity of foreign military forces. Space-based sensors are especially interesting, as are mini-micro computers.

-- Finally, since geography remains important, we must recognize that the substitution of quality for quantity has only so much potential. Numbers remain essential in most military operations, whether of men to provide a certain density along a front, of aircraft to saturate a defense system, or of carriers to maintain a presence in separate oceans around the world. Accordingly, the U.S. investment in procurement as well as research and development must be increased.

C. Military Cooperation with Other Nations

Cooperation with other nations through programs of loans, sales, and some grants is desirable in certain cases to support U.S. foreign policy and national security. Some look at such programs and fail to see that it is in our interest for the NATO allies to purchase arms from the United States, that it makes sense to approve certain military sales to Israel, that it is better that we, rather than the Soviets, sell an air defense system to Jordan. The overall security assistance program has been a useful foreign policy tool since the Marshall Plan. Every administration and Congress in the past 29 years has supported the program.

Without military sales and assistance, it would be difficult for many of our friends and allies to share the burdens of collective security with us. Nor could we count on their forces to complement ours with any degree of efficiency. Overseas base rights and other facilities sometimes depend on a willingness to make U.S. defense equipment available. Regional balances of power that could affect world stability and peace, as in the Middle East, may depend on the U.S. ability to support well-disposed nations, especially when others are being supported by assistance and sales from the many sources of arms in the USSR and Europe. Balance-of-payments considerations, while not central, cannot be ignored. Where proud and independent states with large dollar earnings see it in their self-interest -- as well as their sovereign right -- to acquire defensive capabilities, their requests must be taken seriously, just as we have an obligation to decide which sales are in the U.S. interest.

D. C^3, Readiness, and Production

Other capabilities are central to the U.S. posture as well. Without the command-control-communications permitted by modern technology, military resources could not be used in the most efficient possible fashion, and we could hardly hope to depend as we now do on deliberate, second-strike responses for strategic deterrence. Without a high level of readiness -- materiel as well as personnel readiness -- it would be impossible to substitute quick, forward, and economical defenses for the much larger forces required when space is traded for time and lost territory must be regained. In an era of uncertainty, without a war production base which can satisfy current equipment and supply needs, and expand rapidly to meet sudden emergencies and demands, the United States would encounter even greater difficulties than in the past in responding to a Soviet

surge in the production and deployment of guns, tanks, aircraft and missiles. It is necessary only to recall the demands made on U.S. materiel inventories as a result of the Middle East war of 1973, and the difficulties since encountered in replacing those drawdowns, to realize how limited the U.S. war production base has become. As that war demonstrated, the entire annual U.S. production of tanks could be consumed in a war lasting only a month or two. To be sure, war reserve stocks can substitute in some measure for a "hot" production base, but they are not a proof against uncertainty. The expanding Soviet production base, and the possibility of its being surged, mean that a diversified and "warm" production base is an essential condition of U.S. security in these uncertain times.

E. Assumptions and Planning

As indicated, changes in assumptions about key factors relevant to force planning can lead to modifications in the U.S. defense posture. An example of such a modification occurred in 1970 when it was decided to go from a "two-plus" to a "one-plus" strategic concept on the ground that the Sino-Soviet split removed the previous need to deter a two-front war.

Greater or fewer risks can also be taken with the force structure.

-- The Army would prefer the higher confidence of narrower division frontages than are now being assumed for the European contingency. This would drive up the number of divisions necessary to keep in the active land force structure.

-- The Navy would like more ASW and AAW barriers in the Atlantic, Mediterranean, and Pacific, which would increase the probability of kill against Soviet submarines and other forces attacking our sea lines of communication.

In these and other instances, however, it must be decided whether increments of effectiveness would be worth the additional costs, partly because of diminishing returns to scale, but also because of opportunities to invest resources elsewhere with larger returns in the overall effectiveness of U.S. forces.

In an era of significant uncertainty, U.S. forces must have much better than even odds of achieving their essentially defensive objectives. They need not be overdesigned in the search for a no-risk posture, but we must clearly avoid creating a capability which inspires low confidence among friends and over-confidence among foes.

A posture which depends for its effectiveness on the restraint and cooperation of our enemies is not a satisfactory deterrent. Opponents who are assumed to ignore U.S. vulnerabilities and attack U.S. strengths may be a convenient fiction for wishful thinkers. They are not the stuff of real life. Now is not the time for major vulnerabilities or the facade of deterrence. To deter, the United States must have a credible capability to fight back if attacked -- that, above all, is clear.

XIII. NET ASSESSMENTS

A. Methods

To what extent does the current defense posture of the United States, and the one projected through FY 1981 -- essentially the posture described and recommended to the Congress a year ago -- achieve U.S. objectives? To answer that question requires use of the same analytical methods employed in the design of the posture. If future trends in the factors that shape our posture have been accurately foreseen -- and particularly trends in the threat -- the previously programmed posture should prove adequate to fill current and future needs. Nonetheless, periodic and separate assessments of that posture need to be made.

Just as weapon systems should not be evaluated by the same group that designed them, the effectiveness of the U.S. defense posture is best assessed by groups not intimately engaged in its construction. It is also the case that, because of long lead-times for the development and production of weapon systems, and for the training of military personnel, the posture today is bound to reflect decisions made some years previously. Since many of those decisions had to be taken under conditions of uncertainty about a number of planning factors, what was judged adequate only a short time ago may no longer fit the situation.

The United States is involved in a highly dynamic political-military process. Accordingly, our posture and programs must be continually assessed in light of more precise data so as to ensure the continued appropriateness of the capabilities to our needs.

In making such assessments, a number of off-design contingencies are considered, as well as the basic cases from which the U.S. defense posture is derived. However, the main tests the posture must pass before we can be satisfied as to its adequacy are:

-- the ability of the strategic nuclear forces to survive a surprise Soviet attack and execute its missions with the desired level of effectiveness;

-- the ability of the general purpose forces, in conjunction with allied capabilities, to conduct a successful, forward, non-nuclear defense of Central Europe or South Korea;

-- the ability of U.S. naval forces to maintain selective control of the seas to permit essential support of forward defenses and allies.

In addition, because of nuclear equivalence and the revived role of conventional forces in maintaining U.S. security, it is necessary to begin examining the ability of the U.S. war production base to respond to a sudden surge in Soviet military outputs.

Not only should these assessments deal with the current military balance; they must also consider where the United States and the Soviet Union expect to be militarily in the future. Only if such an assessment is made, allowing for uncertainties, is it possible to judge whether the Five-Year Defense Program is adequate to estimated U.S. needs.

B. The Strategic Nuclear Balance

1. The Present Situation

At the present time, U.S. strategic nuclear forces are capable of completing the missions prescribed for them under second-strike conditions. Even after a full-scale Soviet surprise attack concentrated on U.S. forces, it is estimated that the on-station SLBMs, the bulk of the ICBMs, and most of the alert bombers would survive, along with the minimum essential command-control-communications system. The surviving force should be able, if necessary, to cause major destruction to the military and industrial capacity, and to the leadership and population of the Soviet Union. In addition, elements of the surviving force would be available to engage in other responses. The Soviets appear to be in a comparable position.

These conclusions suggest that despite differences between the U.S. and Soviet strategic capabilities, the two sides are roughly equivalent at the present time. As now constituted, the U.S. posture contributes to both crisis and long-term stability. It lacks capability for a disarming first-strike; its ability to destroy fixed hard ICBMs on a time-urgent basis is severely limited. In no way does the posture threaten to degrade significantly by offensive or defensive means the Soviet capability for second-strike assured retaliation.

2. The Future

Evidence of restraint on the part of the Soviet Union would be welcome. Unfortunately, it has not been forthcoming. Along with the increasingly large throw-weight they are deploying in their ICBMs, the Soviets have dramatically improved the accuracy of this force. At exactly what point the combination of throw-weight, MIRVs, high yields, and low CEPs will give them a high kill potential against U.S. Minuteman/ Titan ICBMs still remains a matter of some uncertainty. There can be little doubt, however, that within a decade or less, confidence in the present U.S. fixed hard forces as high-confidence, second-strike weapons will be seriously eroded.

At the same time that the Soviets are developing their hard-target kill capability, they are making a massive research effort in strategic ASW, improving their anti-bomber defenses and continuing an active program of SAM, ABM, anti-satellite, and possibly anti-tactical ballistic missile research and development. They have already developed a mobile defense system with an impressive probability of kill against bombers and

cruise missiles, and the system could have an anti-ballistic missile capability because of its phased array radar and high-acceleration missile. Moreover, it could be produced in large numbers, stockpiled, and deployed rapidly on short notice.

Finally, it is necessary to consider the potential impact of the Soviet passive defense program. This long-standing program provides protection for key government and military leaders in hardened shelters, protection of key economic facilities and essential workers through dispersal and hardening programs, and lastly, protection for the majority of the population (through fallout shelters and evacuation).

During the last six months we have become more aware of the magnitude of Soviet civil defense efforts, although major gaps in the intelligence data preclude us from making any confident judgments about effectiveness. What we see, however, suggests to us a continuing Soviet interest in enhancing the Soviet capability to survive a nuclear war, coupled with a steadfastness of purpose which is of concern.

This civil defense capability -- if it continues to grow as we expect -- coupled with high accuracy and more reliable missiles, could adversely affect our ability to implement the U.S. deterrent strategy. Thus, it could provide the Soviets with both a political and a military advantage in the event of a nuclear crisis.

With the initiative, if they develop better military capabilities, the Soviets in a first-strike could conceivably eliminate 95 percent of the fixed U.S. ICBM force, all of the non-alert bombers (and perhaps even some of the alerts), and all of the SLBMs in port. Furthermore, their civil defense capabilities could enable them to protect key leaders, key facilities, and some of their population from a U.S. counterstrike. They would also retain a large residual offensive capability which they could either withhold or use to attack U.S. population and industry. It is at least conceivable, under these conditions, that U.S. second-strike retaliatory forces would have a damage expectancy, not of 40 percent prompt fatalities and 70 percent of Soviet industry destroyed, but 5 percent prompt fatalities and perhaps 30 percent of industry destroyed. Soviet damage expectancy against the United States, by contrast, would remain at more than 50 percent prompt fatalities and as much as 80 percent of industry destroyed. The Soviet society and system could probably survive such an exchange; the United States probably could not. It is clearly not in our interest to allow such an imbalance to evolve.

It is premature to say that such a damage-limiting asymmetry is developing. But the vigor of Soviet efforts in this direction raises a number of issues for the U.S. strategic nuclear posture and programs. The Five-Year Defense Program, as it was presented to the Congress last year, concentrated on two broad efforts.

-- The first entailed an orderly modernization of the Triad by means of the Trident, B-1, and improvements to Minuteman III.

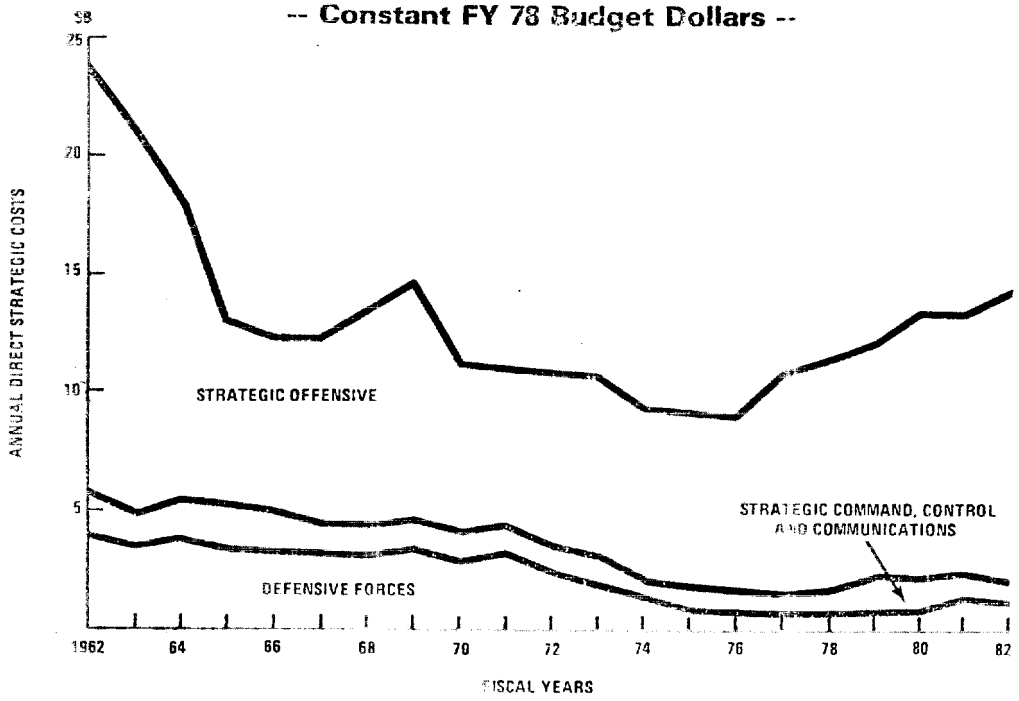
-- The second involved the development, again at a measured pace, of several hedges against the possibility of Soviet efforts to upset the strategic balance. These hedges included work on Missile X (MX) -- an ICBM designed to have more survivable basing options, improved guidance, and better yield-to-weight warheads for ballistic missiles, continued development of ABM systems technology, and a very modest base of civil defense activities which. if necessary, could be built on in the future.

In none of these efforts, as projected in the Five-Year Defense Program, was the effect to reduce the Soviet capability for assured retaliation. After programming the funding profile below, it was possible to see if the Soviets would reciprocate by leaving their population and industry hostage to our capability for assured retaliation.

CHART XIII-1.

STRATEGIC FORCES BUDGET TREND

-- Constant FY 78 Budget Dollars --



Evidence of reciprocity has not been forthcoming. Accordingly, in the FY 1978 budget cycle, it has been necessary to assure ourselves that the Five-Year Defense Program maintains the U.S. strategic nuclear deterrent. We have tried to identify steps that must be taken now so that the United States will be capable of countering potentially destabilizing actions of the USSR. A number of potential vulnerabilities in the U.S. strategic posture are developing. So far, these problems have been anticipated in ongoing research and development programs.

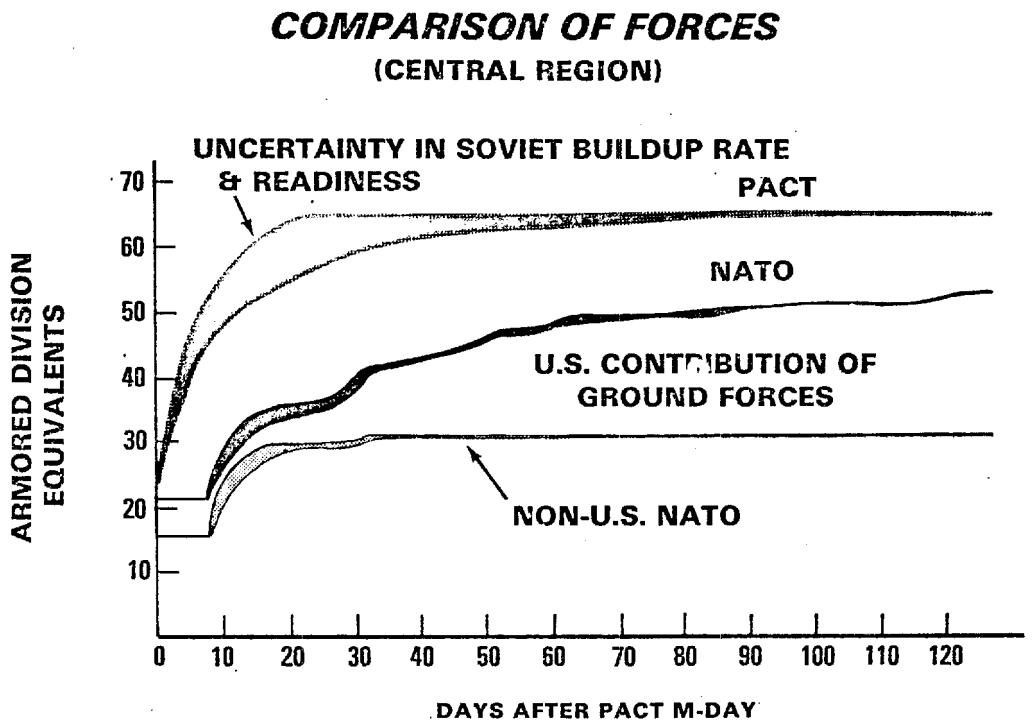
C. The Conventional Balance in Europe

Any assessment of the current balance of conventional power in Central Europe must evaluate NATO's ability to contain an attack with little or no warning as well as a major mobilization and deployment by the Warsaw Pact.

1. The Current Situation

At present, the United States and its allies in NATO have sufficient active forces to maintain an acceptable ratio of defense-to-offense against either type of attack. However, it would be a mistake to conclude that, because of an acceptable ratio, we have high confidence of conducting a successful forward defense in all instances. NATO forces are badly positioned to cope with a short-warning attack by deployed Pact units (one U.S. division is on the wrong side of the Rhine); they would probably be slow in their response to such an attack because of readiness problems; and NATO does not have the streamlined and ready command structure necessary to deal with a short-warning, fast-moving battle, a sufficiently responsive logistics system, or the central reserves necessary to pinch off a major enemy salient.

CHART XIII-2



A full-scale, reinforced attack would require the Warsaw Pact to take as much as a month to deploy the additional 29 divisions and 900 aircraft from the western military districts of the USSR, make ready a full 87-division force, and launch a well-coordinated offensive. Even assuming that NATO would have no more than 23 days in which to respond, the alliance should be able to mobilize a capability sufficient to contain an attack of this magnitude. But whether warning time would be fully utilized, whether reinforcements from the United States would arrive early enough to stem the Pact offensive, and whether the alliance would have sufficient staying power to outlast the Pact, continue to be the most disturbing uncertainties facing NATO.

The U.S. strategic airlift capability remains seriously deficient both in total capacity and in the capacity to move the necessary outsize cargos. Allied and U.S. war reserve stocks remain below what are considered prudent levels for a conflict lasting more than a few weeks. Firepower ratios favor the Pact. The main line of communciations to the front is excessively exposed. NATO could not be sure of winning the initial battle on the frontier.

2. Future Prospects

As to the future, the outcome of a Pact attack on NATO becomes even less certain. The Soviets may well continue to add manpower to their forces in Eastern Europe, and they seem likely to continue increasing and modernizing their firepower, mobility, non-divisional support, and frontal

CHART XIII-3
SUMMARY OF NATO AND WARSAW PACT CAPABILITIES AVAILABLE FOR A CONFLICT IN CENTRAL EUROPE a/
OCTOBER 1976

	NATO			WARSAW PACT		
	U.S. b/	NON-U.S. NATO c/	TOTAL	TOTAL	NON-SOVIET WARSAW PACT d/	SOVIET e/
MAIN BATTLE TANKS	5,000	5,500	10,500	23,200	6,900	16,300
LIGHT TANKS AND ARVS f/	900	1,700	2,600	6,500	800	5,700
MAJOR AT WEAPONS	5,400	5,000	10,400	6,000	2,700	3,300
ARTILLERY PIECES	3,000	2,900	5,900	7,700	2,400	5,300
MULTIPLE ROCKET LHRS	0	200	200	1,600	500	1,100
APCs	10,000	14,400	24,400	13,600	6,900	6,700
HELICOPTERS	4,500	1,750	6,250	1,200	300	900

a/ DOES NOT INCLUDE WAR RESERVES.

b/ LESS FORCES FOR KOREA, AND THOSE FORCES DEPLOYED TO CONTINGENCY

c/ FORCES OF BELGIUM, CANADA, DENMARK, FRANCE, WEST GERMANY, LUXEMBOURG, NETHERLANDS and U.K.

d/ FORCES OF CZECHOSLOVAKIA, EAST GERMANY, AND POLAND.

e/ SOVIET FORCES IN CZECHOSLOVAKIA, EAST GERMANY, POLAND AND THE THREE WESTERN MILITARY DISTRICTS.

f/ ARMORED RECONNAISSANCE VEHICLES

aviation; they will probably improve still further their nuclear and chemical warfare capabilities, which are already formidable. As they do so, NATO deficiencies in artillery, tanks, and multiple rocket launchers will become more serious. If uncorrected, force and firepower ratios could become dangerously unfavorable.

Adjustments in the current Five-Year Defense Program to repair these prospective weaknesses in U.S. forces are required. Our allies must also do more. Contrary to conventional wisdom, NATO may have enough manpower to stem both the short-warning and the full-scale attack, but without prompt remedial action, the alliance may lack the necessary firepower and mobility to enable that manpower to do its job, especially if the current qualitative advantage in fighter-attack aircraft weakens.

D. The Conventional Balance in Northeast Asia

Despite recent events in Korea, the military situation in Northeast Asia is relatively stable. It should remain stable for the foreseeable future, provided the United States maintains an adequate presence in that vital region. The main test of the posture there would come from an attack on South Korea. The North Koreans might launch such an attack without major external assistance. If they did, the South Koreans could have some difficulty containing an attack north of Seoul without the support of some U.S. ground, air, and logistical units. In the unlikely event that the North Koreans received major external assistance, substantial U.S. support would be required to help maintain a forward defense north of Seoul.

The U.S. division in Korea, in addition to its deterrent function, provides both an initial response capability and the base on which deployments could be made in the event of a major attack. The Marine amphibious force in Japan (Okinawa) and theater air forces could provide additional reinforcements in the short-run. Additional air and ground forces, if needed, could be deployed in a timely fashion to contain a large-scale attack, provided, of course, that the needed U.S. forces had not been committed previously to another theater. The forces programmed for a minor contingency help reduce the risk that the United States could not respond in Northeast Asia in the event of a need to withhold substantial forces for Europe.

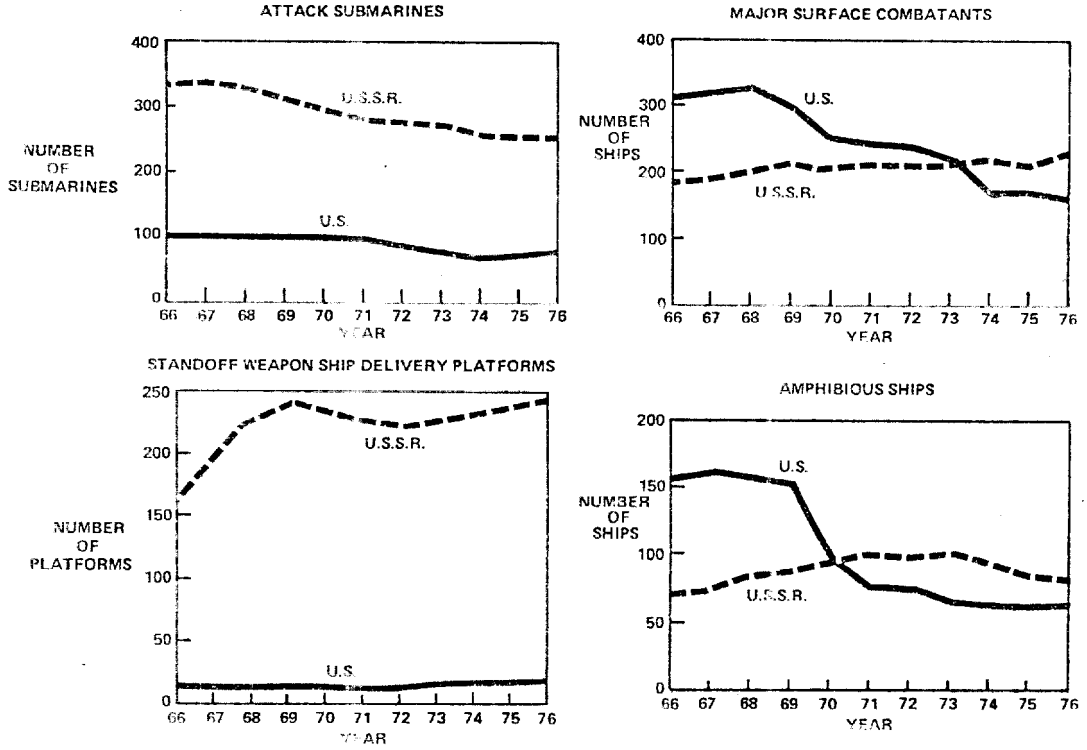
E. The Maritime Balance

The main test of U.S. naval forces comes precisely from the possibility of having to deal with a major contingency in Europe and the threat of one in Northeast Asia, with the accompanying requirement to ensure the sea lines of communication to these two theaters, the Mediterranean, and Persian Gulf. Soviet cruise-missile and torpedo attack submarines represent the principal threat to these sea lanes. However, we must also be increasingly concerned in some waters with Soviet land-based naval aircraft

as the Backfire comes into service, and with the increasingly capable fleet of Soviet surface combatants when it is within firing range.

CHART XIII-4

CHANGES IN NAVAL FORCE LEVELS -- U.S. / U.S.S.R.
(1966 - 1976)



These forces might be able to deny us access to waters adjacent to the USSR and full initial use of the eastern Mediterranean. However, present U.S. naval capabilities, in conjunction with those of our allies, should be able to ensure the delivery of essential tonnage to Europe and Japan during the first three months of a war, and gain virtually unimpeded control of the seas thereafter. Despite this expected outcome, losses of both combatant and merchant tonnage could be heavy, and could jeopardize seriously the U.S. ability to sustain land and tactical air operations in Europe and Asia. Because of this risk, and projected improvements in the Soviet fleet, the time has come to move systematically toward a posture capable of earlier and more decisive sea control.

Seven major conclusions of our recent study of the maritime problem warrant summary in this context.

-- The Soviet maritime threat constitutes a substantial and growing challenge to the United States and its free access to the seas. The main components of that threat are:

- the Soviet submarine fleet;

- the Soviet naval aircraft, including the Backfire, equipped with sophisticated air-to-surface, antiship missiles.

- the Soviet surface fleet equipped with antiship missiles when at firing range;

-- Our allies have a substantial maritime capability which can, and should be considered to augment U.S. capabilities.

-- The rate at which the U.S. Navy is rebuilt should nonetheless be accelerated to meet the Soviet challenge.

-- In the expansion of the Navy, continued emphasis should go to improving the U.S. ASW capability. The Soviet Union has the world's largest submarine fleet; numerically, it is three times larger than ours. U.S. attack submarines are quieter and have a better sonar suite than their Soviet counterparts. The U.S. Mark-48 torpedo is effective against deep, fast-running targets. U.S. air ASW platforms -- the P-3 and S-3 -- have improved sonobuoys and acoustic processors. The Underwater Sound Surveillance System (SOSUS) is being upgraded and expanded. The tactical towed array sonar and the LAMPS helicopter now under development promise to add a new dimension to the ASW capability of the surface fleet. When operational, these systems will provide a major improvement in the local ASW defenses of convoys, underway replenishment groups, and amphibious forces. However, the number of surface combatants presently authorized is not sufficient to provide an adequate capability against the Soviet submarine threat. Equally important, should some cruise missile launching submarines go undetected and launch their missiles, the ability of U.S. naval forces to defend against these missiles is inadequate.

-- This is one dimension of the problem. There is also a major deficiency in the U.S. capability to meet the more general antiship cruise missile threat, especially the high-density threat posed by air-launched missiles. Land-based Soviet naval aircraft operating from fields in the Black Sea area can attack shipping throughout the Mediterranean. From northern fleet bases, the Backfire can range deep into the Atlantic to strike resupply and reinforcement convoys to Europe. In the Pacific, the Backfire can reach areas south of Hawaii, making U.S. resupply of Hawaii, Japan, and Korea increasingly difficult. The introduction of the F-14/Phoenix system has brought a major improvement in the ability of the carriers to defend against this type of attack. There will, nonetheless, be situations where significant numbers of hostile bombers could penetrate the interceptor screen to launch air-to-surface missiles that must be met by the surface-to-air missile systems of the surface forces. Needed capabilities can be acquired with a mix of AEGIS-equipped DDG-47 destroyers, CSGN strike cruisers, and FFG-7 frigates.

-- The major platform for sea control will continue to be the large-deck carrier through the 1990s. However, in view of advancing technology and

the high cost of new carriers, we must find new ways to put aircraft over the world's seas. Through a vigorous Service Life Extension Program (SLEP) for the carriers, the United States can keep a total of 12 large-deck carriers in the force into the 1990s. The extension program will begin in the early 1980s and continue into the 1990s.

The President, in addition, has decided to move toward smaller air-capable ships and V/STOL aircraft because of the large unit investment represented by the NIMITZ class carrier and the prospective technological advances in the threat (particularly Soviet satellite surveillance systems coupled with advanced offensive strike capabilities). In these circumstances, development of less costly, flexible replacements for large-deck carriers must be pursued. That is why the President, last May, proposed budget amendments to accelerate research and development on several new technologies related to V/STOL aircraft, antiship missiles, cruise missiles, and long-range, land-based aircraft.

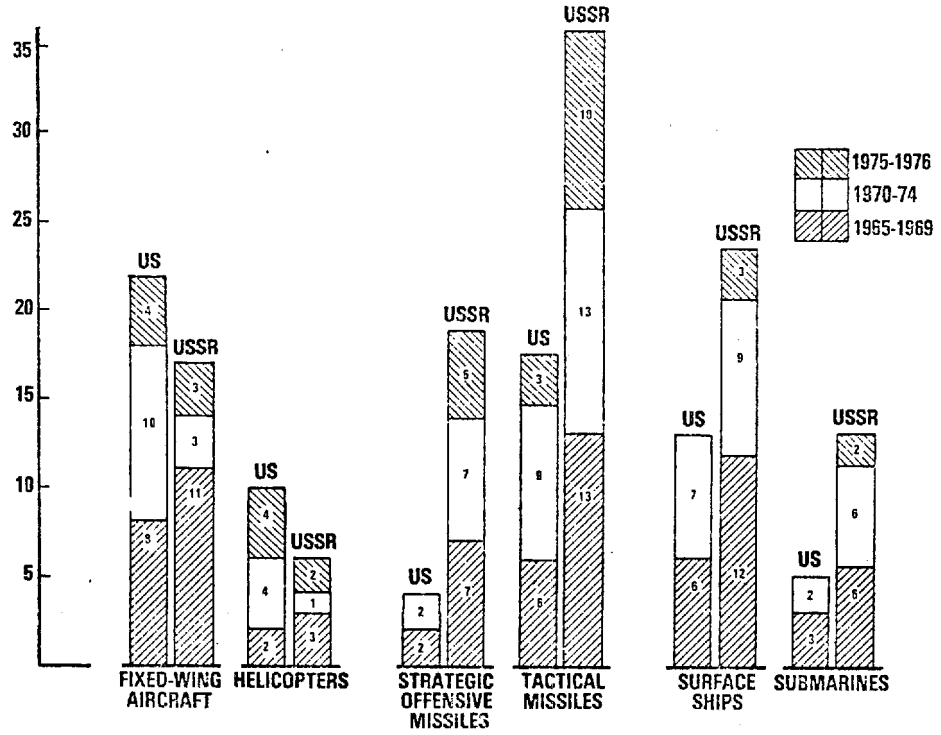
Once combatant ship force levels are established, the increased needs for specialized support and auxiliary ships must be addressed. There is little doubt that the requirement for sustained overseas deployments and operations of the U.S. Fleet will continue, as will the need for modern support ships.

F. The Production Balance

A determined adversary who sees that the United States is intent on sealing off one avenue of potential attack could well look for others. In the past, we have seen precisely this process in the growing Soviet support for "wars of national liberation" as the opportunities for more conventional political and military gain diminished. Now, as Soviet military technologies grow more mature, there may well be yet another search for Western vulnerabilities.

To take the critical case of the military balance in Europe as an example, its stability depends on the U.S. ability to defeat either an attack with little or no warning or a full-scale attack launched by the Pact after a period of intense mobilization and deployment. But there is still another possibility. As the Soviets have expanded their military forces, they have increased their considerable war production base. They are moving into a position to surge their output of war materiel and marry it up with trained manpower (in the form of reservists) to produce, over a period of about 18 months, a substantially expanded combat capability. To the extent the Soviets believed the United States could not compete with such a surge, it could be persuasively argued within their councils that it would pay them to engage in a war production race before embarking on any large-scale adventure.

CHART XIII-5
COMPARISON OF NUMBERS OF NEW SYSTEMS DEVELOPED DURING 1965-1976 BY U.S. AND U.S.S.R.



Given this possibility, two questions should be asked:

-- how many equipped and combat-ready units could the Soviets raise after 18 months of intense mobilization?

-- what response could the United States make during the same time with its current war production base?

As far as can be estimated, the Soviets have enough recently trained reservists so that, within 18 months, they could add an increment to their general purpose forces of about 1.3 million men. At the same time, they could produce around 1,600 additional front-line aircraft, together with enough equipment sets, spares, and other materiel to support the additional forces.

In an equivalent period of time, the United States would be able to call up and ready its Guard and Reserve forces, amounting to one million men. Of this total, 8 Army divisions and about 12 tactical wing equivalents (with over 800 aircraft) would have their equipment, as would a Marine Amphibious Force. The current war production base surged to maximum capacity, could (by diverting deliveries from intended FMS recipients) provide the materiel for another 10 divisions and the aircraft for 4 additional

CHART XIII-6

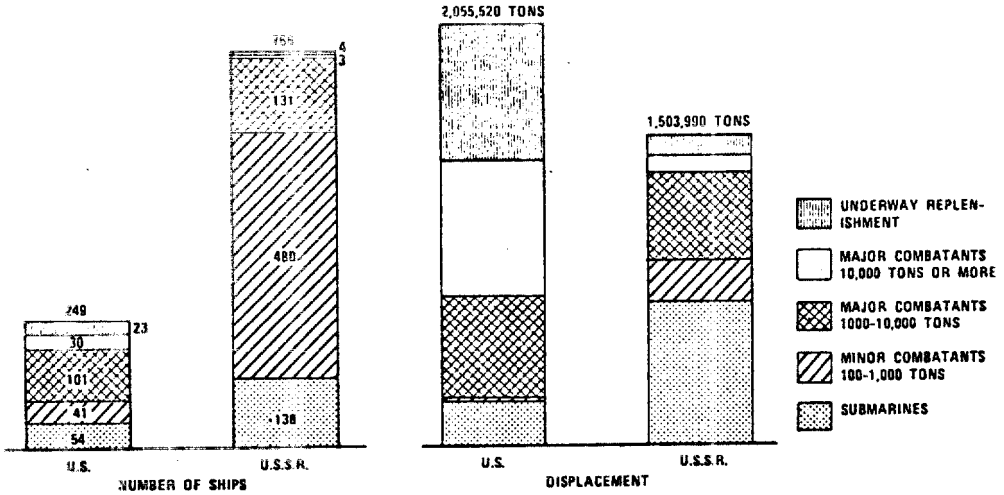
ESTIMATED U.S./USSR RELATIVE PRODUCTION RATES

(1972 - 1976)

	USSR 1972-76 AVG	U.S. 1972-76 AVG	USSR/U.S. RATIO 1972-76
	2,770	469	5.9:1
	4,990	1,555	3.2:1
	1,310	162	8:1
	1,090	573	1.9:1
	666	733	0.8:1
 1/	27,000	27,351	1:1

1/ Ground launched antitank missiles

US/USSR COMBATANT SHIP DELIVERIES 1/
1966-1976



1/ SUPPORT SHIPS OTHER THAN THOSE CAPABLE OF UNDERWAY REPLENISHMENT ARE NOT INCLUDED.

wings. The total U.S. force, including both high-priority Guard and Reserve and essentially new units, would comprise about 3.1 million men and 5,500 aircraft. By the standard tests of force and firepower ratios, this new force could probably neutralize the increment to the threat added by the Soviets over a comparable period of time.

Too much should not be made of this comparison at the present time. It is worth noting, however, that if such an assessment is even reasonably accurate, the main constraint on the United States, ironically enough, is not trained manpower but military equipment and supplies. The greatest industrial nation in the world ought to be in a better position to deal with such a contingency.

G. The Basic Choice

A little more than forty years ago, Winston Churchill had these somber words to say about his country:

"I have watched this famous island descending incontinently, fecklessly, the stairway which leads to a dark gulf. It is a fine broad stairway at the beginning, but after a bit the carpet ends. A little farther on there are only flagstones, and a little farther on still these break beneath your feet."

The United States must not follow that path. We have been born to freedom; we must be wise enough, purposeful enough, and strong enough to preserve that freedom.

XIV. CONCLUSIONS

Assessments of the international military situation and of the U.S. contribution to deterrence, make it clear that the United States faces a number of difficult but manageable security problems in the years ahead.

We have not entered a static phase of history; ours is a dynamic age. In part, the momentum comes from the revolution in technology, the breakup of old empires, and the frictions of growing economic interdependence. Global tensions understandably exist.

We must not mistake such frictions for the main problem. The principal cause of international instability lies elsewhere. It lies in the Soviet Union -- with its combination of beliefs and military power -- and there is no pretending to the contrary.

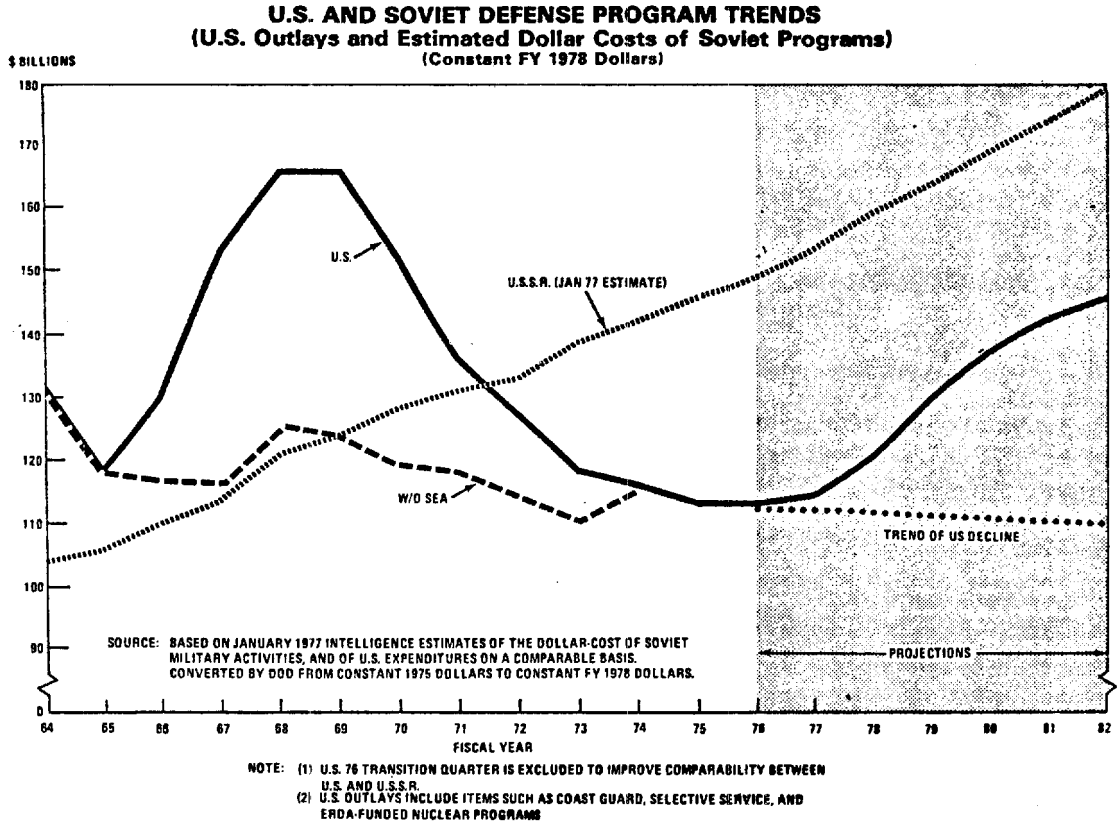
A. The Problem

The United States seeks peaceful relations with the Soviet Union. The United States has continued, cautiously, to believe that the current Soviet leaders will probably see it in their interest to seek hegemony by peaceful means, and avoid a direct conflict with the United States. But the Soviets understand violence well, and have the connoisseur's taste for the psychological and political uses of military power. It should come as no surprise, therefore, that they are in deadly earnest about their military programs, that stability -- as we have defined it -- apparently concerns them less than it does us, that they have designed their forces -- nuclear as well as non-nuclear -- for warfighting purposes, and that they proceed toward their force planning objectives with persistence. Self-restraint in the expectation that we will follow their example has not been a part of their doctrine or their pattern; neither has reciprocity on their part for restraint on ours. Western weakness and irresolution are not examples the Soviets are likely to emulate, but an opportunity to seize. If international peace and stability are to be preserved, the United States must cope with these predispositions rather than expect the Soviets suddenly and uncharacteristically to adopt ours.

B. Arresting Adverse Trends

In FY 1977, the United States has set in motion programs intended to arrest the decline in U.S. capabilities relative to those of the USSR. The task now is to stay on that path, preserve the stability of the main balances of power, and ensure the future adequacy of the U.S. defense posture, despite the magnitude and velocity of Soviet military programs. To do so, the level of the Five-Year Defense Program must be raised. To do less would be able to take unnecessary risks with our nation's future.

CHART XIV-1



C. The Conditions of Security

Deterrence and stability remain the prerequisites of security and peace in this last quarter of the 20th century. Our country's ability to contribute to deterrence and stability must be foremost in considering the design of the U.S. defense posture. Our three major capabilities -- strategic nuclear, theater nuclear, and conventional -- must be maintained. Each must have the responsiveness, flexibility, and effectiveness necessary to permit the appropriate action in support of U.S. security objectives. Only under those conditions can it be said that we have a credible deterrent.

1. The Strategic Nuclear Posture

The strategic nuclear posture must satisfy six requirements:

-- It must be able to survive a large-scale surprise attack.

-- It must be able, if necessary, and be seen as able, to cause a high level of destruction in the mission of assured retaliation.

-- It must be designed to implement options short of full-scale retaliation so as to be able to avoid unnecessary escalation.

-- It must contain programmatic and R&D hedges against an effort by the Soviets to create a strategic asymmetry unfavorable to the United States.

-- It must be, and be seen as, equivalent to the Soviet strategic posture in force effectiveness.

-- And it must be tailored so as to comply with existing arms control agreements and encourage equitable agreements in the future.

2. The Theater Nuclear Posture

We can be no less stringent in the demands on the theater nuclear forces. They too must be capable of riding out a surprise attack in sufficient numbers to execute a variety of theater-related plans. They too must be designed to minimize unnecessary collateral damage. They too must permit appropriate responses.

3. The Conventional Posture

The United States must not be in the position of having to cross the nuclear threshold for lack of other choices. Nuclear forces are an inadequate deterrent to many contingencies. Accordingly, the U.S. conventional posture continues to be essential to deterrence, stability, and security. We must have the conventional capability, in conjunction with our allies, to maintain a forward defense in Europe against a Warsaw Pact attack, whether after little or no warning or after a period of mobilization and deployment. This capability must also be sufficient to allow for a prior U.S. response to a minor contingency. We can and must continue to contribute to peace and stability in the Western Pacific as well as Europe and to the deterrence of sudden attacks in these two vital regions.

4. Other Capabilities

The U.S. command-control-communications network is indispensable to our entire defense posture; it must have the survivability, reliability, capacity, and security to implement the decisions of the National Command Authorities.

To complement U.S. active forces and their reserve components, security assistance programs are necessary to help strategically located friends, maintain access to necessary facilities overseas, substitute where possible for U.S. forces, and stabilize regional balances.

Both U.S. and allied forces need to be combat-ready and capable of sustained operations. Without modern equipment, adequate supplies, adequate maintenance, and realistic training, their size and composition will not avail. They must be able, and be seen as able, to fight. Strategic mobility is essential to their flexibility and combat effectiveness.

To support this posture, the United States requires a solid program of research and development, and a production base sufficient to supply current needs and permit a surge capability as necessary.

D. Major Objectives

The programmed force structure, with the exception of the Navy's general purpose forces, should meet U.S. security needs insofar as they can now be anticipated. U.S. requirements can be met in the years ahead, given the present situation, at a military personnel level of about 2 million men and women. However, if we are to have reasonable confidence of meeting the growing Soviet military challenge as we now assess it, there are seven major requirements to meet during the course of the new Five-Year Defense Program. It will be necessary to:

1. Strengthen U.S. strategic nuclear capabilities and accelerate those development programs necessary to balance any efforts by the Soviets to develop major offensive and defensive damage-limiting capabilities.

2. Increase the firepower, armor, air defenses, and tactical mobility of U.S. land forces to meet the growing Soviet emphasis on surprise, maneuver, and concentrated fire.

3. Accelerate the equipment and modernization of the 26-wing tactical air force, to improve deterrence of a Warsaw Pact attack through the ability to defeat a Soviet air offensive, disrupt enemy lines of communication into the battlefield, and disperse armor-heavy forces.

4. Expand U.S. strategic airlift capacity to meet long-range mobility requirements, and preposition additional division sets of equipment in Europe to compensate, in part, for the refusal by Congress to support the more cost-effective Civil Reserve Air Fleet (CRAF) modifications.

5. Accelerate progress toward a modern Navy based on 12 carrier task forces and a two-ocean ASW capability to provide the necessary sea control, power projection, and peacetime presence, in the face of the growing worldwide reach of the Soviet maritime capability.

6. Flesh out U.S. division sets and war reserve stocks in Europe and reduce major maintenance and overhaul backlogs so that scarce active capabilities are ready and in a position to sustain combat.

7. Increase investment in research, development, test, and evaluation, (RDT&E), procurement, and the production base in recognition that, as Soviet technology matures, numbers of systems will be as crucial as their sophistication.

E. The Costs

These are the requirements. Meeting them will necessitate a higher Five-Year Defense Program than was presented last year. Total costs of the additional effort over the five-year planning period will amount to approximately $15 billion (in FY 1978 dollars). The benefits of continued confidence in the U.S. security position will be worth the cost.

F. The Task

More than 30 years have passed since the end of World War II. This modest record of relative peace nonetheless surpasses the 20-year interval between the first and second of this century's great wars. That we have come so far cannot be attributed to restraint and cooperation by others. Technology, and some luck, have undoubtedly played their part. Above all, however, the steadfastness and strength of the United States have brought us this still uneasy but priceless peace.

Friend and foe will judge our determination by our actions. With support for the programs outlined here, and described in detail in Section II of this Report, it will be clear to all that we value our freedom and our independence -- and intend to preserve them for those who follow.

SECTION II

I. THE NUCLEAR FORCES

A. Strategic Forces

1. Strategic Offensive Forces and Programs

a. The Basis for the Program

U.S. force planning continues to emphasize programs to ensure a fully credible second-strike strategic deterrent. As indicated in Section I, assessments reveal a need for systems with increased military effectiveness and survivability in order to:

-- counter projected improvements in Soviet offensive systems and damage-limiting capabilities;

-- improve survivability under a potentially heavier Soviet attack;

-- accommodate reasonable growth projections in the number of Soviet targets; and

-- meet the needs of our targeting doctrine.

Force planning under current policy is constrained by the numerical limitations of the Strategic Arms Limitation Talks (SALT), and in particular, those limitations anticipated in light of the Vladivostok Accord. Current U.S. force planning through FY 1986 is depicted in Chart I-1 on the next page, and is consistent with these limitations. Similarly, projections of Soviet force capabilities assume that they, too, will be constrained by the proposed SALT limits, although the USSR has the capacity to exceed these limits. U.S. forces programmed through FY 1982 are shown in Table 2 of the appendix.

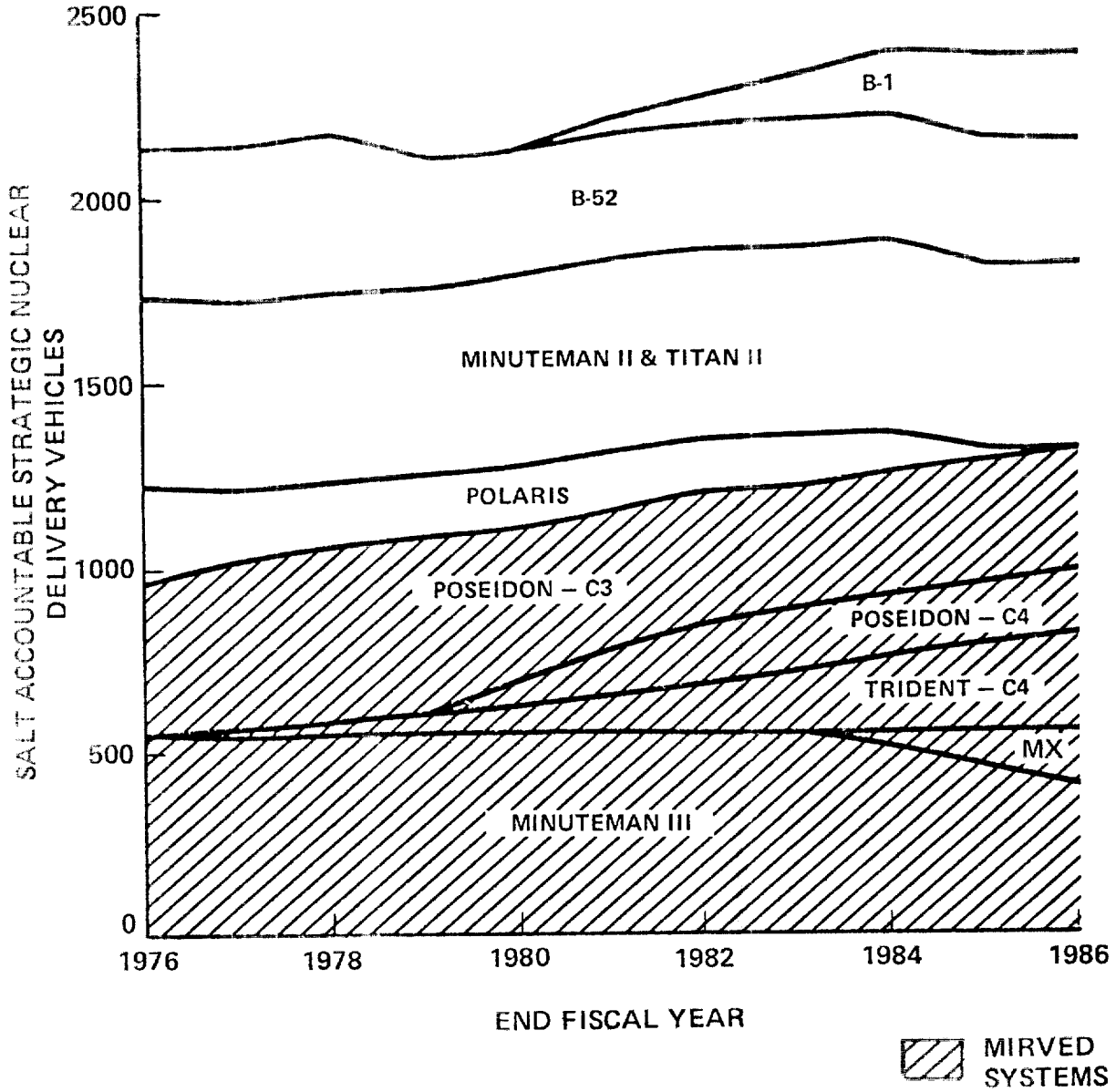
Given the objective of deterrence, which relies most heavily on the military effectiveness of our retaliatory forces under a variety of possible circumstances, there are a number of factors which must be considered in shaping our forces. We must:

-- have strong confidence in the ability of U.S. strategic forces, individually and collectively, to absorb and survive a large scale, enemy first strike and still mount a second strike in retaliation.

-- be alert to the age of U.S. strategic forces, taking timely steps to enhance the effectiveness of aging systems as Soviet modernization degrades their capabilities, and to replace obsolete systems when cost and effectiveness considerations dictate. Further, U.S. planning must be sensitive to the pace of future deployments to prevent, to the extent possible, future block obsolescence of strategic force elements.

CHART I-1

U.S. STRATEGIC FORCE LEVELS



-- continue to implement those programs designed to provide the National Command Authorities with a range of strategic options so that we have the capability to carry out responses reasonably appropriate to the level of provocation.

-- continue to plan U.S. forces in such a way that individual or collective force characteristics are not seen as inferior to those of the Soviet force and, to the extent possible, are not seen as destablilizing.

I am convinced that a strong deterrent posture requires a Triad of strategic nuclear forces. The advantages of force diversification and the developments in Soviet forces demonstrate that the mutually supporting characteristics unique to the Triad should continue to make it the cornerstone of U.S. force planning. I further believe that, despite the costs of the Triad, its forces compare favorably from a cost-effectiveness standpoint with less diversified force mixes, including those which would abandon reliance on a bomber force or on the ICBM force.

Survivability

The future survivability of the U.S. silo-based Minuteman system, and indeed of any targetable system, is being endangered as a result of Soviet momentum in both the quality and quantity of their ICBM deployments. In particular, we are concerned about the potential counter-silo capability inherent in a large number of MIRVed warheads which possess high yield and improved accuracy. Our calculations indicate that by the early 1980s there could be a substantial reduction in the number of surviving U.S. ICBMs should the Soviets apply sufficient numbers of their forces against the U.S. ICBM force in a first strike.

In the near term, we are enhancing the survivability of the ICBM force by upgrading the hardness of some Minuteman silos. When this program is complete, much of the Minuteman force will be capable of sustaining high static overpressures, ground shock, electromagnetic pulse, and radiation without damage to the missile or supporting electronic equipment. In the longer term, however, I share the reservations expressed in the Conference Report on the FY 1977 Budget Authorizations regarding the survivability of a silo-based replacement for the Minuteman force. Consequently, the program we are presenting this year pursues into engineering development the option described last year, that of deploying a new, high yield MIRVed ICBM in a mobile basing mode.

The SLBM force, when deployed at sea, will continue for the foreseeable future to be the least vulnerable component of the strategic Triad. However, we cannot ignore the heavy emphasis which the Soviets are placing on anti-submarine warfare. For this reason, continued high prelaunch survivability is a keystone of the Trident program and is enhanced both by the increased operating area made possible by the Trident I missile's greater range and by the acoustic silencing measures being built into the Trident submarine. Operation of the initial Trident

submarines in the Pacific will further complicate Soviet ASW efforts by significantly increasing our current two ocean SLBM deployment patterns. Further, the plan is to continue the SSBN Security Program in order to identify and explore those technologies which could threaten our SSBNs and to recommend effective countermeasures. With regard to SLBM penetration-to-target capability, we propose to sustain a low level advanced development effort on the successful MK-500 Evader reentry vehicle to ensure its availability in a timely manner should the Soviets abrogate the ABM treaty and pose a significant ABM threat.

The most severe threat to the prelaunch survivability of the strategic bomber force would be a coordinated SLBM attack employing depressed trajectories to reduce available bomber reaction time. While there is no evidence that the Soviets have tested such a capability, they are improving the effectiveness of their SLBM force and increasing its size. In addition to enhancing bomber offensive capabilities, the B-1, which is now in production, will be capable of responding to this threat by providing aircraft with a shorter reaction time, faster escape speed, and greater resistance to nuclear effects. Additionally, because of its smaller size and shorter takeoff distance, the B-1 is capable of operating from a larger number of dispersed bases, thereby increasing the targeting problems of any would-be attacker.

We are addressing the projected increase in Soviet air defense capabilities in several ways. The B-1 has been specifically designed to be as insensitive to the air defense threat as is technologically possible. In accomplishing with high confidence the bomber force mission of penetration to the target and weapons delivery, it is the most cost-effective alternative of a wide variety of alternatives that were examined. In addition, while we project that the penetration effectiveness of the B-52 force will decline significantly during the mid-1980s because of the increasing Soviet air defense threat, analysis has shown that we can maintain the effectiveness of a portion of the B-52 force by employing them as platforms for air-launched cruise missiles (ALCMs). Although cruise missiles, which are designed using present technology, are not projected to be effective against targets defended by sophisticated low altitude SAMs, the B-1 equipped with Short Range Attack Missiles (SRAM) is capable of high confidence destruction of these targets.

Force Modernization

The MX program, which we are proposing to accelerate somewhat, is at the heart of the U.S. ICBM modernization plan. While the replacement of aging components of the current force is in part tied to the pace and content of the MX program, near term improvements of existing systems are also necessary because of Soviet actions and present SALT limits. Several Minuteman options are under study, including a new warhead for Minuteman II, for which initial funding is proposed next year.

The original urgency of the SSBN program and the resulting high annual SSBN building rate during the late 1950s and early 1960s now causes the most severe block obsolescence problem among the strategic forces. Trident procurement, which we propose to continue, represents an orderly and affordable replacement program for the current SSBNs. We recognize, however, that if we have to phase out Polaris/Poseidon SSBNs after 20 or even 25 years of service, even with continued Trident acquisition, we will suffer a substantial reduction of SLBM launcher capability in the late 1980s and early 1990s. The Trident II missile, for which we propose the initiation of a concept formulation effort, could partially offset this reduction since it could more fully utilize the throw-weight potential inherent in each Trident submarine launcher tube and could enhance SLBM capability across the entire target spectrum through accuracy improvements and payload flexibility.

Because of the increasing age of the bomber force, plans are to deploy the B-1 bomber and to lengthen the effective service life of some B-52s through aircraft modification and configuration with cruise missiles. This will alleviate this problem significantly.

Flexible Response

Positive command and control, high accuracy and timely weapon delivery make the ICBM force an attractive candidate for a more flexible range of response options to the National Command Authorities (NCA). The Command Data Buffer System now permits, beyond its prestored capability, retargeting of a single Minuteman III missile in 25 minutes, and, when fully operational in 1977, will permit retargeting of the entire force in less than 10 hours. We propose a further enhancement of this capability by developing C^3 improvements, primarily a missile status uplink to and retargeting capability from the Airborne Launch Control System, which will be installed in a number of U.S. airborne command post aircraft. Finally, we continue to propose the incorporation of software improvements in the Minuteman III guidance; these will enhance both the effectiveness of the system and the confidence with which we can employ it over a wide range of attack options.

Owing to its characteristics, such as short time of flight, existing rapid retargeting capability, and non-CONUS launch areas, the present SLBM force provides the NCA with several response options. We are pursuing improvements in SLBM accuracy and SLBM C^3 which could provide even greater effectiveness and flexibility in the execution of various response options. The Trident II concept formulation effort will also examine potential SLBM contributions in this regard.

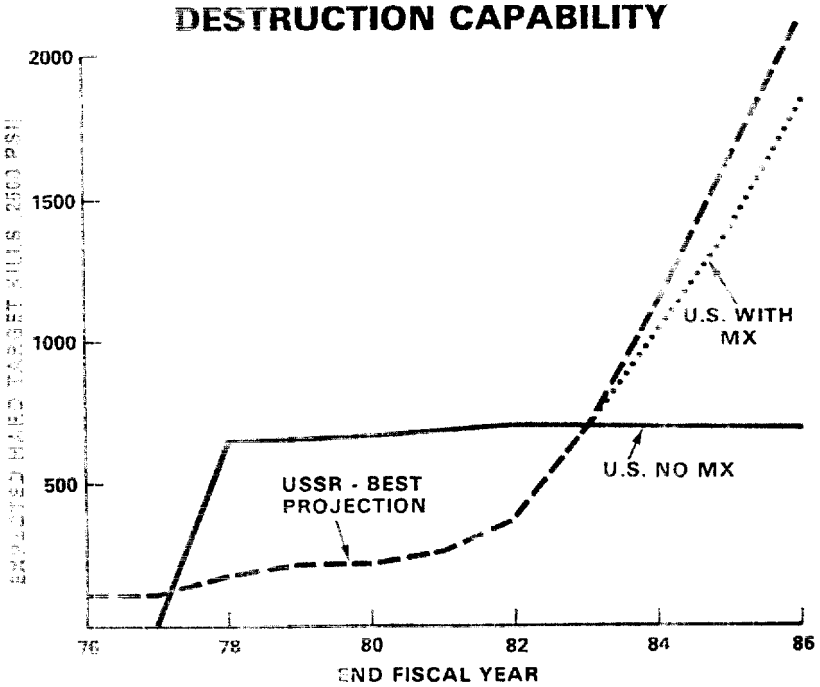
An effective bomber force provides the NCA with the only strategic delivery system which can be launched on warning and recalled. In addition it is the only strategic system which can be retargeted while it is airborne. Moreover, it provides the flexibility of a multi-purpose system.

Strategic Equivalence

At present there is "rough equivalence" in the strategic balance. Consistent with this assessment is the fact that neither U.S. nor Soviet ICBMs today possess a significant kill capability against very hard (2500 psi) targets. As shown in Chart I-2, projected near term Soviet deployments of such capability are more than matched by planned improvements to Minuteman III guidance. However, a significant and potentially destabilizing asymmetry in missile hard target kill capability is projected to develop in the mid-1980s. Given these facts, the Soviet ICBMs could threaten U.S. ICBMs to an unacceptable degree, and to a sufficient extent that there would be persuasive arguments for adopting a "launch on warning" policy, absent the availability of less unappealing alternatives. Our plans for the deployment of a mobile MX and development of Trident II give us the potential to match the Soviets in hard target kill capability, to minimize potential instabilities stemming from this Soviet capability, and most important, to encourage the Soviets to pursue a less destabilizing ICBM deployment pattern in later years.

CHART I-2

TIME URGENT HARD TARGET DESTRUCTION CAPABILITY



NOTE: ONLY MISSILE SYSTEMS WITH A HIGH PROBABILITY OF HARD TARGET KILL (0.7 OR BETTER) ARE INCLUDED.

b. Description of the Programs

U.S. strategic programs are familiar to the Congress. Accordingly the emphasis here is on new program developments and those programs reaching significant milestones in the coming year. Acquisition costs for all major strategic programs are shown in Table I-1.

(1) ICBMs

This past year has marked an active period in assessing the future role of the ICBM force. We have concluded that continued support of a Triad of forces and of a strong ICBM element within the Triad is clearly the best way to meet the conditions of deterrence.

Minuteman

Last year, the assessment of the Soviet ICBM program and the fact that a SALT II agreement had not been completed, led us to amend our original budget request; the funds were to protect the option to continue production of 60 additional Minuteman III missiles in FY 1977. Following favorable Congressional action on this request, the President directed that funds be released for this purpose. While the eventual disposition of these missiles has not been determined, we have decided not to deploy additional Minuteman III missiles to replace Minuteman II missiles at this time. Also, we have not included funding in the current request for continuation of Minuteman III production into FY 1978 because of plans for MX.

The upgrade of Minuteman III silos, including installation of the Command Data Buffer System, is scheduled for completion during FY 1977. To enhance the flexibility of the Minuteman force, and the survivability of the launch control capability, we are initiating development of a Phase III Airborne Launch Control System (ALCS), with initial operational capability planned for FY 1982. The system will have the capability to provide Minuteman status information to the ALCS from the silo and to retarget Minuteman III missiles from the ALCS. This capability is not available today. Consequently, should the Launch Control Centers be destroyed in an attack, the more survivable ALCS would not have to launch "in the blind" without knowledge of missile availability or control over missile targeting. Some $3 million is being requested in FY 1978 for development of the ground portion of the ALCS Phase III system, including the system integration effort and development of an uplink antenna. Funding for development of aircraft modifications is being requested as part of the Post Attack Command and Control System (PACCS) funding.

Improved Minuteman

The FY 1978 budget request continues production funding for the MK-12A reentry vehicle. Since we last described this program to you, the ERDA has certified the results of full yield testing of MK-12A warhead candidates.

TABLE I-1

Acquisition Costs of Major Strategic Forces Modernization and Improvement Programs 1/
(Dollars in Millions)

	FY 1976 Actual Funding	Trans. Period Actual Funding 2/	FY 1977 Planned Funding	FY 1978 Prop'd Funding	FY 1979 Prop'd for Authorization
Strategic Offense					
Minuteman and Improvements (Silo Upgrade, Command Data Buffer, MK-12A Warhead, NS-20 Guidance Refinements)	804	105	770	338	146
Advanced ICBM Technology, Including MX	36	13	69	214	1533
Development of Advanced Ballistic Reentry Systems and Technology (ABRES)	91	24	106	109	125
Conversion of SSBNs to Poseidon configuration, Modification of Poseidon Missiles	91	7	42	26	6
Acquisition of Trident Submarines and Missiles and MK500 RV (Trident II not included in total)	1,931	609	2,812	3,626	2,339
Development of Trident II Missile	-	-	-	5	110
SSBN Subsystem Technology Development	-	-	2	3	11
Improved Accuracy Program	39	14	95	110	98
Acquisition of New Strategic Bomber, B-1	661	152	1,556	2,162	2,915
Development of the Air-Launched and Submarine/Land-Launched Versions of the Cruise Missile	143	50	199	358	229

TABLE I-1
Acquisition Costs of Major Strategic Forces Modernization and Improvement Programs 1/
(Dollars in Millions)

	FY 1976 Actual Funding	Trans. Period Actual Funding 2/	FY 1977 Planned Funding	FY 1978 Prop'd Funding	FY 1979 Prop'd for Authorization
Strategic Defense					
Acquisition of a Follow-on Interceptor	-	-	-	26	81
Development and Procurement of the Joint Surveillance System	14	5	6	15	153
Continued Development of the Over-the-Horizon (OTH) Backscatter Radar	9	7	19	2	5
Development of Enhanced Distant Early Warning Line Radars	-	-	-	1	5
Development of Ballistic Missile Defense Advanced Technology	97	25	103	107	123
Development of Systems Technology (formerly Site Defense)	100	25	100	108	122
Continued Improvements in the Defense Support Program	65	9	60	125	230
Modernization of BMEWS (Ballistic Missile Early Warning System)	1	3	6	15	14
Development and Acquisition of the SLBM Phased Array Radar Warning System	46	2	13	7	4
Development and Improved Space Defense Systems	22	7	61	126	265
Civil Defense	80	27	84	90	123

TABLE I-1
Acquisition Costs of Major Strategic Forces Modernization and Improvement Programs 1/
(Dollars in Millions)

	FY 1976 Actual Funding	Trans. Period Actual Funding 2/	FY 1977 Planned Funding	FY 1978 Prop'd Funding	FY 1979 Prop'd for Authorization
Command and Control					
Development and Procurement of Advanced Airborne Command Post (AABNCP)	42	8	89	66	175
Development and Procurement of Satellite Communications (AFSATCOM I and II)	39	6	34	38	80
Development of ELF Communications System	14	4	15	24	41
Acquisition and Modification of Tacamo aircraft	30	5	18	32	19
Hardening of Alternate National Military Command Center (ANMCC)	-	-	-	7	56
Research on Deep Underground Command Center (DUCC)	-	-	-	3	7

1/ Includes costs of RDT&E, procurement of the system and initial spares, and directly related military construction; the Civil Defense funding shown is the entire Civil Defense budget.
2/ July 1 to September 30, 1976.

We have selected a warhead design which provides 95 percent of our original yield objective for the MK-12A and has a yield about twice as powerful as the yield of the MK-12. However, because the warhead is heavier than originally planned, additional RDT&E will be required. An additional $10 million, or a total of $25 million RDT&E, is being requested in FY 1978 and $22 million in FY 1979 for this purpose. The additional development effort will result in a 12 month delay in initial operational capability (IOC), to February 1980. Current plans call for replacing MK-12 warheads on 300 Minuteman III missiles with MK-12A warheads by the end of FY 1983. The NS-20 guidance software improvements are scheduled to be incorporated during FY 1978 on all Minuteman III missiles.

Advanced ICBM Technology and MX

The most significant strategic initiative being proposed in this year's budget request is an acceleration of the MX ICBM program. The decision to accelerate development of a new, larger and more effective ICBM was based on the following considerations:

-- Force Survivability and Effectiveness. The ICBM is the only leg of the Triad which currently possesses a prompt, high confidence, counter-attack capability against a broad spectrum of targets, both soft and hard. The fixed-silo ICBM is, however, becoming more vulnerable. Consequently, it is necessary to provide in roughly the same time frame the option to deploy an ICBM that is highly accurate and itself is deployed in a basing mode relatively less sensitive to the Soviet hard target threat.

-- Equivalence. Today we find that there is a "rough equivalence" between U.S. and Soviet strategic forces. However, projections of Soviet ICBM capability indicate that a serious imbalance in missile hard target kill capability could develop by the mid-1980s if we fail to improve U.S. forces. This asymmetry may, in the future, cause the Soviet Union to believe that there is an advantage to be gained by a first strike against the U.S., and particularly its ICBM forces. Deployment of the MX in a more survivable mode would prevent the development of such an asymmetry, and might serve as an incentive to the Soviets to slow their momentum in deploying new ICBMs and seek mutual reductions in strategic offensive force levels.

The MX program will provide the option to deploy a larger throw-weight, highly accurate, MIRVed ICBM in a survivable basing mode in early FY 1984. The basic missile design is derived from a broad technology base achieved through guidance and propulsion activities conducted in the advanced ICBM technology program element. In addition, both the ABRES and Minuteman programs have contributed to MX in the areas of reentry vehicle technology and improved guidance. The primary basing concepts, at this time, consist of concealing mobile missiles in either underground trenches or hardened shelters. The objective is to provide missile basing at a large number of aim points, each of which must be assumed to be equally likely to contain a missile.

We are requesting $49 million in FY 1978 to continue the advanced ICBM technology effort in support of MX advanced development -- particularly emphasizing basing modes -- and $245 million to initiate MX engineering development. A major portion of the engineering development funding will be used to start the design and initial fabrication efforts on the three propulsion stages, the post boost vehicle, and the guidance and control sub-assemblies.

Advanced Ballistic Reentry Systems (ABRES)

The U.S. retains a significant lead in reentry system technologies as a result of the ABRES program. The plan is to continue this effort at about the same funding level and pace as last year. Besides the continued development of penetration aids for the MK-500 Evader reentry vehicle, additional attention will be directed to the development of the technology for advanced reentry vehicles for MX, and eventually for Trident II.

(2) SLBMs

Sea-based strategic weapons systems provide the greatest assurance into the foreseeable future of a survivable retaliatory force. For this reason it is necessary to fund adequately SLBM and SSBN support programs, across a broad range, from the support of basic research to improved operating procedures. Specifically, we are requesting funding to continue investigations into the feasibility of improving the accuracy of SLBM weapons, to procure two Trident submarines, to continue funding the program to backfit the long-range Trident I missile into Poseidon SSBNs, and to conduct conceptual studies for a follow-on missile for the Trident submarine.

Poseidon

Of the 31 planned Polaris to Poseidon conversions 28 have been completed, but only 26 are currently deployed. Of the five not yet deployed, one is undergoing pre-overhaul operation, another has reentered the shipyard for its first post-conversion overhaul, and the remaining three are still in conversion. Deployment of the 31st boat is expected early in FY 1978.

To date 41 Poseidon Modification Program (POMP) missiles, selected at random from Poseidon submarines returning from patrol, have been flight tested with a success rate of 76 percent. Further tests will be conducted in 1977 to provide data for a more statistically sound evaluation of reliability.

Trident

The Trident building program continues with two submarines funded at $1,778 million in the FY 1978 budget and a request for authorization for one submarine in FY 1979.

The Polaris/Poseidon fleet is aging and its ultimate replacement by a Trident force will assure we retain a highly survivable, sea-based deterrent force far into the future. It is believed that Polaris/Poseidon submarines can be operated safely and effectively through their 20th year of service and possibly longer. However, retirement of Polaris/Poseidon at 20, or even 25 years, coupled with the current Trident building rate, would result in a reduction in the present number of SLBM launch tubes in the late 1980s and early 1990s, since the Polaris/Poseidon force was built at a much faster rate than that planned for Trident.

Four Trident submarines are now under contract. The Department is continuing to plan for an FY 1979 initial operational capability (IOC); however, delays in the first Trident missile development flight tests and a delay in first ship delivery have moved the IOC to September 1979. The plan to backfit Trident I (C-4) missiles into a deployed force of 10 Poseidon SSBNs will begin in FY 1980 and be completed in FY 1984. The backfit of the Trident I missile is to be accomplished both alongside a tender during an extended refit period and during regularly scheduled shipyard overhauls. The Trident Backfit Program can be expanded to more than 10 Poseidon SSBNs if the Soviet ASW threat increases significantly in the outyears.

Studies are in progress concerning East Coast basing for Trident SSBNs and for Poseidon SSBNs backfitted with the Trident I missile. Owing to the 1976 Treaty of Friendship and Cooperation with Spain, which requires the relocation of our Rota-based SSBNs by July 1979, coupled with the backfit of Trident I missiles into selected Poseidon submarines, new basing requirements are imposed upon us. The submarine base under construction at Bangor, Washington as currently programmed can support only ten Trident submarines. Consequently, as the program proceeds beyond ten submarines, a decision must be made either to expand the Bangor facility or to construct Trident submarine support facilities on the East Coast. The military ocean Terminal at Kings Bay, Georgia, currently maintained in an inactive status by the Army has been identified as the preferred location for possible construction of an alternative East Coast refit site.

The MK-500 Evader reentry vehicle concept, which is being developed as a hedge against future ABM threats, has been successfully proved in flight tests on Minuteman I boosters and will be flight tested for compatibility with Trident I missiles during FY 1978. It should be noted that the MK-500 Evader will not have terminal guidance, that is, a target-seeking capability. Therefore, owing to its in-flight maneuvers, it will be inherently less accurate than its ballistic reentry vehicle counterpart. The option to place this reentry vehicle into engineering development will be maintained should we need to counter new Soviet initiatives in ABM deployment, but no such effort is now planned.

Trident II Missile

We are again this year requesting a modest level of funding for initiation of a Trident II concept formulation effort. In addition to providing a hedge against uncertainties in the MX development program, Trident II, with a capability against the full spectrum of Soviet targets, is a required option if we are to have a balanced Triad capability. This new missile will effectively utilize the full volume of the Trident SSBN missile tube and, with potential accuracy improvements resulting from the Improved Accuracy Program, could provide a reentry vehicle which has an excellent CEP, but is not targetable and could not be put in jeopardy by the Soviet ICBM force. In addition, Trident II's increased payload at longer ranges would blunt the threat of Soviet ASW improvements by allowing Trident SSBNs to operate over a wider range without sacrificing payload. Design studies commencing in FY 1978 would provide a capability to deploy Trident II in the late 1980s.

Improved Accuracy Program (IAP)

The objective of this technology assessment program is to develop the ability to predict with confidence the costs and schedules associated with achieving militarily significant accuracy improvements in future submarine launched missile systems. Concepts generated will provide information for an engineering development program; however, no tactical hardware is to be produced. The end product will determine the feasibility and associated costs of a hard target option for Trident II and the potential for an incremental accuracy improvement in Trident I. The major elements of this program are instrumentation and collection of data on missile firings using the Global Positioning Satellite System, error analysis and modeling, research into improved guidance components including testing of improved accelerometers and stellar sensors, and an assessment of terminal sensor technology.

SSBN Subsystem Technology

The Trident submarine is believed to be the most cost-effective design for SLBM forces within the constraints of available technology; however, the search for new technologies must continue. The SSBN Subsystem Technology Program stresses development of new designs for more cost-effective SSBN subsystems. This long range program will allow cost-effective subsystem designs to be initiated in advance of development of a future SSBN, thereby minimizing formulation of subsystem designs on a crash basis. A reduction in costs and in the time span from concept formulation to development of a totally new SSBN system should be the benefit to flow from this program.

(3) Bombers

The bomber forces projected through FY 1982 in Appendix Table 2 are essentially the same as those presented in the Defense Report last year. This is the case because we continue to believe that a bomber force of this

size with its unique characteristics can effectively contribute to maintaining credible warfighting capabilities, and thus high confidence in deterrence of nuclear war. The programmed forces, particularly with procurement of the B-1 bomber and introduction of the Air-Launched Cruise Missile (ALCM), have been structured to provide high levels of effectiveness against the sophisticated Soviet air defenses that we expect to see deployed in the outyear planning period.

B-52s/KC-135s

Several programs involving the current B-52 bomber and KC-135 tanker force are continuing or will have been recently completed by the beginning of FY 1978.

The reduction in bomber and tanker crew ratios to the level of about 1.3 crews for unit equipped (UE) bombers and tankers will be complete by FY 1978. This crew ratio will allow us to keep about 30 percent of our bombers on routine alert. This is the minimum that will ensure generation of the full bomber force in a short period of time. This alert policy results from an assessment that a Soviet attack "out of the blue" is unlikely under current circumstances.

The structural modifications on the 80 B-52D aircraft to extend their service life into the 1980s have been completed. In addition, we have decided to continue the special storage program which maintains 70 B-52D/Fs in storage at operational bases, at least through FY 1977, pending the results of the on-going Strategic Arms Limitation (SAL) negotiations.

The transfer of 128 UE KC-135 tankers from the active forces to the Air Reserve Components is continuing. This program has been accelerated slightly to adjust the transfer schedule to the ability of the Air Reserve Components to accept these aircraft. Thus, by the end of FY 1977 we plan to have 12 squadrons of 8 UE aircraft each activated instead of the nine squadrons originally planned. The remaining four squadrons will be activated in the Air Reserve Components during FY 1978, completing the transfer of all 128 KC-135s.

B-1 Bomber

The need to modernize our strategic bomber force continues to be acute. It is now clear that the level and sophistication of the Soviet threat continues to increase and that the SAL agreements place a heavy burden on the U.S. bomber force in terms of maintaining strategic equivalence. Bombers currently carry over 50 percent of U.S. strategic nuclear megatonnage and about 30 percent of U.S. strategic nuclear warheads. The B-1 will satisfy our modernization requirement and provide a significant increase in U.S. retaliatory capability to help maintain our nuclear deterrent. In addition, in a recent reassessment of the cost-effectiveness of bomber force modernization alternatives, it was found that the B-1 continues to be the most cost-effective

alternative for carrying out the bomber force mission.

The FY 1977 budget requested funding for the procurement of the first three production aircraft. Initiation of production was to occur in late CY 1976 if the Department was satisfied that the B-1 bomber would perform as expected. Based on the results of: (1) the successful flight test program in which the first three development aircraft have accumulated over 440 hours of flying time and fully demonstrated the B-1's operational capability; (2) the evaluation and recommendation of the Defense System Acquisition Review Council (DSARC); and (3) the assessment and recommendations of several independent ad hoc review committees, the Department concluded that the B-1 was ready for production and formally approved production this past December. The B-1 production effort has been structured so as to be in compliance with the FY 1977 Defense Appropriations Act. The Department provided for the extension to 30 June 1977 of a phased funding arrangement of the procurement contract to permit orderly review of the B-1 program.

By any measure, the B-1 has had more preproduction testing than any previous military aircraft. To ensure the structural soundness of the aircraft, the static test program included both component and assembled airframe tests. Fatigue testing to two lifetimes has been completed and will eventually total four lifetimes. In contrast, the F-15 had one lifetime of fatigue testing at the production point, and structural fatigue testing of the B-52 did not begin until well after deliveries to Air Force operational units. Wind tunnel testing, underway for five years, has already exceeded that of any other military aircraft before its first flight. Offensive avionics, modified off-the-shelf equipment from other programs, has undergone three years of laboratory testing. The navigation equipment has had a year of flight testing aboard a C-141 test bed and has been successfully demonstrated in the B-1 since April 1976. The B-1 engines have been tested since 1971, accumulating over 13,000 hours of operation, and have completed all design reviews.

The FY 1978 budget request contains $443 million for continued research and development and $1,711 million for procurement of eight production aircraft. The FY 1979 authorization request contains funding for procurement of the next nineteen aircraft. This procurement level will allow a build-up over the FY 1978-83 period to a production rate of four B-1s per month.

Short Range Attack Missile (SRAM)

We are continuing with the development and testing of a new SRAM motor to replace the original SRAM motors which were designed for a five-year service life. Although the replacement of the original motors was expected to start as early as FY 1977, on-going motor surveillance testing has revealed no significant deterioration in the motor propellant. Thus, the original motors may not require replacement until FY 1980. The budget requests $12.2 million in FY 1978 and $5.2 million in FY 1979 to continue this development program. The B-1 SRAM program would be phased to correspond to programmed

B-1 aircraft deployments. Thus, deliveries of the new SRAM would start in FY 1981 with the deliveries of the first UE B-1s. About $122 million is requested in FY 1979 for the initial procurement of SRAM.

(4) Cruise Missiles

The Air-Launched Cruise Missile (ALCM) and the Sea-Launched Cruise Missile, now called the Tomahawk, are continuing in development. At the forthcoming DSARC, early this year, the Department will be considering whether or not to move into full-scale development with either one or both programs. The basic difference between the two missiles is in the airframe, which is optimized in each case for different launch platforms. Continuing stress on maximum commonality in high cost components -- the engine, navigation guidance package and warhead may warrant keeping both programs on line.

ALCM

The ALCM is being designed for both internal and external carriage on the B-52 and internal carriage on the B-1. Employment of the ALCM from B-52s will provide a cost-effective solution to maintaining the capability of these aircraft during the mid-1980s when the Soviet air defenses are projected to increase. This employment of the B-52s, and the necessity for a bomber with the B-1's advanced capabilities, form the basis for the judgment that the future bomber force should consist of some bombers which can penetrate the heaviest Soviet air defenses to destroy well-defended targets with SRAMs, and other bombers which can launch ALCMs from inside and outside Soviet air defenses against targets that are not so heavily defended. Thus, if the recommendation of the next DSARC is to proceed with full-scale development, and the development program proves successful, initial procurement of ALCMs could begin in FY 1979 leading to an FY 1980 IOC. The FY 1978 budget requests $124 million for continued research and development and $41 million for initial long lead procurement funding.

Tomahawk

The wide variety of applications of the Tomahawk cruise missile have already been discussed in Section I. As discussed there, nuclear armed Tomahawk could be deployed at sea or on mobile land launchers; in either mode it would have a high degree of pre-launch survivability and would provide an all-weather delivery capability which has excellent collateral damage control characteristics. The FY 1978 budget requests $234 million for research and development for the Tomahawk. Initial procurement is expected to begin in FY 1979. Initial operational capability is scheduled for FY 1980.

2. Strategic Defensive Forces and Programs

a. The Basis for the Programs

The focus of U.S. strategic defensive programs is on those capabilities which are most effective, based on the overall threat and our strategic policies, rather than on "mirror-image" matching of Soviet defensive programs. In designing U.S. programs, the major defensive issues to be addressed are how to:

-- modernize the aging U.S. strategic air defense forces;

-- hedge against such potential instabilities as Soviet abrogation of the ABM Treaty, or technological breakthroughs in ballistic missile defense;

-- ensure the continued effectiveness of U.S. bomber, missile, and space warning and attack assessment systems in an era of increasingly sophisticated offensive threats;

-- structure the U.S. Space Defense program to reflect the increasing importance of space to national security; and

-- improve the Civil Defense program to enhance U.S. nuclear attack preparedness and post-attack recovery posture.

Modernization of Defenses

Although current U.S. strategic policy does not emphasize active defense of the Continental United States (CONUS) against massive nuclear attack, we do maintain a limited active strategic air defense capability so as to:

-- maintain peacetime CONUS air space sovereignty,

-- deny any intruder unchallenged access to CONUS air space in times of crises, and

-- retain an option to deploy a dedicated air defense force to defend U.S. interests or forces in foreign theaters against air attack.

The forces currently available, which are the remnants of the large CONUS bomber defense force deployed in the 1950s and 1960s to defend the U.S. against a large Soviet bomber attack, are not cost-effective in carrying out these limited missions. To remedy this situation, the plan is to deploy a follow-on-interceptor to replace the aging Active F-106 interceptor force. Also, the Joint Surveillance System (JSS) program will continue; it will modernize the outdated surveillance and air defense command and control network.

Hedging Against BMD Instabilities

A primary uncertainty in the strategic defensive area which could seriously jeopardize strategic stability pertains to ballistic missile defense (BMD). As the Soviets continue their substantial BMD R&D program, we must do likewise to encourage Soviet compliance with the ABM Treaty, protect our technological lead in BMD, and guard against their unilaterally achieving technical breakthroughs. Accordingly, we plan to continue a carefully structured BMD R&D program of two complementary efforts -- an Advanced Technology program and a Systems Technology program.

Enhanced Effectiveness for Warning and Surveillance Systems

Improving U.S.tactical warning and assessment capabilities is important in light of continued Soviet improvements in strategic offensive capabilities, if we are to prevent the creation of a "hair trigger" on our strategic offensive forces. The major programs to do this are:

-- the CONUS Over-the-Horizon Backscatter (OTH-B) radar program, the Distant Early Warning (DEWLINE) enhancement program, the Alaskan radar net modernization program, and surveillance radars of the JSS to improve the bomber warning system;

-- the Pave Paws (SLBM phased array) radar program to improve warning against SLBM attacks on eastern and western trajectories;

-- the BMEWS upgrade program and incorporation of PAR into our ICBM attack characterization net to improve warning and attack assessment capabilities against ICBM attack;

-- installation of Simplified Processing Stations(SPS) to improve the survivability of our Defense Support Program early warning system against SLBMs and ICBMs; and

-- the Ground Electro-optical Deep Space Surveillance System (GEODSS) sensor program and the Spacetrack Pacific enhancement program to improve U.S. space surveillance capabilities.

Space Defense

Space-based systems offer many inherent advantages over ground or air-based systems and, as space technology matures, these systems will undoubtedly play an increasing role in support of U.S. and Soviet military operations. As military dependence on space grows, the loss of key space systems could materially influence the outcome of future conflicts. Space has thus far been a relative sanctuary, but it may not remain so indefinitely. Accordingly, we have significantly increased U.S. space defense R&D and procurement programs to provide for an improved capability, should we need it, in certain key space defense areas. These areas include: ground and space-based satellite surveillance systems, satellite survivability programs and anti-satellite systems.

Civil Defense

The U.S. Civil Defense program is designed primarily to enhance survival of the U.S. population in the event of a nuclear attack. Improving current civil defense capability, essentially the product of the national fallout shelter program of the 1960s, requires that we update and improve the national fallout protection capability, accelerate contingency planning to develop an option for population relocation in a crisis, and enhance National readiness to respond to nuclear crisis situations.

b. Force and Program Status

A detailed listing of strategic defensive forces is shown in Appendix Table 2. There are no major changes in force levels over the program period. Acquisition costs of major defensive force modernization and improvement programs were listed previously in Table I-1. Highlights of the major defensive programs are discussed below.

(1) Air Defense and Warning

Last year it was proposed that the Air National Guard (ANG) F-101 interceptor force (four squadrons) be phased out by the end of FY 1977, with the planned conversion of the ANG units affected to F-4 aircraft. However, in view of our recent decision to increase tactical air power in Europe by deploying additional F-111 forces to England and retaining additional F-4 units in Europe, we will retain three squadrons of F-101 aircraft in the ANG instead of converting them to F-4 aircraft. A fourth ANG F-101 unit at Hector Field, North Dakota, will still convert to F-4s this year as previously planned. This retention of ANG F-101s maintains the strategic air defense interceptor force at 16 squadrons: three ANG F-101 squadrons, six active F-106 squadrons, six ANG F-106 squadrons, and one ANG F-4 squadron. These interceptor forces, augmented by general purpose force F-4s, maintain peacetime alert aircraft at 26 sites around the periphery of the 48 contiguous states to ensure the sovereignty of U.S. air space. In addition, the Army continues to maintain Nike-Hercules and Hawk batteries in Florida. In times of crisis, additional general purpose aircraft from the Air Force, Navy and Marine Corps are tasked to augment dedicated CONUS air defense forces.

An active air defense interceptor squadron equipped with F-4s is based in Iceland, and the F-4 equipped Hawaii ANG tactical fighter squadron performs an air defense mission. Additionally, in Alaska we maintain one active Air Force F-4 squadron, which performs an air defense mission in addition to its tactical role, and three Army Nike-Hercules batteries.

The present Air Force airborne radar surveillance force is comprised of ten Air Force Reserve EC-121s manned by Active and Reserve crews.

These aircraft currently provide radar surveillance over the critical Greenland, Iceland, United Kingdom (GI/UK) Gap. This force must be maintained in being until early FY 1979 when the E-3A AWACS will be able to assume the mission.

Follow-on Interceptor (FOI)

Normal attrition will reduce the number of available F-106 aircraft below the level required to maintain a dedicated strategic air defense force beginning in the early 1980s. Accordingly, the Department tentatively plans to deploy an interceptor version of one of our newest fighters as a follow-on interceptor (FOI) to replace the aging F-106s in our active interceptor force.

Although we have decided to defer FOI aircraft selection based on uncertainty concerning our future air defense requirements and sensitivity of candidate aircraft (F-14, F-15, or F-16) to mission requirements, we have included $26 million in the FY 1978 budget request to retain the option to deploy FOIs beginning in FY 1980.

Joint-Surveillance System (JSS)

We are requesting $11 million for this program in FY 1978. As mentioned last year, the CONUS surveillance element of the JSS will consist of 48 long-range surveillance radar sites: 43 sites will be operated and maintained by the FAA, but the radar data will be jointly used by the FAA and Air Force. The remaining five sites in CONUS will be under Air Force control. In Alaska there will be 14 sites: 12 Air Force, one jointly-used Air Force site, and one jointly-used FAA site. Minimally attended radars will be developed and procured in the early 1980s to replace the current obsolete Alaskan surveillance radar system. Final conversion of the surveillance element of the JSS should be completed in 1980.

Agreement has been reached that the control element of the JSS will consist of four Regional Operations Control Centers (ROCCs) in CONUS, one in Alaska, and two in Canada. These centers will provide the command and control function required for the peacetime air space sovereignty mission and will replace the six costly and outdated Semi-Automatic Ground Environment (SAGE) centers in CONUS and Canada and the Manual Control Center (MCC) in Alaska. Annual savings in excess of $100 million and 5,000 personnel should result from this modernization of the strategic air defense command and control system. AWACS aircraft from the general purpose AWACS force will be available to augment the ROCCs and provide CONUS with a survivable wartime air defense command and control system. Final deployment of the ROCC element of the JSS will extend into 1981.

CONUS Over-the-Horizon Backscatter (OTH-B Radar)

Last year I discussed the OTH-B limited coverage prototype radar being constructed in Maine. This technology has shown promise for meeting our future long range bomber warning needs. However, during the past year cost and schedule problems have required our slowing down the

planned efforts. After a thorough evaluation is made, a decision on the future course of action will be forthcoming. In the interim, the program will be funded at a $2 million level for FY 1978.

Distant Early Warning (DEWLINE) Radars

We are requesting $1 million in FY 1978 to initiate development of an Enhanced Distant Early Warning (EDEW) line that would correct deficiencies in low altitude coverage of the northern bomber approaches to CONUS. Use of an OTH-B radar to cover the northern bomber approaches does not appear feasible owing to the inability of such radars to operate effectively in the auroral zones of the Arctic atmosphere. Current planning envisions replacing the existing DEW radars with unattended automatic radars, along with the addition of Gapfiller sites, to provide coverage down to 100 feet. Initial deployment is planned for the early 1980s.

(2) Ballistic Missile Defense (BMD) and Warning

This fall will mark the fifth anniversary of the ratification of the ABM Treaty which restricts the deployment of Ballistic Missile Defenses. During this period, the nature of the U.S. BMD program and its funding have changed markedly. In 1972, the Department was in the midst of the system development and deployment of the Safeguard system; advanced R&D efforts -- the Site Defense Prototype Demonstration Program and R&D on Advanced Technology -- were primarily concentrated on near-term improvements. Since, the Safeguard system has been terminated and deactivated (except for the Perimeter Acquisition Radar (PAR) which will be transferred to the Air Force for use as an ICBM warning/attack characterization we have reoriented R&D efforts to focus on more advanced concepts and technologies. BMD funding, excluding costs of operation of the Kwajalein Missile Range which is a national range, has been reduced from a peak of $1.4 billion in FY 1971 to the requested amount of $215 million in FY 1978.

During the course of the past five years, however, there has not been a corresponding downturn in the scope of the Soviet efforts in strategic defense. They continue to operate the Moscow ABM system and to conduct a substantial BMD R&D program. Given these realities, I do not believe it is prudent, especially as we approach the review of the ABM Treaty scheduled to begin this fall, to reduce further the U.S. effort in BMD R&D. Rather, as I have indicated, I believe it is time to give U.S. strategic defense programs increased priority. Until we do so, the magnitude of the Soviet effort will inexorably erode our technological advantage. Thus, we are requesting a small increase in the FY 1978 level of effort for BMD R&D. We must maintain the technological lead in this area and we must hedge against future strategic uncertainties posed not only by the continuing growth of the Soviet threat but also by the danger of the nuclear weapons capabilities proliferating to other countries.

Advanced Technology

The advanced Technology Program is a broad R&D effort to advance

the state-of-the-art of BMD components, improve our understanding of BMD phenomenology, and investigate the feasibility of new, potentially important defensive concepts and technologies. A principal objective of this program is to maintain a technological lead in BMD over the Soviet Union. To achieve this, the program maintains a search for new ideas and conducts additional research to determine the feasibility of the most promising ideas.

Major research efforts are conducted in the areas of interceptor missiles, radar and optical sensors, data processing and those aspects of physical sciences that involve missile defense phenomena. Key field experiments continue to be a necessary part of this program. These efforts are designed to yield both major improvements in the performance of BMD components and new capabilities, such as non-nuclear kill. New approaches to ballistic missile defense, including particle beam weapons, high energy lasers, and space-based sensors or weapons, are receiving increasing emphasis in the program's search for revolutionary concepts and ideas which could yield technical breakthroughs. If and when such breakthroughs are achieved, it is necessary that we find them first and not be caught unaware.

Systems Technology

The Systems Technology Program addresses the system feasibility of a variety of possible defense missions. This is accomplished by system definition, technological development, integration of the necessary components, and test and evaluation of hardware against targets at the Kwajalein Missile Range in order to resolve critical system issues related to the terminal, midcourse, and low altitude defense regimes. In so doing, this program ensures that technological advances can be realized in a working system.

The primary objective of the Systems Technology program is to provide a hedge against future strategic uncertainties by maintaining the capacity to develop and deploy expeditiously a BMD system for any of a number of possible future roles. The program is designed to continue to update the technological content of BMD system options by incorporating technological advances initially developed in the Advanced Technology Program so as to provide the most advanced and most effective system options at any given future time.

A major task in the program effort for FY 1978 will be to complete integration and checkout of test facilities -- systems technology radar, data processor, and associated software -- at Kwajalein Missile Range and to initiate tests with these against Air Force targets (Minuteman and Titan) to resolve the critical terminal defense system issues. The remainder of the program effort in FY 1978 is associated with the initiation of R&D on the key elements for a very low altitude concept applicable to the defense of a mobile ICBM force and on an exoatmospheric intercept capability that could complement a terminal defense system. These represent high payoff technologies now ready for transfer from the Advanced

Technology Program. Integrated field testing of these is planned for FY 1979 and FY 1980, making use of the terminal defense test facilities being completed in FY 1978.

ICBM Warning Systems

We plan to continue our policy of covering all relevant strategic missile launch areas with at least two different types of warning sensors (sensing different phenomena). Reliance will continue on the Defense Support Program (DSP) early warning satellite system and the Ballistic Missile Early Warning System (BMEWS) radars for warning of ICBM attacks. In addition, the Perimeter Acquisition Radar (PAR) will remain operational in support of the NORAD attack assessment mission.

Two major improvement programs are under way or planned to ensure continued effectiveness of our ICBM warning systems. First, the transportable Simplified Processing Station (SPS) will permit greater survivability and operational flexibility for the processing and dissemination of satellite early warning information. Funds will be requested in future budgets for deployment of SPS. Second, resolution improvements and upgrades for the BMEWS radars will enhance system reliability. We are requesting $13 million in FY 1978 for these BMEWS improvement programs.

SLBM Warning Systems

The Pave Paws coastal-based phased-array radar program is progressing on schedule. Deployment of these two radars will permit phase-out of the six obsolete 474N SLBM warning radars now in operation, and will complement DSP satellites to provide reliable full coverage warning of any SLBM attacks. The $7 million requested in FY 1978 will allow continued deployment of this system.

(3) Space Defense

The rapid advances of space technology in the last several years have resulted in a greatly expanded role for space-based systems in direct support of U.S. and Soviet military operations. Space-based systems offer many advantages over ground- or air-based systems; we can expect this trend toward the effective integration of space systems into military combat operations to continue, and realtime space capabilities to become increasingly important to the effective use of military forces.

U.S. satellite systems currently provide early warning of missile attack, furnish position updates to our SSBN force, provide vital weather and reconnaissance information, and play a major role in our worldwide military command and control system. We anticipate that many new capabilities will be provided by space-based systems in the future. For example, in the early 1980s, the NAVSTAR Global Positioning Satellite system will provide upgraded navigation accuracy to a wide range of U.S.

military systems while, in the longer term, satellite systems could aid in controlling forces in a land conflict.

The Soviets appear to be growing more dependent on satellite systems for tactical support. This is illustrated by the Soviet use of radar ocean surveillance and electronic intercept (ELINT) satellites which provide them with a unique worldwide operational capability to locate major U.S. naval surface combatants. These position data can be passed in realtime to Soviet naval elements, both surface ships and submarines, for use in targeting their long-range antiship cruise missiles.

Current U.S. space defense policy is to abide by our space treaties, exercise our rights to the full and free access to space, and limit our use of space to nonaggressive purposes. It is absolutely vital, however, that we remain alert to Soviet activities and technological advances in space capabilities which could some day materially influence the outcome of a future conflict.

The resurgence of Soviet antisatellite test activity this past year, the development of a possible antisatellite laser facility at Sary Shagan, and their technical capability and doctrine for electronic warfare against space systems indicate that the Soviets have undertaken a broad-based program to develop the capability to destroy present U.S. low altitude satellites and to interfere with the operation of our satellites at all altitudes.

Space has thus far been a relative sanctuary, but it will not remain so indefinitely. The Soviets could use their antisatellite capability during a crisis or conflict to deny us the use of a vital element in our total military system.

Accordingly, we have decided to increase significantly the U.S. space defense effort over a broad range of space-related activities which include space surveillance, satellite system survivability and attack, and the related space operations control function. The $107 million in FY 1978 ($1.6 billion for FY 1978-1982) is directed at carrying out a broad-based RDT&E and procurement program which will improve our current capabilities and create options to deploy important operational capabilities in the early 1980s, should the need arise. Specifically, the Department's program:

-- initiates prototype design of an LWIR (longwave infrared) space-based surveillance satellite in FY 1981 so that deployment of this advanced satellite surveillance capability could begin in FY 1985; currently we must keep track of foreign nation satellites with a limited network of ground-based sensors;

-- incorporates satellite attack warning and impact sensors and provides survivability aids on U.S. satellites;

-- initiates prototype non-nuclear antisatellite flights in FY 1980 and maintains an option for an FY 1983 antisatellite IOC;

-- provides for an improved space operations command and control facility; and

-- increases the level of effort on a large number of smaller space defense RDT&E programs.

This expanded space defense program will signal our commitment to protect U.S. space-based assets and ensure that the U.S. has the capability to operate effectively in a hostile space environment.

(4) Civil Defense

The Civil Defense program is an element of the U.S. deterrent posture. It is sized and structured to enhance the survival and recovery of the United States, should deterrence fail, by increasing the percentage of the U.S. population that would survive in the event of a nuclear war. The program should provide a "surge" capability for relocation of the population from areas near military bases and large cities in time of crises and nationwide fallout protection for people at their present location and for those who might be relocated.

We are requesting $90 million for Civil Defense in the FY 1978 budget. Increased funding will be applied to improve the national fallout protection posture and to speed the development of plans for crisis relocation of U.S. population. In developing these complementary capabilities, we continue to emphasize programs and plans that involve modest peacetime costs, but which could be "surged" in time of crisis to provide an effective national civil defense capability. At the requested level of effort, a thorough nationwide crisis relocation plan is expected to be completed by the mid-1980s, with an initial capability for crisis evacuation expected by about 1980.

At the State and local level, we continue to support the preparedness base upon which we would build in time of crisis. Under the authority of the Federal Civil Defense Act of 1950, civil defense assistance must continue to focus primary attention on preparing for an enemy attack upon the United States. However, Federal assistance to State and local governments for emergency preparedness may include activities relating to readiness to deal with peacetime disasters when the facts demonstrate that such assistance benefits both attack and peacetime preparedness objectives.

3. Strategic Command, Control and Communications

a. The Basis for the Programs

The strategic command, control and communications (C^3) system, which consists of dedicated systems, such as the worldwide fleet of Airborne Command Post and Tacamo aircraft, and which makes use of multi-purpose systems, such as Autodin, VLF/LF and satellite communications, is the central core of DoD's total C^3 system. The total C^3 system will be described in detail in Chapter V, but there are some specific concerns with strategic C^3 that should be considered separately. The basic issues for strategic C^3 are how to:

-- ensure that sufficient parts of the system will survive an attack directed against them to permit the President to communicate to U.S. forces his decision to execute or terminate retaliatory strikes; and

-- maintain a flexible, operational capability if the system is not directly attacked.

A complementary issue, that cannot be resolved using our strategic C3 system, but yet must be dealt with, is how to:

-- maintain constant communication with the Soviet leadership if the C^3 system is not directly attacked.

Execution of Retaliatory Strikes

To permit the President's decision to execute a general nuclear attack option to be communicated to the strategic offensive forces, even when the C^3 system itself has been attacked, we have developed plans which call for a number of command centers, fixed and mobile, with redundant communications from these centers to the forces.

The National Military Command System (NMCS) is the centerpiece of these plans. It consists of the National Military Command Center (a soft facility) in the Pentagon, the Alternate National Military Command Center (ANMCC, moderately hard facility), and the National Emergency Airborne Command Post (NEACP). Of the three, only the NEACP, if airborne, can be expected to survive a nuclear attack directed at our C^3 systems. Moreover, since the NEACP has multiple path, multiple frequency communications to the strategic nuclear forces, its vulnerability to jamming and nuclear weapon effects is low. In addition, CINCSAC, CINCEUR, CINCLANT, and CINCPAC have both fixed and airborne command posts capable of communicating with the nuclear forces, as well as the NMCS.

While the present C^3 system can support the President in his control of the strategic forces, the threat of direct attack and jamming are projected to increase and several programs are under way to meet these threats.

There are four continuing programs which were reported last year. These are the Advanced Airborne Command Post (AABNCP), the Air Force Satellite Communication System (AFSATCOM), the Extremely Low Frequency (ELF) System and the Tacamo Improvement Program.

Two new programs have been added. One is aimed at developing a very hard capsule inside the Alternate National Military Command Center and the other is the Deep Underground Command Center (DUCC). The former will reduce the vulnerability of the ANMCC to submarine-launched missiles; this will add about 30 minutes to its operational life, the projected interval between SLBM and ICBM impact. The latter program is a research effort in deep basing technology to determine whether it is feasible to build a deep (1-2 km) underground C^3 center which theory indicates would be practically invulnerable to direct attack. This is being done as a hedge against projected improvements in the accuracy and yields of Soviet nuclear reentry vehicles.

Maintenance of Operational Capability

The present, redundant C^3 system is estimated to be capable of providing for flexible use of the strategic (and other) forces if the C^3 system is not directly attacked. Some of the projected improvements mentioned above, such as AFSATCOM, plus other improvements to the overall C^3 systems, such as the Defense Satellite Communications System, will further enhance this capability.

Communication with Adversary Leadership

Maintaining continuous communication with Soviet leadership may clarify confusing events or provide a channel for negotiations and the control of escalation. This vital communications capability is provided by a number of teletype terminals in different locations with multiple paths to the USSR. This is generally referred to as the MOLINK (Washington-Moscow link). To assure that the system is always operational, there is a one-way check every hour on an alternating basis. The system is not designed to survive a direct attack.

The MOLINK system is supported by the Defense Department as part of its communications support to the President, although it is not part of the strategic C^3 system. The status of strategic C^3 systems and programs is covered in Chapter V, Command, Control, Communications.

B. The Theater Nuclear Forces

1. The Basis for the Programs

To meet U.S. political and military objectives in several important areas of the world we need effective theater nuclear forces (TNF). They help deter enemy use of nuclear weapons and hedge against a failure of conventional forces. This requires that TNF be survivable, able to execute selective, limited and regional options, and meet the political demands of control, low collateral damage, and reassurance of allies. A theater nuclear capability is deployed for purposes of deterrence in the two overseas theaters of prime importance to us -- Europe and Northeast Asia. This capability ensures immediate availability in case of surprise attack. It also maintains confidence on the part of allies in our overall nuclear commitment and allays any perceived requirement for a nuclear capability of their own.

The Soviets continue to modernize their battlefield nuclear forces, improving their capability to undertake combined conventional-nuclear operations. The more impressive effort, however, appears aimed at qualitatively improving the already large theater level, peripheral attack force which has the potential for a strategic offensive role against Western Europe and China. Development of the Backfire and SS-X-20, and deployment of improved tactical aviation units, reinforce the need to maintain an adequate NATO TNF deterrent capability. Hence, even though NATO now maintains a formidable array of nuclear forces, including some U.S. strategic systems, the Soviet peripheral attack force will soon present such an improved capability that we must review the needs and structure of the U.S. TNF. This growing threat already makes it evident that our TNF needs:

-- improved survivability through well planned dispersal, greater mobility and hardening, and reduced vulnerability to sabotage, seizure or conventional attack;

-- more accurate timely, and discriminate operational intelligence and target information;

-- improved, survivable, and more responsive command, control and communications;

-- doctrine and plans that allow the TNFs to support battlefield or theater-wide requirements more rapidly and effectively;

-- weapons that would allow us to minimize collateral damage, while maximizing damage to enemy targets;

-- systems that more effectively complement conventional force capabilities.

2. Program Status

a. Battlefield Nuclear Systems

Battlefield systems can provide nuclear strikes to support forces in contact with the enemy to affect the immediate course of the battle. They can execute nuclear strikes which are limited in time, yield, and area, and thus can provide escalation boundaries. Such strikes would be available to blunt a major attack in either NATO or Korea. U.S. ground force battlefield systems are the Lance surface-to-surface missile and nuclear cannon artillery. Some of our allies presently retain Honest John rockets and Sergeant surface-to-surface missiles for which U.S. custodial units maintain the warheads. These systems enhance deterrence of either conventional or nuclear attacks by raising the risk to massed enemy armor and artillery, and by providing the capability to destroy attacking formations (and their support elements) attempting to break through the defense. Tactical aircraft also have the capability to provide support to the battlefield by concentrating nuclear firepower quickly at any point in the theater.

The capabilities of ground force battlefield systems are being improved through the following nuclear weapon system developments:

-- a modified warhead for Lance, which increases military effectiveness while decreasing undesired damage to adjacent areas;

-- a modernized nuclear round for the 8-inch cannon. This new round overcomes the operational limitations associated with the current 8-inch projectile.

-- a modernized nuclear round for the 155mm cannon. In response to a request from Congress, we have restudied the need for a 155mm Artillery Fired Atomic Projectile (AFAP), and reported the findings in early January. The study shows that the 155mm AFAPs enhance the survivability and flexibility of battlefield nuclear forces. Our NATO allies are standardizing on 155mm artillery. We will need the new 155mm nuclear round to ensure an ap propriate density of nuclear firepower across NATO's entire front.

b. Theater-wide Strike Nuclear Forces

Theater-wide strike forces include U.S. and allied nuclear-armed tactical aircraft (for the U.S., primarily Air Force F-111s and F-4s, Navy A-6s and A-7s), U.S. and FRG Pershing missiles, the UK Polaris SLBMs and bombers, and some U.S. Poseidon SLBM warheads. These forces can execute pre-planned and selective strikes against a variety of targets in the theater in support of both limited and theater-wide operations. France also deploys some SLBMs, IRBMs, and medium bombers.

Improvements to U.S. theater-wide nuclear capabilities include:

-- deploying more F-111s to the United Kingdom and committing additional Poseidon warheads to NATO, thereby improving TNF survivability and allowing greater flexibility in the use of tactical resources for conventional or nuclear operations;

-- increasing the capability of tactical air to supplement indirect fire support elements in the battle area, with emphasis on defeat and disruption of enemy forces moving to the battle, by planned improvements in nuclear delivery techniques and specialized pilot training;

-- providing our newest tactical aircraft, the F-16, with a nuclear delivery capability;

-- developing all-weather standoff systems and systems with terminal guidance for increased accuracy (e.g., Pershing II) and;

-- increasing deployment of the newest nuclear bomb, the B-61, thereby improving the overall effectiveness of air-delivered weapons with a reduced stockpile. The B-61 has multiple yields, improved design safety, and enhanced security.

Our desire to develop the best mix of conventional and theater nuclear capability in the deployed forces has stimulated intensive study of new TNF system concepts. One such concept, now in the planning stage, is the adaptation of cruise missile technology to land, sea, or airborne platforms for theater-wide use.

c. Theater Defensive Nuclear Forces

We maintain a nuclear capability, for U.S. and allied Nike Hercules missile air defense units in Europe, and atomic demolition capabilities which an attacker must consider. Although these systems expand the spectrum of defense capabilities, they have less impact on deterrence and war termination and in the case of the Nike Hercules require greater manpower and fiscal resources than other TNFs. Thus, they are being given lower priority for retention and possible modernization than battlefield or theater-wide strike systems. In NATO we are studying whether the current numbers and locations of nuclear capable Nike Hercules batteries continue to be justified.

d. Maritime Theater Nuclear Forces

We have nuclear and conventional antiair warfare (AAW) and anti-submarine warfare (ASW) weapons for delivery by U.S. Navy ships, and strike (antiship and land attack) bombs for delivery by U.S. and allied naval patrol aircraft. However, because of the increasing effectiveness of new U.S. conventional weapons, some maritime nuclear systems cannot

provide results clearly superior to these new conventional weapons and therefore the use of some maritime weapons would not be as militarily and politically decisive as other nuclear systems. For this reason, we have already withdrawn a variety of obsolescent nuclear weapons from some active combatant ships. But, owing to Soviet maritime theater nuclear systems, we must still maintain our best systems in the fleet. In the meantime, research and development on improved nuclear ASW and AAW systems must continue. The acquisition of new maritime theater nuclear systems may be necessary if we are to maintain a credible capability across the spectrum of conflict. A modernization program will be pursued for this category of weapons as advancing technologies promise to provide a significant increase in military effectiveness over current nuclear or conventional weapons.

c. Intelligence, C^3 and Planning

(1) Intelligence

Forces cannot be effectively employed without adequate knowledge of the enemy's actions. Good intelligence, appropriately disseminated, can multiply the effectiveness of our forces. It is particularly important to have detailed information available when contemplating use of nuclear weapons. Improvements are planned in national intelligence support for operational commanders. They will be accomplished by providing for mutual support between and among national and theater assets, and increased interaction between intelligence activities and military operations in a combat environment. Further, plans are proceeding for an integrated approach to intelligence support in Europe, which will enhance U.S. intelligence support to NATO and allow for greater interchange and dissemination of critical intelligence in peacetime, in crisis, or in war.

(2) Command, Control and Communications (C^3)

Survivable, timely and reliable command, control and communications are essential for both deterrence and the flexible employment of our theater nuclear forces. The United States retains positive control of its nuclear warheads through a series of communications networks and coded release procedures.

The following improvements in the C^3 systems for theater nuclear forces are under development:

-- testing of a satellite communications system which will improve communications to nuclear custodial units.

-- testing of a prototype system (ROC-16) at seven NATO sites to support the rapid release of nuclear weapons by U.S. custodial agents. By adding secure voice conferencing and other capabilities, this system will provide a timely view of battlefield events.

-- interconnection and mutual support involving the Defense Communications System (DCS), NATO communications, and NATO national systems. This program will provide enhanced survivability through redundancy (alternate routing) at little additional cost.

-- development of mobile/transportable equipment to facilitate C^3 and headquarters survivability and reconstitution.

-- configuration of AFSATCOM to provide communications to TNF.

-- NATO upgrade of its Status, Control, Alerting and Reporting System (SCARS II) which provides lateral links to NATO headquarters and improves survivability and continuity of operations.

The continued attention to and improvement of theater nuclear information and engagement systems, including target acquisition, is essential to the effectiveness and responsiveness of the TNF.

(3) Planning

Renewed planning efforts focus on improving operational procedures for the TNF and enhancing coordination of nuclear and conventional forces operational doctrine. In addition, our planning is emphasizing employment concepts which provide the President with a wide range of alternatives. Continuing review and approval by the National Command Authorities of nuclear option planning is essential to timely employment of nuclear weapons.

f. Peacetime Security and Storage

The security of nuclear weapons in peacetime is continually being reviewed. In planning and implementing nuclear storage on a worldwide basis, we must balance such factors as survivability of warheads in case of a surprise attack, security of individual sites under a terrorist attack, capability for weapon dispersal in a crisis, and cost. As a result of the latest site-by-site review, we have closed or plan to close a number of sites for a savings of $20-30 million annually. We will further upgrade the physical security of the remaining nuclear storage sites at a cost of about $1.5 million per site.

We are also making significant advances in the safety characteristics of and security devices attached to individual warheads. Some of these are:

-- improvements in command-disable techniques, and in Permissive Action Link (PAL) security devices;

-- packaging techniques for storage and transportation of nuclear weapons;

-- use of more insensitive high explosives in new nuclear weapons for greater safety.

II. THE CONVENTIONAL FORCES

A. Land Forces

1. Program Basis

U.S. national security interests, notwithstanding the emphasis on the NATO theater, dictate that our forces be capable of protecting U.S. interests worldwide. Therefore, land forces primarily oriented toward a NATO/Warsaw Pact war must have the flexibility in their structure, organization, doctrine, and equipment for employment where other less dangerous, but much more likely, contingencies may arise. The European theater, however, is the most critical concern because it is an area of paramount interest to the U.S. and is faced with a major land force threat. As a consequence, our major concerns with U.S. land forces in the present and near future are:

-- stopping a massive attack by armor-heavy forces in Europe;

-- improving our ability to thwart a short-warning attack against NATO;

-- upgrading the readiness of the active and reserve forces;

-- increasing our capability to sustain the force in combat; and

-- modernizing the force to meet the more sophisticated threat.

In most cases programs are well advanced to deal with these problems. In other cases we are initiating programs or still considering alternative solutions.

Stopping a Massive Attack by Armor-Heavy Forces

This is a problem which has been receiving considerable emphasis in our programs. After the conflict in Southeast Asia, U.S. ground forces were ill-structured to fight against the armor-heavy threat in Europe. As a result, an effort was begun to convert some of the light (infantry, airborne, air mobile) divisions to heavy ones (armor and mechanized). Sufficient light forces, however, must be maintained to meet a broad range of contingencies worldwide. In addition, although heavy divisions are superior in meeting the threat in Europe, these divisions entail greater costs, not only in equipment, but also in training, maintainability and strategic lift.

A major improvement in the armor-stopping potential of U.S. forces is being achieved through new direct and indirect fire weapons. We have nearly completed equipping our forces with the Tow heavy antitank missile and are well along in equipping them with the Dragon medium

antitank missile. These weapons have approximately three times the maximum range and seven times the kill probability of the recoilless rifles they replace. In addition, some Tow systems will be mounted on armored personnel carriers. This will provide armor protection for antitank missiles so they will be more difficult to suppress and more survivable. For indirect fire weapons, we are developing cannon-launched guided projectiles which can achieve a first-round hit on a tank from a howitzer, and scatterable mines that can be delivered by artillery or helicopter. Furthermore, we are procuring additional artillery weapons and beginning full-scale acquisition of improved conventional munitions.

U.S. tanks are also evolving as a more effective antiarmor weapon system owing to their improved fire control and the development of more lethal ammunition. The new XM-1 tank, which is receiving highest priority, will offer dramatic improvement in protection against enemy antitank weapons, as well as superior mobility. It has been suggested that the new generation of antitank weapons will make the tank obsolescent on the battlefield of the future. There is strong evidence, however, that through the combination of armor protection and mobility the tank will still be a difficult target to kill. The tank, supported by a combined arms team, can stand and fight on defense when unarmored weapons must withdraw. And most important, the tank is the only weapon system capable of spearheading a counterattack, which is an essential element of a credible sustained defensive operation.

Equally important advances have been made in air-delivered weapons, using both fixed-wing aircraft and helicopters. Close air support aircraft and attack helicopters with new precision-guided munitions combine high firepower with great mobility. These capabilities are important in defending against the type of massive armor breakthrough that is a tenet of Warsaw Pact doctrine.

Another area of emphasis is target acquisition. In the era of precision-guided munitions, what can be seen can be hit. Therefore, we need to improve our ability to find enemy targets with sufficient accuracy to attack them with our new munitions, preferably well before the enemy forces close on our troops. Even if such a goal is beyond present technology, it remains important to locate the main concentrations of enemy forces in order to weight our defense toward the most likely breakthrough sectors. These requirements lead to an investment in surveillance devices (sensors, radars), platforms (aircraft, helicopters), and processing centers. Owing to the Soviet emphasis on night operations in both training and doctrine, it is necessary to equip U.S. forces with night vision devices to prevent enemy exploitation of nighttime attacks.

Improving Our Ability to Thwart A Short-Warning Attack Against NATO

For some time we have based U.S. force size (but not our operational plans) on a warning time and mobilization scenario which assumed, theoretically,

that the Warsaw Pact would take about 30 days to mobilize and reach its full potential for a full-scale attack against NATO, and, further, that, within seven days after the beginning of any Pact mobilization, NATO would recognize it and begin mobilization. Thus, for force size and readiness planning, the United States was theoretically assumed to have about 23 days to get its forces positioned and ready to fight. Obviously, the enemy would be likely to select the most advantageous time for attack. For example, he might elect to begin fighting with the forces available in forward areas. Such an "unreinforced" attack could occur with little warning, or at worst achieve strategic and tactical surprise, and, if not countered effectively, could result in early loss of significant amounts of NATO territory. Allied forces must be equipped, trained, and positioned to guard against this type of attack as well as attacks which might be undertaken after varying degrees of reinforcement, and therefore greater warning time. Recent investigations, by the Department and others, have noted shortcomings in this area.

The unreinforced attack scenario places rigorous demands on the forward deployed force. It must be sufficiently large and mobile to cover the necessary terrain. The organization, equipment, and tactics of the force must be able to achieve very favorable force and firepower exchange ratios to offset the attacker's advantage of having the initiative. The peacetime posture of the force must permit quick deployment to defensible positions.

In recent years we have taken measures to improve U.S. forces in many of these respects. The Army has converted 12,000 support spaces to ground combat units, and deployed two additional combat brigades to Europe. In this year's program we propose to strengthen NATO deployments further by moving one of the U.S. brigades into Northern Germany.

Proposals to achieve further improvements have been receiving priority attention. These include stationing additional artillery units in Europe; changing ammunition supply procedures, stockage levels and storage locations; improving peacetime readiness; and enhancing command, control and communications so as to minimize delays and maximize survivability should an attack occur. However, our efforts will be considerably more valuable if they are matched by our NATO allies. Shifts of defensive positions are underway in the NATO sectors, but allied commitment of resources is also needed. Furthermore, some of the proposed changes in U.S. forces will require negotiations with host countries to capitalize on support that they can more effectively provide.

In several cases, force improvement and modernization programs already underway will significantly aid the ability of the deployed forces to fight the early battles. In addition, strategic mobility improvements will shorten the time the deployed forces must fight without reinforcements. Regardless of the warning and reinforcement time, we need to improve our ability to shift forces rapidly within the European

theater in response to the location and success of the major attacking forces. Our program to improve inter-theater and intra-theater mobility is discussed elsewhere, but its importance to the capability of the land forces merits emphasis. Also, planned improvements to theater and tactical communications, would greatly enhance our ability to exercise command and control of these highly mobile forces.

Improving the Readiness of the Active and Reserve Forces

While the situation has been improving in the past years, the reality is that some active and many reserve units lack many important items of authorized equipment. As a result, the readiness of such units is degraded and deployability impaired. Consequently, the procurement of the needed equipment for early-deploying units is of the highest priority. Once these needs are met, we must refill the Prepositioned Overseas Materiel Configured to Unit Sets (POMCUS) in Germany. This equipment would be used by the rapidly deploying CONUS elements of the U.S. 2d Armored and 1st and 4th Mechanized Divisions. (Their CONUS equipment then becomes available to reserve units deploying later.) The POMCUS stocks were badly depleted in supporting the Israelis in the 1973 Middle East War, but combat equipment should be largely reconstituted except for a few critical items by end FY 1978. Even then, however, serious shortages will exist in logistic equipment.

We have already increased the readiness of the reserve units. The current program calls for further improvements, not only through equipment purchases and incentives to retain and recruit qualified personnel, but also through continued affiliation of many reserve units with active units. Such affiliation can take one of three forms: "round-out" units which actually become part of understrength active divisions at mobilization; "augmentation" units which deploy with full strength active divisions as a force increment; and last, "readiness improvement" units which train with active units but are not planned for deployment with the active units.

Readiness can be increased by conducting large-scale mobility and deployment exercises. Only through such exercises can our critical deployment plans be tested and verified. Annual strategic mobility exercises will continue to include innovations that employ Army, Navy, and Air Force organizations in realistic wartime roles. A five-year program is being developed which will continue the use of sea and air transport, exercise of the BENELUX line of communication, and employ CONUS and European forces in realistic maneuvers in the Central and Northern Army Group areas.

Joint training exercises are essential to the readiness of U.S. and NATO defenses. Training accomplished in joint exercises is the culmination of unit and Service training. Only through realistic interactions of combat units in the areas of mobility, and command, control, and communications (C^3) can the complexities of modern warfare be realized. Joint exercises

accomplish a number of objectives not attainable through any other training device. The joint exercise program is an essential element in maintaining a readiness posture which will enable the unified and specified commands to be prepared to meet contingency and other operational requirements. The exercise visibly demonstrates U.S. resolve to defend NATO, and is also a valuable training aid.

Major incremental improvements in readiness can be achieved through more realistic training of personnel. The major initiative in this area is in the use of simulators and computer-aided techniques. A family of simulators is under development using lasers to simulate and score direct fire weapons. These devices increase the realism and decrease the cost of training exercises.

Increasing the Capability to Sustain the Force in Combat

Projections of a future war in Europe indicate an intensity of combat far higher than the U.S. has experienced in the past. Such a view is supported by the tactical experiences of the 1973 Middle East War, in which the rate of materiel attrition was the greatest seen in recent years. Given that a war in Europe could be won or lost in a relatively short period of time, we can no longer place primary dependence on industrial mobilization to replace our initial losses. Instead, it is necessary to stockpile greater amounts of equipment, ammunition and supplies, for timely replacement of combat losses, and replenishment of stocks of ammunition and other consumables.

Determining the appropriate levels of war reserve equipment and ammunition stockpiles is an uncertain process, but we are refining our techniques to achieve greater confidence in the results. We must take into account such factors as the cost of modern equipment and the rate at which it becomes obsolete. It becomes necessary to scrutinize war reserve requirements from the standpoint of affordability, and to hedge on full procurement of war reserves for an item that may be approaching obsolescence. Personnel replacements must also be considered since it does no good to stockpile equipment that cannot be manned.

Modernizing the Force to Meet a More Sophisticated Threat

We have traditionally relied on qualitative superiority in our combat equipment to offset the Warsaw Pact's quantitative advantage. More recently, however, the Soviet forces at least have been modernizing with equipment equal to or exceeding that of the NATO nations in capability. The list of such equipment affecting land forces is long: armored self-propelled artillery; mobile air defense guns and missiles; improved tanks; infantry combat vehicles; and improved strike aircraft and attack helicopters. We have responded by embarking on programs to develop and procure equipment promising significant improvements over what we have now. These include a new tank, a new infantry combat vehicle, a new

attack helicopter, improved conventional munitions and guided munitions for artillery, countermeasure-resistant antitank guided missiles, and improved air defense missiles and guns.

We continue to be concerned about two important areas emphasized by the Soviets. These are chemical and biological warfare and electronic warfare. Over the past several years Soviet forces have significantly increased their capability to fight in a chemical or biological warfare environment; we have observed new R&D in offensive weapons and the installation of defensive equipment in and on all modern Soviet combat vehicles (tanks, self-propelled artillery, air defense guns, infantry combat vehicles). Such equipment is lacking in all of our vehicles; however, the U.S. program calls for additional funding of chemical and biological warfare defensive equipment (filters, masks, warning devices, and decontamination sets). A similar situation exists in the area of electronic warfare (EW). As a result, we are increasing our proposals for both offensive EW equipment and improved defensive (antijam) capability in the design of our electronic equipment.

2. Force and Program Status

a. Force Structure

(1) Initiatives

The Army's force structure proposals continue major initiatives begun in past years -- "heavying up" the force by conversion of infantry to mechanized divisions and placing greater reliance on reserve forces through increased affiliation of Reserve Component units with active units and preparing selected Reserve Component units for early deployment. Efforts to convert support personnel to combat troops continue, but further shifts of the magnitude achieved in the last two years appear unlikely. The result of these efforts is that the Army has greater initial combat power to fight a NATO war, but its sustainability is dangerously low without immediate reinforcement. The Army is making progress in the areas of rationalization, standardization, and interoperability with NATO, but a great deal remains to be done.

This year, for the first time, we will deploy a brigade in the Northern Army Group (NORTHAG) area of NATO. This brigade, now temporarily stationed in three major European training areas, will be moved to a permanent site near Garlstedt, Germany. A U.S. peacetime presence in the Northern sector will complicate Soviet attack planning. As a result of agreements with the Federal Republic of Germany, construction is underway on the base for the brigade.

Another initiative is to improve the armor-fighting capability of certain forces by augmenting them with Tow-armed attack helicopter companies. In U.S. Army Europe (USAREUR), air cavalry troops of the

corps armored cavalry regiments and divisional armored cavalry squadrons will be replaced by attack helicopter companies using the Tow-equipped AH-1S. USAREUR will receive 75 additional AH-1S Cobra/Tow attack helicopters for these conversions, bringing the total AH-1S force in Europe to 210 aircraft. In both the 82d Airborne Division and the 101st Airborne Division (Air Assault), the number of ground and airborne antitank missile systems will be increased. One antiarmor company of 18 Tows will be added to each brigade of the 82d Airborne Division, and 33 AH-1G helicopters will be replaced by AH-1S helicopters. In the 101st Airborne division, Dragon densities will be increased, and a total of 87 AH-1S helicopters will replace existing attack helicopter assets.

The Marine Corps force structure is basically unchanged at three active division/wing teams plus associated nondivisional combat and support units and one reserve division/wing team. Within the active forces, initiatives include increases in tanks and Dragon and Tow missile densities, acquisition of improved artillery and artillery munitions, and the addition of one heavy and two medium helicopter squadrons. Compensating reductions to Marine Corps forces include the temporary cadre of nine additional rifle companies (for a total of 18 zero strength rifle companies) and the phaseout of three planned light helicopter squadrons.

(2) Force Structure Changes

The details of the land forces structure planned through FY 1982 are shown in Appendix Table 3. The number of reserve and active divisions shows no change from FY 1977 -- 16 active and 8 reserve for the Army; 3 active and 1 reserve for the Marine Corps.

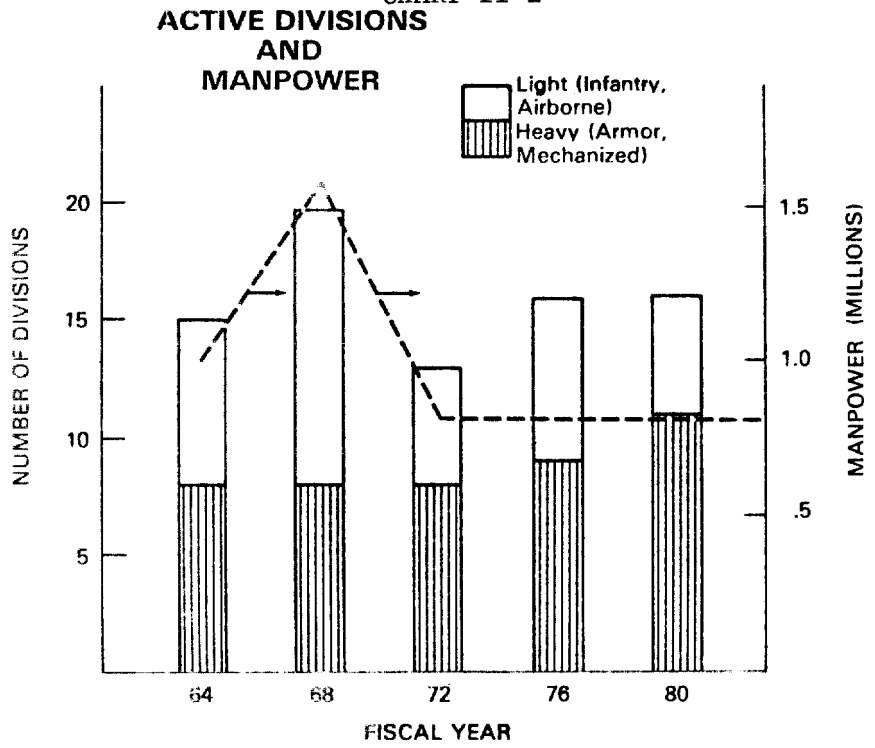
Several changes will occur in the composition of these forces. In FY 1978, the 256th Infantry Brigade (Louisiana Army National Guard) will become mechanized; this is the "round-out" brigade for the 5th Mechanized Infantry Division. During the program period two infantry divisions will be converted to mechanized. By 1982 the division mix will be:

TABLE II-1

Active Component	Reserve Component
4 Armored	2 Armored
7 Mechanized Infantry	1 Mechanized Infantry
3 Infantry	5 Infantry
1 Airborne	1 Marine
1 Air Mobile	
3 Marine	

The active forces will be weighted (58 percent) toward the armor-heavy divisions needed to counter the tank and mechanized forces of potential enemies in the European and Middle East regions. The eight light divisions provide a flexible force particularly suitable for rapid deployment in worldwide contingencies. However, they could also be deployed to mountainous and built-up areas in Europe. The total active and reserve force is equally divided between light and heavy divisions. The following chart shows the number of active Army divisions (light and heavy) and active manpower by year. Manpower levels have been constant since 1972. Despite this, we have been able to increase the number of divisions and are increasing the percentage of heavy divisions, within this constant level of total manpower.

CHART II-1



Four National Guard brigades "round out" four active divisions -- the 5th Mechanized Division, the 7th, 24th and 25th Infantry Divisions. In addition, there are 11 Reserve Component round-out battalions for various active divisions. Augmentation units include four infantry and mechanized brigades, three infantry battalions, and one armored cavalry squadron. It should be recalled that plans are for augmentation units to deploy with active units to improve combat power; the round-out units are needed to fill-out divisions to their normal, full deployment configuration. Fully equipping these Reserve Component units, which round-out or augment active divisions, accounts for a major portion of the FY 1978-82 procurement program.

Two reserve artillery battalions will be added in FY 1978, and four active battalions will be added and stationed in Europe in FY 1979. Three additional Improved Hawk battalions are programmed for the force, two for FY 1979 and one for FY 1980.

b. Force Modernization and Readiness

The acquisition costs of major land forces modernization and improvement programs are shown in Table II-2 beginning on the next page.

(1) Close Combat

We continue to believe that a land battle in a war with the Soviet Union would be dominated by the mobility and firepower of armor-heavy combined arms teams using highly capable and survivable communications and electronic warfare equipment. The proliferation of armor-heavy, highly mobile forces makes defense against them an increasing component of our other planning as well. We must continue to strive for both quantitative and qualitative improvements in tanks, armored carriers, antitank guided missiles, and other equipment.

(a) Tanks

Our tank program is designed to increase both the quantity of tanks and their survivability and firepower on the battlefield. At the end of the FY 1977 funded delivery period, the 105mm tank inventory will be only 67 percent of estimated requirements. The proposed program will increase this to 80 percent by the end of the FY 1979 funded delivery period. Chart II-2 shows projected Army tank assets through 1985 and the acquisition objective.

M-60 Series Tanks

In FY 1978 and FY 1979 we will continue to produce M-60 series tanks using the increased production capacity funded in FY 1975 and FY 1976. Tanks for the U.S. Army will be in the M-60A3 configuration while those for the USMC will not have the solid state computer or laser rangefinder. Production of new M-60 series tanks will average about 80 per month in FY 1978 and FY 1979 funded delivery period. The total request for FY 1978 for procurement of the M-60A1/A3 is $601 million; this will buy 859 tanks for the Army and 101 for the Marine Corps.

In addition we will make product improvements in M-60 and M-60A1 series tanks through a major modification program. In FY 1978, a variety of M-60 series modification kits will be procured at a cost of $94 million.

TABLE II-2

Acquisition Costs of Major Land Forces Modernization and Improvement Programs 1/
(Dollars in Millions)

	FY 1976 Actual Funding	Trans. Period Actual Funding 2/	FY 1977 Planned Funding	FY 1978 Prop'd Funding	FY 1979 Prop'd for Authorization
Close Combat					
Continued Modification and Procurement of M-60 Series Tanks (Including USMC)	502	163	559	700	731
Major Modification of M-48 Tanks	100	-	62	26	-
Development and Procurement of New Main Battle Tank (XM-1)	53	39	141	295	456
Procurement of Armored Personnel Carriers (M-113A1)	54	23	88	73	58
Development and Procurement of Mechanized Infantry Combat Vehicle (MICV)	19	3	30	90	73
Continued Procurement of Tow and Dragon Antitank Missiles (Including Marine Corps)	265	41	155	148	72
Development of Advanced Multipurpose Missile (AMPM)	-	-	-	2	22

TABLE II-2

Acquisition Costs of Major Land Forces Modernization and Improvement Programs 1/
(Dollars in Millions)

	FY 1976 Actual Funding	Trans. Period Actual Funding 2/	FY 1977 Planned Funding	FY 1978 Prop'd Funding	FY 1979 Prop'd for Authorization
Helicopters					
Product Improvement of OH-58 Light Observation Helicopter (Interim ASH)	-	-	-	19	15
Acquisition of Cobra Tow Attack Helicopters (AH-1S) (Army)	60	28	129	143	138
Acquisition of Sea Cobra Attack Helicopter (AH-1T) (USMC)	28	13	64	32	-
Development of Advanced Attack Helicopter (AAH)	71	11	131	200	179
Development of Hellfire Helicopter Launched Antitank Missile	4	.8	18	51	68
Acquisition of Utility Tactical Transport Aircraft System (UTTAS)	94	19	213	271	377
Air Defense					
Acquisition of Improved Hawk surface-to-air Missile Systems (Including USMC)	101	3	107	111	90
Continued Development of Patriot (SAM-D) surface-to-air Missile System	130	40	180	215	287
Procurement & Modification of Chaparral/Vulcan Air Defense System	42	2.7	64	68	6

TABLE II-2

Acquisition Costs of Major Land Forces Modernization and Improvement Programs 1/
(Dollars in Millions)

	FY 1976 Actual Funding	Trans. Period Actual Funding 2/	FY 1977 Planned Funding	FY 1978 Prop'd Funding	FY 1979 Prop'd for Authorization
Air Defense Cont'd					
Acquisition of the US Roland Missile System	55	12	85	131	216
Development of Low Altitude Forward Area Air Defense System	3	.5	.2	24	51
Acquisition of the Stinger Missile System (Including USMC)	23	1.7	25	105	167
AN/TSQ-73 Air Defense Command and Control System	9	1.3	42	48	-
Fire Support					
Acquisition and Modification of the Pershing IA Missile and Development of Pershing II	37	7	36	48	140
Acquisition and Modification of Lance Missile System	6	.5	83	95	9
Development of a General Support Rocket System	1	.3	5	30	24
Acquisition of New Cannon Artillery	13	-	64	284	180

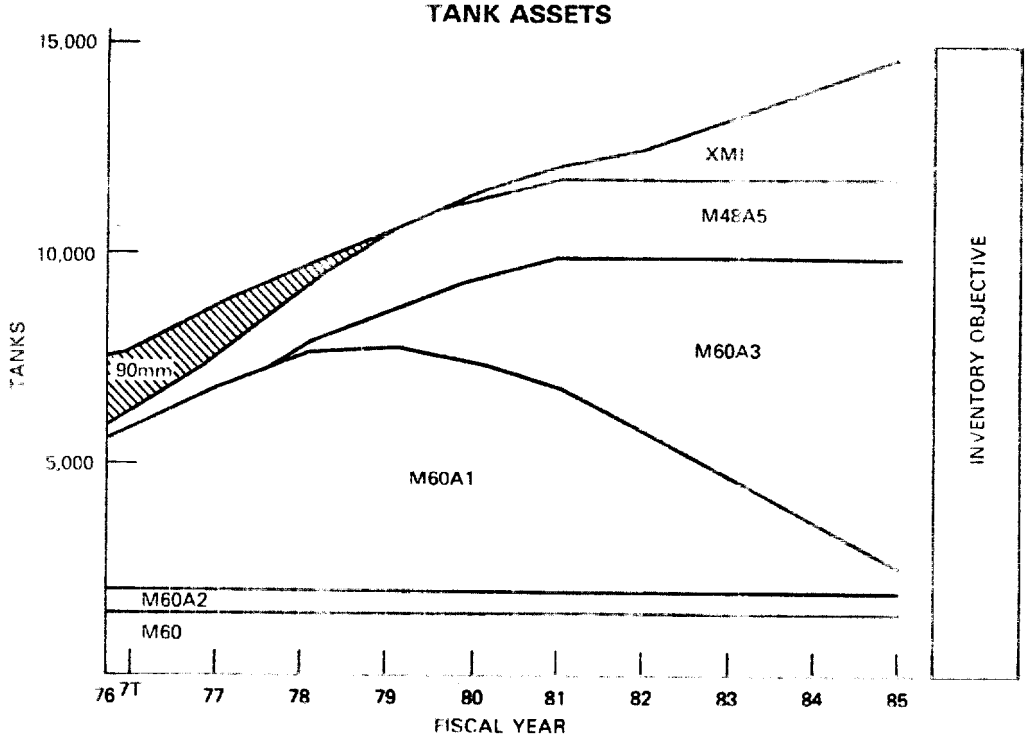
TABLE II-2

Acquisition Costs of Major Land Forces Modernization and Improvement Programs 1/
(Dollars in Millions)

	FY 1976 Actual Funding	Trans. Period Actual Funding 2/	FY 1977 Planned Funding	FY 1978 Prop'd Funding	FY 1979 Prop'd for Authorization
Acquisition of Artillery Ammunition (projectiles and propellants)	280	140	517	818	1,311
Development and Acqusition of Artillery-related Command & Control and Target Acquisition Systems	61	10	141	235	310

1/ Includes costs of RDT&E, procurement of the system and initial spares, and directly related to military construction.
2/ July 1 to September 30, 1976

CHART II-2



M-48A5

The product improvement program to convert 90mm M-48 series tanks into the 105mm-equipped M-48A5 configuration will continue during FY 1978. Kits for 171 of these conversions are funded in FY 1978 at a level of $26 million.

XM-1

The XM-1 represents a significant improvement in tank design and is an essential component of our plans to counter the quantitative advantage enjoyed by Warsaw Pact forces. The competitive validation of the U.S. development prototypes was completed in November, 1976. Prior to selection of a U.S. contractor we obtained further proposals from the two competing U.S. manufacturers to provide for growth and standardized subsystems between the XM-1 and Leopard II. In November the Chrysler Corporation was selected to initiate full-scale engineering development of a turbine-powered XM-1 tank capable of mounting either a 105mm or a 120mm gun. Current plans call for initial production tanks to be armed with the 105mm gun.

(b) Armored Carriers

M-113

In FY 1978 and FY 1979 we will procure 1,687 M-113 series armored personnel carriers. These carriers will increase critically low war reserves and replace obsolete M-114s and 1/4-ton trucks used as M-113 substitutes in CONUS-based units. In addition, 1,087 M-113A1s will be modified by the installation of the Tow system. Increased mobility and armor protection for the crew and missile are essential steps in increasing the effectiveness of this critical anti-armor system.

MICV

The Mechanized Infantry Combat Vehicle (MICV) will become the Army's first infantry combat fighting vehicle. The MICV and its related Bushmaster (25mm Automatic Cannon) and Tow/Bushmaster armored turret (TBAT) programs continue in development. Technical problems in MICV, primarily with the transmission, have in the past caused delays in the program. Following further testing, a DSARC meeting is scheduled for mid-1977 aimed at determining if the MICV is ready for low rate initial production. These initial vehicles will be equipped with the product-improved M-139 20mm gun as we await final decision between the externally-powered and self-powered 25mm Bushmaster competitors. It is our intention to hold production of vehicles with the interim system to a minimum, and we currently plan on producing not more than 250 vehicles in this configuration. The FY 1978 budget requests $90 million for the production of MICV and its related systems.

(c) Antitank Guided Missiles

Tow

FY 1978 Tow procurement funds will be used to purchase practice missiles and launchers and to equip U.S. Marine Corps units. Funds are also included to equip Tow missiles systems with thermal imaging night sights, thus increasing our capability against armor heavy forces during periods of low visibility.

Dragon

The FY 1978 and 1979 Dragon procurement request will achieve 87 percent of our inventory objective for this short-range antitank system.

Advanced Multipurpose Missile (AMPM)

This program is a research and development effort aimed at developing a next-generation antiarmor missile system that would also have an antiair capability. Although there are technological and operational problems to be overcome, the approach holds promise for increasing the capability and efficiency of ground forces at moderate cost. In the antiarmor application, the missile would be resistant to countermeasures because of very short times of flight and employment of a laser beamrider guidance system, for which there are no known practical electronic countermeasures. This guidance technique has been successfully demonstrated against armor using the Shillelagh missile and against aircraft in the Stinger Alternative program.

There is evidence the Soviets are deploying attack helicopters equipped with antiarmor missiles, and that they are developing munitions suitable for providing improved fire support. Such developments would increase the need for an enhanced and proliferated missile air defense capability for forward troops. The AMPM should be able to fill this role, thus eliminating the need for a separate, man-portable forward air defense system. The cost savings could be significant. R&D funding of $2 million is requested in FY 1978.

(2) Helicopters

Ground force helicopter programs are aimed at force modernization through a balanced program of new developments and major modifications. Since the basic helicopter airframe can have a longer service life than was believed earlier, comprehensive modification programs can exploit new technology to replace those subsystems and components most susceptible to wear. These modification programs complement our new developments. Overall inventories do not change significantly during the five-year program period while force aging is slowed.

The attack helicopter force is being structured to provide an extremely mobile antiarmor capability which can be quickly repositioned to counter massed enemy armor formations. The Army is currently studying the entire question of the optimal aviation structure for combat, but in the interim the program stresses the reorganization and increased acquisition of antiarmor attack helicopter assets in Europe to facilitate rapid massing of the antiarmor forces.

A significant accomplishment this past year has been the completion of a joint study on the feasibility of increased helicopter commonality among the Services. A joint effort is now underway to establish the policies and guidelines necessary to ensure the realization of maximum cost savings through commonality of Service helicopters.

ASH/OH-58A Improvement

The ability to bring combat power quickly and accurately to bear on an armor-heavy enemy during either the day or night is a critical need on the modern battlefield. For this purpose, the Army has sought an advanced scout helicopter (ASH) to locate and designate targets for engagement by remote ordnance delivery systems, both conventional and laser tracking. Although we have validated the requirement for an advanced scout helicopter, cost considerations have led us to seek a near term solution which provides the needed capability at a lower cost than required for a new development. Accordingly, what had been the ASH program is now restructured as a product improvement of the OH-58A light observation helicopter. R&D funding of $19 million in FY 1978 and $15 million in FY 1979 is requested to permit an initial operational capability by FY 1980 of an interim scout helicopter.

Cobra-Tow

The Tow-armed AH-1S helicopter, or Cobra-Tow, is being procured to provide near-term, high mobility, antiarmor capability and to supplement the Advanced Attack Helicopter (AAH). The Army program recognizes the relatively low cost and high payoff of modifying additional AH-1G gun ships to the AH-1S configuration. In addition to the 290 AH-1G to AH-1S modifications already in process, 200 more AH-1Gs will be upgraded to AH-1Ss beginning in FY 1978. The plan will provide a total of 795 AH-1S helicopters based on the procurement of 305 new production models continuing through FY 1979 and the modification program being extended through FY 1983.

The Marine Corps is modifying a number of their AH-1J gun ship helicopters to carry Tow missiles. Fifty-seven of the 124 AH-1Js in the Marine Corps will be configured to carry Tow and designated as AH-1Ts. The AH-1T has an uprated engine and transmission and a lengthened forward section. Of the 57 AH-1Ts, 24 will be fully equipped to fire Tow, while the remaining 33 will be configured so that a Tow kit can be easily installed at depot level. The last eight aircraft of this program will be procured with FY 1978 funds.

Advanced Attack Helicopter (AAH)

The AAH will form the backbone of the Army's helicopter antiarmor force of the future. The AAH will be capable of operating in day, night, and adverse weather and will be able to engage enemy forces with a broad range of both conventional and laser-guided weapons. A totally integrated advanced technology program, the AAH will be more reliable, survivable, easily maintained, and possess more firepower than any existing helicopter. Testing of two competitive prototypes was completed in September and Hughes Helicopters was selected to continue development of the AAH. The current program calls for procurement of 536 aircraft.

Funds are provided in FY 1978 and FY 1979 to continue Phase II of AAH development -- the integration of all subsystems in the selected airframe. An initial operational capability is planned for FY 1983.

Hellfire

Since the Hellfire antitank guided-missile is closely related to the AAH development program, it is discussed here. While the current helicopter-launched Tow missile system enables the helicopter to engage armor effectively, it is seriously limited because the launching helicopter must keep the target in sight until missile impact in order to guide the missile to the target. This tactic increases exposure time of the helicopter to ground observation and fire. The most desirable solution is a true "fire-and-forget" system. The first step in that direction is the laser-guided Hellfire missile system which, while not "fire-and-forget," provides greater tactical flexibility in that certain missile guidance modes will allow the attacking helicopter to launch and leave the target area. The Hellfire's laser designator could be mounted either in the attack helicopter itself, in another attack helicopter, in a scout helicopter, or in a ground vehicle. When the laser designator is in another aircraft or on a ground vehicle, the attack helicopter could launch the missile toward the designated target and leave, while another laser operator illuminated the target for the missile's semiactive homing laser seeker. Time of flight is shorter than with Tow and the range is greater. The current program provides $51 million in FY 1978 to continue engineering development. Procurement is scheduled to begin in FY 1980. We do not plan to equip the AH-1S with Hellfire. We are requesting $2 million in R&D funding in FY 1978 for development work on an imaging infrared seeker for Hellfire that would provide a true "fire-and-forget" capability.

Utility Tactical Transport Aircraft System (UTTAS)

The UTTAS is designed to replace the UH-1 (HUEY) in assault helicopter, air cavalry and aeromedical evacuation units. With a crew of three, it can airlift a fully-equipped Army infantry squad of 11 troops into combat, resupply these troops while they are in combat, perform aeromedical evacuation, reposition reserves and conduct other combat support missions. The UTTAS will incorporate current technology into a reliable, high performance, easily-maintained system. Government testing of two competitive prototypes has been completed. Sikorsky Aircraft Division of United Technologies, Inc. was selected to begin low-rate initial production in December 1976. The program calls for procurement of 1,107 aircraft; an initial operational capability is scheduled for FY 1979. The initial production contract, first funded in FY 1977, has been expanded to 368 aircraft.

(3) Air Defense

Theater air defense is provided by a mix of ground-based and airborne air defense systems supported by radars, command and control systems, electronic warfare equipment, and passive measures such as camouflage, decoys, and dispersion. The air defense objective of ground-based systems is to limit the opponent's effectiveness in attacking critical assets and to counter the air attack in a way which permits the land forces to maneuver without interference from enemy attack.

Improvements in air defense capabilities during the past year have included expanding the programmed force structure of selected current Army missile systems. Additionally, replacements are in development or procurement for all the major field Army air defense systems: Patriot (formerly SAM-D) for Nike Hercules and Hawk, U.S. Roland for Chaparral, Stinger for Redeye, and the AN/TSQ-73 for the AN/MSG-4 command and control system. Initial funding for development of a new low altitude forward area air defense gun system has been approved and the Army is formulating a development program for special DSARC review in early 1977.

Several new systems, wholly or partially within the air defense mission area, are candidates for NATO standardization, with Patriot, Roland, the F-16 and AWACS leading the list. We are emphasizing the complementary nature of Patriot, AWACS, and manned interceptors and ensuring that we achieve joint Army/Air Force interoperability.

Nike Hercules and Improved Hawk

Nike Hercules and Improved Hawk continue to provide high and medium altitude air defense coverage for the Army in the field. U.S. Hercules systems are deployed in Japan, Taiwan, Europe, Korea, Alaska, and CONUS, although by the end of FY 1977, the U.S. Hercules batteries in Korea will be transferred to the Republic of Korea. We envision that Nike Hercules will be completely phased out of the U.S. forces by FY 1985 as Patriot becomes available. For this reason, further U.S.-funded major improvements to U.S. Nike Hercules systems will be kept at a minimum. However, we will continue to support allies who have deployed Nike Hercules batteries.

Improved Hawk procurement and deployment continues for the Army. In addition to the two battalions procured, one each in FY 1976 and FY 1977, additional Hawk missiles are also being procured to increase the missile stockage in Europe.

Modifications to Improved Hawk will continue, owing to the electronic countermeasure threat which is expected to be much more intense by the mid-1980s.

Patriot

SAM-D was officially renamed Patriot in May 1976. Proof-of-principle tests, which were completed in 1975, successfully demonstrated the technical feasibility of the TVM (track-via-missile) guidance. Accordingly, we are proceeding with full-scale engineering development of Patriot. Integration and design testing for the engineering development model Fire Control Section (FCS) #1 has been completed and the section was shipped to the White Sands Missile Range in June 1976. Tests demonstrating system performance in an ECM (electronic countermeasures) environment, using FCS #1, began in December 1976, with a successful ECM test flight. Continuation of the development program calls for $215 million in FY 1978. The total development cost is estimated at $1.76 billion. First procurement funding is still planned for FY 1979 with initial deployment scheduled for 1984.

There is increasing interest in Patriot among many NATO nations and in Japan. The U.S. and FRG are conducting a joint study (Project Successor) on the potential role of Patriot in the defense of NATO's central region. Major results are scheduled for April 1977, in connection with decision papers and reporting for the April 1977 NATO Conference of National Armaments Directors (CNAD).

The Patriot system is being designed to be interoperable in the overall air defense system which includes AWACS.

Chaparral and Vulcan

Chaparral and Vulcan continue to provide mobile, short-range air defense for the active Army divisions and for critical facilities in non-divisional rear areas. Improvements being made to Chaparral will give the system a forward engagement capability, an improved fuse and warhead, and increased resistance to countermeasures. We have programmed procurement of additional Improved Chaparral missiles in FY 1978 for U.S. forces on the assumption that Chaparral will remain in the active forces beyond the introduction of Roland.

The Army is studying further improvements to Vulcan beyond those underway. Several improvement options, varying in levels of cost and effectiveness, have been identified and are being reviewed by the Army. Total acquisition funding for Chaparral and Vulcan in FY 1978 is $68 million.

U.S. Roland

The German/French-developed all-weather Roland missile system was chosen in January 1975 as the Army's new short-range air defense (SHORAD) missile system to replace or supplement Chaparral in the 1980s. U.S. acquisition of this system represents additional progress toward standardization of weapon systems in NATO. However, the U.S. Roland program has

experienced difficulties in transferring a foreign-designed major weapon system to a U.S. production program. These difficulties have resulted in sizeable cost increases. The restructured Technology Transfer, Fabrication and Test program is now estimated to cost $265 million. FY 1978 funding is $64 million for development and $67 million for procurement. We have approved a force level of 17 U.S. Roland batteries. This force level will provide for defense of rear area vital targets, Corps defense, and training. Procurement costs are estimated at about $1.6 billion for this force. A DSARC III production decision is now planned for October 1978.

We believe there will be a high level of interest in this system among our allies. The government of Norway has already indicated their interest in buying U.S. Roland fire units.

Low Altitude Forward Area Air Defense System (LOFAADS) Gun

Owing to the Vulcan system's age and limited capability, the Army has proposed that a new air defense gun system be acquired to increase the air defense protection of forward troops against a rapidly increasing Soviet tactical air threat. Options under consideration are to procure the European-developed Flakpanzer system (with either foreign or U.S. production) or to initiate a new U.S. development. A special DSARC meeting to address these development options is scheduled for early 1977. The Army plans to procure 654 systems to replace all Vulcan Systems except those in the airborne and airmobile divisions. Deployment is scheduled to start in 1983. In FY 1978 funding of $25 million is requested for initiation of development.

Stinger

The Army and the Marines plan to procure the Stinger man-portable missile system to replace Redeye, which provides short-range low altitude air defense for forward area ground forces. Stinger is a significant improvement over Redeye in that it has a capability to attack approaching aircraft, an identification-friend-or-foe (IFF) system, and a greater capability against infrared countermeasures and high-speed aircraft. A DSARC review for a low rate initial production decision is planned for April 1977.

AN/TSQ-73

The AN/TSQ-73 is a third-generation command and control system designed to direct the fire of Nike Hercules, Hawk, and Patriot fire units. The system's primary function is to enable the unit commander to make more effective use of his assets in the conduct of operations at the air defense battalion level, though it will also be used for similar purposes at higher levels. It will replace the existing AN/MSG-4, which

is obsolete and costly to maintain. The AN/TSQ-73 will provide digital interface with Air Force and NATO command and control systems. We plan to procure 12 sets in FY 1978 for $44 million.

(4) Artillery Fire Support

Artillery fire support systems include cannon artillery systems, surface-to-surface tactical missile and rocket systems, and associated target acquisition and fire control systems. These force elements must be capable of furnishing effective fire support to the maneuver forces with both conventional and nuclear munitions. Warsaw Pact artillery -- cannon and rockets -- outnumbers NATO artillery by a substantial margin in those forces expected to lead an attack in Europe. Besides this advantage in quantity, the Soviets have been improving the quality of their weapons. Soviet artillery has significant range advantages over comparable caliber U.S. and NATO artillery. In addition, they have deployed two types of armored self-propelled artillery; we must wait to determine how far they will go in replacing what is still a preponderant amount of towed artillery.

Soviet tactical doctrine calls for massing large quantities of artillery fire on a sector selected for a tank-led breakthrough. Unless countered, this tactic may seriously degrade the effectiveness of our lightly protected antiarmor weapons. It is unlikely that NATO (now or in the near future) will match the Warsaw Pact artillery capability in numbers of weapons. Therefore, it is important that we optimize the effectiveness of our smaller force. Several programs are under way toward this end.

Pershing

Pershing intermediate-range missiles provide one of the more responsive and survivable nuclear delivery options for the European theater commander. The Army needs to purchase 60 additional Pershing IA missiles to maintain the required stockage level. Therefore, funding of $19 million in FY 1978 and $85 million in FY 1979 is requested to reopen the production line and procure the additional missiles. The advanced technology development program for the Pershing II terminally-guided reentry vehicle will continue in FY 1978 at a level of $30 million. When developed, these reentry vehicles can be retrofitted on existing Pershing IA missiles.

Lance

There are six Lance battalions in Europe which provide a valuable capability for nuclear artillery fires to our two Corps commanders. The program to modify the existing Lance missiles with the modified warhead, an improved safety and arming device, and an improved sighting device will continue with a request of $12 million in FY 1978. The procurement of nonnuclear Lance missiles and warheads, which was initiated in FY

1977, will also allow the six Lance battalions to contribute to a conventional war by supplementing the fire support available from cannon artillery and tactical aircraft. Funds to procure an additional 360 nonnuclear Lance missiles and warheads at a cost of $78 million are requested for FY 1978.

The effectiveness of the nonnuclear Lance warhead can be significantly improved through use of high-density fragments in the submunitions. An R&D program, funded at $5 million in FY 1978, will continue development of an improved warhead using high-density fragments, improved dispersal of submunitions, pyrophoric material, and random delay fusing on a selected number of submunitions. When this new submunition warhead is ready, existing warheads will be disassembled and reloaded.

General Support Rocket System (GSRS)

The GSRS is a conceptual system that will enter development shortly. The system is a high rate-of-fire free rocket system; it would supplement the fire of cannon artillery. Although cost per round will be much higher than cannon fire, the system is cost effective because of the large investment in cannon artillery pieces that would be needed to deliver the same quantity of ordnance on target, in short periods, with cannon battalions. The GSRS will be of prime importance in the high intensity phases of a conventional war in Europe owing to its capability for delivering counterbattery fire, suppressing air defenses, and achieving high volumes of fire on area targets. In FY 1977 the Congress provided $5 million in R&D funds to accelerate this program. The OSD has responded in the same spirit by budgeting $30 million in FY 1978 to accelerate development further, because we recognize that this system has the potential for correcting a serious deficiency in the ground-based fire support available to our forces.

New Cannon Artillery

The FY 1978 program stresses procurement of self-propelled howitzer systems which are needed to reduce our shortfall in these weapons. We are requesting $119 million to procure 250 M-109 series armored self-propelled 155mm howitzers, and $109 million to procure 209 M-110A2 self-propelled 8-inch howitzers. The FY 1979 plan is to procure an additional 216 M-109 series howitzers at $103 million. The program to modify the M-110 8-inch howitzers to the M-110A1 configuration for increased range (from 17 to 29km) and improved reliability continues with a funding request of $10 million in FY 1978. There is also a possibility that the inventory of M-109 series self-propelled howitzers can be modified to achieve 30km range. The Army is presently re-engineering prototypes for testing of the proposed modification.

Full-scale production of the XM-198 towed 155mm howitzer, which has a 30km range capability, will commence with a funding request of $45

million for 148 weapons in FY 1978. The FY 1979 plan is to procure 240 weapons at $67 million. Prior to any commitment beyond FY 1979 for 155mm towed weapons, the Department is studying the best mix of towed and armored self-propelled systems for U.S. forces.

Owing to engineering development difficulties, full-scale procurement of the new XM-204 105mm soft-recoil towed howitzer has been deferred. The FY 1978 request of $11 million would initiate low-rate production of eight weapons.

Artillery Ammunition

Ammunition procurement in FY 1978 will stress building up inventories of improved conventional munitions (ICMs), rocket-assisted projectiles (RAPs), propelling charges for the new long-range weapons, and scatterable mines. A total of $434 million is requested for FY 1978 funding of these items for 155mm and 8-inch artillery. This amount includes the following items:

TABLE II-3

USMC		ARMY		
$ Millions	Quantity	$ Millions	Quantity	Type Round
-	-	70	335,000	155mm improved conventional munitions
9	21,000	57	144,000	155mm rocket-assisted projectile
		103	28,000	155mm scatterable mines
4	5,000	81	96,000	8-inch improved conventional munitions
5	6,000	5	6,000	8-inch rocket assisted projectile

Improved conventional munitions (ICM) are shells containing numerous submunitions. These rounds are much more effective against personnel than conventional high explosive rounds and have a significant antiarmor capability. The rocket-assisted projectiles provide increased range. Artillery projectiles containing scatterable mines are used to emplace mine fields rapidly in front of advancing armor, a primary benefit being to slow the attack so that direct-fire antiarmor weapons have greater engagement opportunity.

Acquisition of special tooling for the 155mm cannon-launched guided projectile (recently given the name "Copperhead") is funded at $17 million in FY 1978; low-rate initial production of Copperhead is to begin in FY 1979. We are also requesting $19 million to commence procurement of the Ground Laser Locator-Designator needed to designate for Copperhead, Hellfire, and other laser-guided weapons.

Programs concerning nuclear projectiles for artillery are discussed in Chapter I of Section II.

Surveillance, Target Acquisition and Fire Control

Effective surveillance, target acquisition, and fire control systems are as important to success with field artillery as effective weapons and ammunition. Efforts to improve U.S. capability in this area include: development and acquisition of counter-battery and counter-mortar radars, advanced acoustic weapon locator sensors, moving target/stationary target radars, remotely-piloted airborne vehicles, the TACFIRE automated fire direction and control system, and a battery-level computer for fire direction. Other surveillance systems, such as Remotely Monitored Battlefield Sensors System (REMBASS), night vision systems, and emitter locater systems, will contribute to target acquisition and battlefield surveillance.

The AN/TPQ-37 radar is a phased-array system which can locate hostile firing batteries to an accuracy of 100 meters at a 30km range. It will be linked to the TACFIRE control system to provide timely and accurate counter-battery fire. The AN/TPQ-36 counter-mortar radar is similar but optimized for locating mortars in the forward area. The existing AN/MPQ-4A weapon-locating radar is extremely limited in range, depends heavily on highly skilled operators, and is unreliable. RDT&E funding of $16 million is requested for the two radars, as well as $57 million for initial procurement of 20 AN/TPQ-36 and $24 million to procure five AN/TPQ-37s.

The Standoff Target Acquisition System (SOTAS) is an experimental helicopter-borne moving target radar system that can locate moving targets at ranges up to 30km with sufficient accuracy for artillery fire. In addition, remotely piloted vehicles (RPVs) are being developed by the Army that will have an ability to acquire targets, adjust artillery fire, and ultimately to designate targets for Copperhead or other laser-guided weapons. When developed, these systems will add important new capabilities for artillery attacks on targets beyond visual range. Funding requests for R&D include $13 million for SOTAS and $12 million for RPVs.

The TACFIRE system provides for computer-assisted fire allocation and technical fire direction of artillery. Development is nearly completed. The FY 1978 program includes funds to procure 23 TACFIRE sets at $75 million.

(5) Chemical and Biological Warfare

The objectives of the U.S. chemical warfare (CW) program are to deter the use of chemical weapons by other nations and to provide an option to retaliate in kind should deterrence fail. The United States, as a signatory to the Geneva Protocol, has renounced the first use of lethal chemical weapons or incapacitants, as well as bacteriological warfare methods. However, the United States and many of the other signatories have retained the right to retaliate with chemical weapons against a chemical attack.

The Soviet Union continues to maintain a significant chemical warfare capability. The evidence is that they regard chemical capabilities as an integral part of their offensive warfighting capability. For example, they conduct extensive training exercises and stress operating proficiency in a CW protective posture. Other Warsaw Pact nations are similarly trained and equipped. It is likely that the Soviets would consider using a combination of chemical and conventional weapons, as well as a combination of chemical, nuclear and conventional weapons -- and they have the capability to do either -- if they believed a significant tactical advantage could be gained.

Without an adequate international agreement eliminating the threat of chemical warfare, U.S. and allied capability must ensure that there is no Soviet perception of immediate military advantage. We must ensure that they see only significant political and military disadvantages to their using chemical munitions against the United States or NATO. We are, therefore, moving to achieve this capability through:

-- protective capabilities (detection, warning, medical defense, protective and decontamination equipment);

-- an adequate, available, and survivable chemical munitions stockpile; and

-- forces well-trained to use the protective equipment and to retaliate following a CW attack.

Since protective capabilities could substantially mitigate the effects of a chemical attack, the U.S. program places first priority on improving techniques for the detection, identification, and warning of chemical or biological attack, research in individual and group protection, and methods of individual and materiel decontamination. Emphasis is given to surviving and continuing operations in a toxic environment in force and logistics planning, training, and procurement. Funds for the procurement of a new personal decontamination kit, and various warning equipment and individual and collective protective equipment total $71 million in FY 1978. Additional funds for training with and replacement of such equipment totals $47 million in FY 1978.

Although priority is placed on improving our defensive capability, the U.S. maintains chemical munitions to help deter enemy first use of chemicals and to provide an option to retaliate in kind if deterrence fails. The immediate emphasis here is on increasing the availability of a variety of munitions to the theater commander. DoD's R&D program on chemical artillery and bombs is intended to maintain technical proficiency, preclude technological surprise, and provide the base for the rapid production of chemical munitions should that become necessary. The Department of Defense supports efforts to reach an acceptable international agreement to limit chemical weapons; however, these efforts remain stalled by lack of Soviet agreement to the necessary verification measures.

(6) Battlefield Electronic Warfare Countermeasures

Since the Vietnam and 1973 Middle East wars, the U.S. Army has recognized a serious deficiency in its battlefield electronic warfare (EW) capabilities. EW systems in deployed Soviet forces outnumber those in our forces by better than 4 to 1. Over the next five years, we plan to take the steps necessary to correct this imbalance. The FY 1978 request includes $79 million for procurement of three airborne electronic warfare systems:

TABLE II-4

System	Function
RU-21 Aircraft "GUARDRAIL"	Communications intercept and locator
RV-1 Aircraft "QUICKLOOK"	Radar intercept and locator
EH-1 Helicopter "QUICKFIX"	Communications locator and jammer

In addition, we propose the procurement of one ground system, the AN/MSQ-103 Teampack for radar intercept and location (20 systems funded at $22 million). For FY 1979, funding is planned at $148 million for airborne EW systems and $183 million for ground-based systems.

Programs to provide protection of U.S. electronic equipment from enemy EW are discussed in Chapter V of Section II.

B. Naval Forces

1. Program Basis

Throughout its history, the United States has depended on freedom of the seas. To ensure that freedom over the years, we have maintained a Navy second to none and we have deployed our fleet well forward, year in and year out. The presence of capable U.S. naval forces has contributed significantly to peace and stability in a dangerous and untidy world.

At the end of last fiscal year, the active Fleet included some 476 ships, in categories as follows:

1976 ACTIVE FLEET

Ballistic Missile Submarines	41
Large Aircraft Carriers	13
Cruisers	26
Guided Missile Destroyers	38
Destroyers	31
Guided Missile Frigates	6
Frigates	58
Attack Submarines	74
Patrol Combatants	8
Amphibious Lift	62
Mine Warfare	3
Auxiliaries	116
	476

Changes to this total occur almost daily as new ships are delivered and older ones are retired. The average age of the fleet is now less than 15 years, so most of the ships in commission today will still be in service as we enter the 1990s.

Over the past five years or so, the Congress has authorized construction of 106 ships which have yet to be delivered. Thus, the most significant prospective additions to the fleet are as follows:

SHIPS AUTHORIZED BUT NOT DELIVERED

5	Ballistic Missile Submarines
2	Nuclear Powered Aircraft Carriers
3	Cruisers
25	Destroyers
18	Guided Missile Frigates
30	Attack Submarines
6	Patrol Combatants
4	Amphibious
13	Auxiliaries
106	

The major program issue before us is to determine the ships which should make up the next five-year shipbuilding program to complement the existing force and the ships now under construction. Several overall concerns were addressed in the process of planning naval forces:

-- Achieving increased force levels and capabilities;

-- Improving Antisubmarine Warfare Forces

-- Improving Antiair Warfare Effectiveness;

-- Restoring a healthy shipbuilding environment;

-- Improving overall fleet readiness.

Each of these concerns is discussed in the following sections; the resulting five-year shipbuilding program is summarized in the subsequent force and program status section.

Achieving Increased Force Levels and Capabilities

In May of 1976, the Administration presented the Congress with an amended shipbuilding budget for FY 1977 -- based on preliminary results of an interagency National Security Council study of U.S. maritime strategy and long-term naval requirements -- which would have provided for 21 new ships at a total cost of $7.0 billion (including $1.6 billion for claims and cost growth associated with ships authorized in FY 1976 and prior years). In addition, $200 million was requested to accelerate research and development (R&D) in certain naval warfare areas, including V/STOL aircraft concepts. In concluding its work on the FY 1977 budget, the Congress indicated that it did not have time to address fully that proposed amendment. Rather, it authorized the construction of 15 new ships at a total cost of $6.2 billion, as follows:

FY 1977 AUTHORIZATION

1 Trident Ballistic Missile Submarine (plus long lead funding for future Trident SSBNs)

Long lead funding for a NIMITZ-class Aircraft Carrier

Long lead funding for conversion of LONG BEACH (CGN-9) to Aegis capability

3 Attack Submarines (SSN-688 class), plus long lead funding for future SSN-688s.

Funding for repair and modernization of BELKNAP (CG-26)

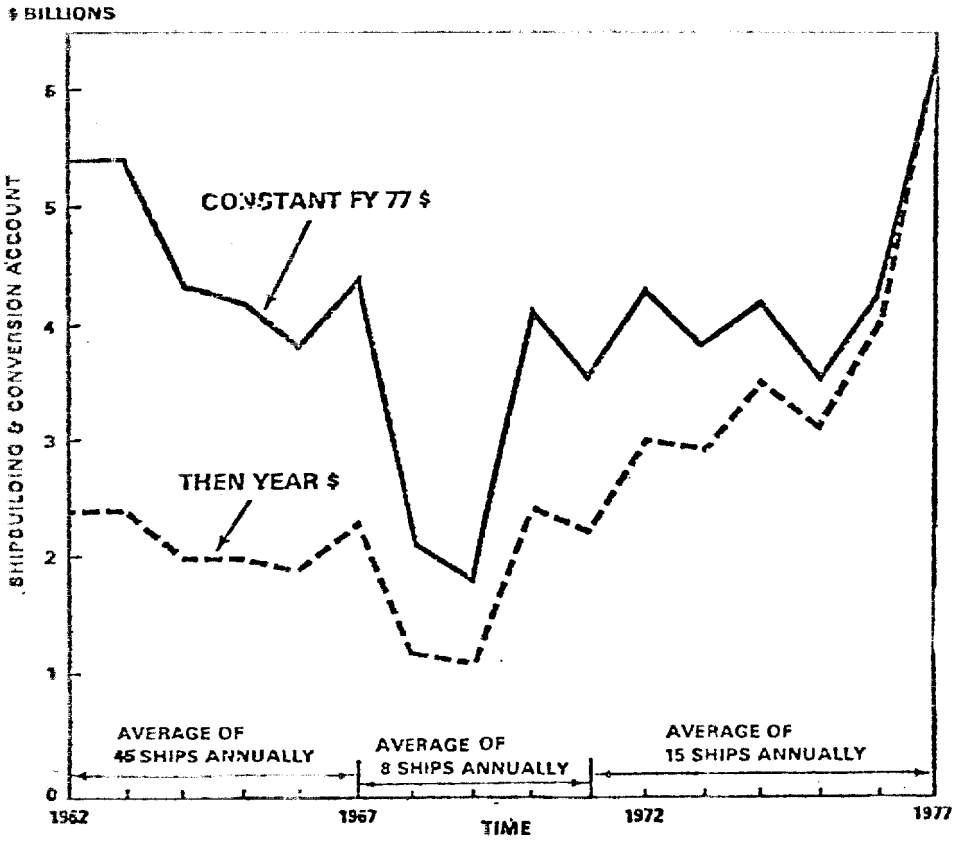
8 Guided Missile Frigates (FFG-7 Class)

3 Auxiliaries

This action continued a trend which has developed over the past decade, as indicated on this chart:

CHART II-3

HISTORY OF NAVY SHIPBUILDING



It is obvious from the chart that there had been a notably lower level of shipbuilding funding in real terms (i.e., constant FY 1977 dollars) during the last ten years compared with the funding provided in the early-to-mid-1960s. The chart also shows that even though real growth has been budgeted for FY 1976 and FY 1977, the numbers of ships authorized year after year since 1967 have been well below the numbers required for needed growth in the size and capability of the fleet. There have been many reasons for this need. One was the fact that during the war in Vietnam funds were moved from shipbuilding programs to current expenditures in Southeast Asia. Another reality was the block obsolesence of World War II ships in the 1960s and 1970. A further reason is that the funds provided

have been inadequate. Still another is that the emphasis over the past decade has been on construction of relatively small numbers of the most expensive, most capable ships. Together these factors have led to a critical problem for the country. Barring unprecedented real growth in the shipbuilding account, a continuation of the trend of past years would lead inevitably to a smaller Navy -- indeed a U.S. Navy too small to assure freedom of the seas against the threat to be faced in the future.

To perform its worldwide mission, the U.S. Navy needs more ships, and ships that are capable of meeting increasingly sophisticated opponents. This objective inescapably requires increased funding for an accelerated shipbuilding program. In addition, what money is provided must be invested in the most sensible mix of ships to do the job.

Carrier task forces give the U.S. powerful offensive capabilities for modern naval warfare. The ships which form these groups must be fast, long-range, well-armed, flexible, and battle tough. These characteristics are expensive, but worth the price, since there are almost certain to be situations in which no other combination of forces is equal to the task.

The nuclear strike cruisers and Aegis-equipped destroyers we propose will enable these carrier task groups to operate effectively in areas where the threat -- air, surface, and subsurface -- is most sophisticated and dense. Somewhat less costly ships, and therefore somewhat less capable ships (although still highly capable) are able to meet the need in lower threat areas for such missions as convoy protection, amphibious assault, mine warfare, and other equally vital missions which demand larger numbers of ships with moderately high performance. The FFG-7 class frigate is a heavily-armed surface combatant that can be procured at relatively low cost to replace the World War II destroyers and provide the fleet with the number of ships so urgently needed. These frigates are an essential part of the building program. The new CVV aircraft carrier concept, now in development, is also intended to enhance U.S. capabilities in these lower threat environments.

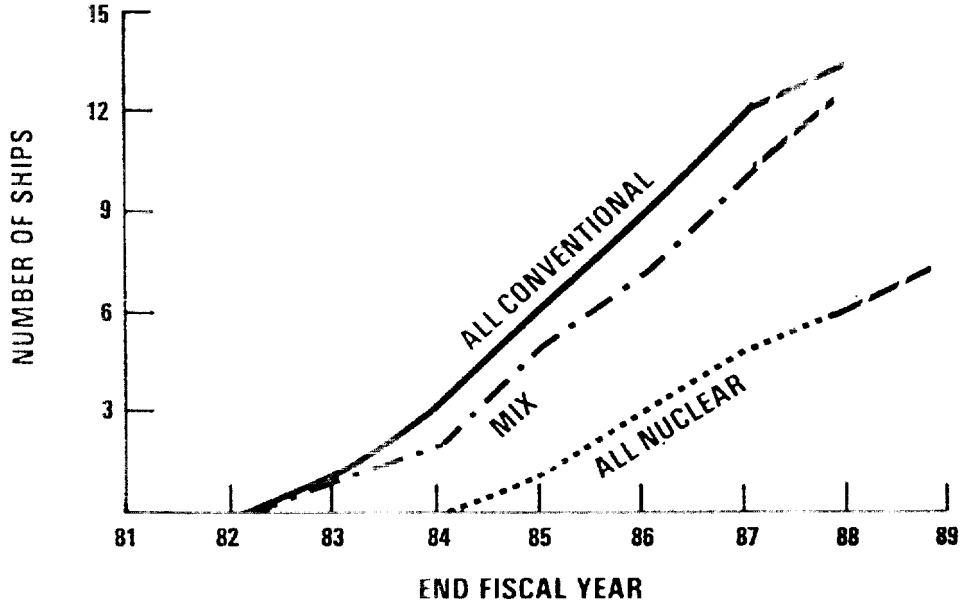
The problem of resource allocation becomes evident when the nuclear power issue is faced. For submarines, the advantages of high submerged speed, unlimited range, and independence from noisy diesel engine operations are clearly worthwhile. However, we must consider the battle situations we are likely to face and then determine those in which nuclear-powered surface ships and task forces are most cost-effective. Title VIII of the Department of Defense Appropriation Authorization Act of 1975 requires the Navy to use only nuclear power for new strike force major combatants, unless the President certifies alternative ships to Congress as being in the national interest. Strike force combatants include the nuclear carriers, CVNs, and strike cruisers, CSGNs. Cost-effectiveness comparisons, together with the need for early introduction of Aegis air defense protection have led to the proposed construction of conventionally-

powered DDG-47 class Aegis ships for the protection of some carriers. The building program for this highly capable, gas turbine-powered destroyer provides the numbers of modern escorts needed by our carrier task forces at lower cost and years sooner than an alternative all-nuclear program; the President has certified to Congress that this departure from Title VIII is in the national interest. Chart II-4 illustrates the advantages in numbers and earlier delivery to the fleet of a conventional-nuclear mix:

CHART II-4

AEGIS SHIP FORCE LEVELS

(EQUAL COST MIX)



Other means of increasing fleet capabilities include:

-- Extending the useful lives of ships by means of Service Life Extension Programs (SLEP), beginning with the Forrestal class of aircraft carriers in FY 1980. SLEP will add about 15 years to the planned 30 year life of these important ships;

-- Making effective use of Naval Reserve and Coast Guard forces, as well as capabilities inherent in the active forces of all military services, to meet maritime requirements in time of war;

-- Planning a longer production run for individual ship types, to amortize development costs, ease the fleet support burden and realize "learning curve" cost savings. Examples of this approach are:

- Continuation of SSN-688 production beyond FY 1978, instead of introducing a new class of attack submarine;

- Devising the DDG-47 program to use the hull form and gas turbine propulsion system proved in DD-963 class units now operational;

- Extending the FFG-7 frigate program, now planned for a level of 74 ships; and

- Production and sales partnerships with our allies.

Looking toward the 1990s, we are investigating the use of land-based, long endurance aircraft in sea control missions. The concept appears within the realm of near-term technology. For sea control roles this type of plane may be a lower cost alternative than some ships for combat against enemy air, submarine and surface forces. Advanced surface craft such as surface effect ships also offer possibilities as high speed combatants in the long term.

The major efforts to increase offensive firepower against surface ships have continued to emphasize deployment of Harpoon to the operating forces; development of the antiship version of the Tomahawk cruise missile; increasing, in the long term, the number of deployable surface ships, and modernization of carrier air forces. Carrier aircraft improvement is discussed under Section C., Tactical Air Forces.

A significant increase in offensive power will occur when Harpoon joins the fleet in 1977, providing our surface ships, submarines, and eventually carrier-based aircraft with a long-range, accurate, highly reliable antiship cruise missile. No less important is the marriage of the Harpoon missile system to the P-3 maritime patrol aircraft. This weapon will provide the P-3 with the ability to attack surface ships, exploiting its long endurance patrol capability and widespread basing support while not unduly detracting from its surveillance and ASW mission. This could be very important, tactically; it makes for the efficient use of existing assets.

Tomahawk, the sea-launched cruise missile (SLCM) currently under development, is a second-generation weapon which will have a 300-400 mile range, and a warhead payload of 1,000 pounds, twice that of Harpoon. The Navy has identified eight classes of surface ships and three classes of nuclear attack submarines as prospective platforms for this system.

A new offensive weapon platform will be the strike cruiser, CSGN. The Aegis antiair warfare (AAW) system, for defense against missiles and aircraft, defines the CSGN's primary role as an escort for carrier task forces. However, the combination of nuclear power, Tomahawk, Aegis AAW defense, and better passive protection features should give the strike cruiser the flexibility to operate independently of carrier air cover in

an offensive, anti-surface ship role if necessary.

Amphibious assault is a primarily naval power projection mission. When all five amphibious assault ships (LHAs) are in the force, the current objective of being able to lift the assault elements of 1 1/3 Marine Amphibious Forces (MAFs) of division size into a hostile environment will essentially be attained. Our major concern over the program period is with improving the speed of the surface ship-to-shore movement during an amphibious assault. Both the landing craft and amphibious tractors which compose the surface assault force are limited to about eight knots and favorable beach conditions, making the initial assault waves highly vulnerable. R&D programs are focusing on development of air cushion landing craft and amphibian tractors, both with greatly increased speeds and assault capabilities against a much greater variety of beach terrain.

Mine countermeasures are an essential part of amphibious assault operations. Further, effective mine countermeasures could be important in any conflict with the Soviet Union or one of its allies. Active and reserve mine countermeasures forces have undergone substantial reductions over the past decade. Currently, the surface force consists of three active and 22 reserve ocean minesweepers. This reduction has been partially offset by the greater use of mine countermeasures helicopters; there are now 21 in service. Although flexible and rapidly deployable, they are limited to shallow-water minesweeping operations and have no dedicated support ships. The surface and airborne mine countermeasures force at the end of FY 1977 represents only about one-third of the aggregate capability of the total FY 1968 force. In order to increase our capabilities and counter the projected Soviet mine technology of the 1980s, an effort is underway to introduce an improved mine countermeasures (MCM) ship.

Mine warfare can be used offensively to close ports and form ocean barriers against surface ships or submarines. Mines can be effective, are relatively cheap and easy to employ, and can be varied in terms of minefield duration, area, weapon mix, and time of attack. The Navy is developing a new family of mines to replace obsolescent ordnance now in stock and the technology compromised in Vietnam. A variety of mines is needed because different mine characteristics are required for various targets and water depths and to counter different sweep techniques. The designs of these mines emphasize economy, flexibility, lethality, and resistance to countermeasures.

Improving Antisubmarine Warfare Forces

The Soviet submarine force represents the major present and projected threat to our sea lines of communications and to our sea control efforts. Aside from accelerated ASW ship construction, a number of other important programs are being continued to counter this threat.

U.S. nuclear attack submarines have a primary antisubmarine warfare role. Efforts underway to improve their effectiveness include:

-- Development of the communications equipment and tactics necessary for reliable and safe operation of our SSNs in direct support of convoys and naval task forces. At sea results so far have indicated encouraging successes with submarines used in a direct support role.

-- Development of a wide aperture array passive sonar designed to provide almost instantaneous bearing and approximate range data on targets out to the limits of present weapons capabilities. This localization technique promises to improve further the present U.S. tactical advantage over Soviet submarines.

U.S. surface combatants have adopted many of the passive sonar techniques used by our submarine force, with similar dramatic improvements. Two major initiatives will provide the equipment to capitalize on our passive sonar advantage:

-- The Surface Ship Sonar Modernization Program (SSSMP) increases sonar equipment sensitivity and passive signal processing to allow long-range detection and classification of enemy nuclear submarines. The most important element of this program affects 52 ships with the SQS-26 sonar.

-- Towed sonar arrays are being installed on some of the FF-1052 class ships, and an advanced design system is planned for the DD-963, FFG-7, DDG-47 and CSGN classes. These extremely effective arrays, separated from the self-noise of the towing ship, have demonstrated excellent performance in recent operations in the Mediterranean Sea against representative Soviet submarine targets. In the North Atlantic we are predicting equal or better performance.

The LAMPS helicopter, which will be deployed on many of our surface ships, is being developed to match these long-range sonar improvements with a weapons delivery system of equal range. LAMPS MK III, for example, will allow a manned helicopter to attack sonar contacts over the horizon with MK-46 ASW torpedos. LAMPS MK III is planned to be operational in FY 1983.

Analyses coupled with operational fleet data consistently indicate that ASW patrol aircraft play a major role in countering the Soviet submarine threat. Accelerated P-3C procurement and introduction of new signal processor systems and advanced sonobuoys promise to improve significantly the ASW performance of our patrol squadrons.

Shipboard ASW patrol squadrons are being increased through the introduction of the S-3A aircraft aboard multi-purpose aircraft carriers (CV). Additional CVs are receiving shipboard ASW Tactical Support

Centers (TSC) to enable them to control and employ S-3As and SH-3H ASW helicopters better in ASW operations.

An important part of the program to enhance ASW capabilities is the upgrading of the current MK-46 lightweight ASW torpedo, through the Near Term Improvement Program (NEARTIP), and development of an Advanced Light Weight Torpedo (ALWT), which is expected to enter service in the mid to late 1980s. Both programs seek to harden the weapon against acoustic countermeasures and to increase the weapon's target acquisition range against the anechoic coatings which the Soviet Union now employs on all of its first line attack submarines to reduce reflected sonar energy. The ALWT technology will improve upon NEARTIP in both of these areas. In addition, the ALWT will have a more powerful warhead, greater speed, and greater depth capability than the MK-46 NEARTIP.

A necessary part of our ASW strategy is ocean surveillance. We are continuing to upgrade the present long-range underwater surveillance system (SOSUS) with improvements in signal processing capability and development of mobile shipborne systems. The Surveillance Towed Array Sonar System (SURTASS) ships that we plan to build will be capable of towing long-range passive acoustic arrays at slow speeds, effectively positioning a SOSUS station wherever it may be required. To improve the flexibility of our surveillance assets we are continuing with the development of moored surveillance buoys that can be positioned as required.

Improving Antiair Warfare (AAW) Effectiveness

The large-deck aircraft carrier with its E-2C early warning aircraft and F-14 interceptors continues to provide the fleet's first line of defense against air attack. Our overall ability to gain and maintain air superiority in many critical geographic areas will remain dependent on the capabilities of our modern carriers with the most capable aircraft. However, the cost of these ships and concern for their possible vulnerability in some situations have led us to investigate other ways to accomplish the interception of attacking aircraft and missiles. One possibility, mentioned earlier, is development of a land-based, long-range, long-loiter aircraft equipped with early warning radar and armed with long-range air-to-air missiles, as well as ASW and anti-surface ship weapons. Another possibility is development of improved Vertical/Short Take-Off and Landing (V/STOL) aircraft having the required interceptor capability but operable from platforms smaller than today's carriers. Such aircraft would make it possible to disperse airpower by operating from smaller, possibly more numerous, carriers and from other types of ships such as strike cruisers. As these developments are successfully realized, it should be possible to avoid the cost of additional large-deck carriers in the future and to reduce the vulnerability of U.S. air assets by basing them more widely throughout the fleet.

One of the major conclusions of the recent in-depth review of U.S. naval forces has been that the U.S. Navy is vulnerable to the Soviet antiship cruise missile threat. The primary effort to correct this vulnerability in the long term is procurement of the strike cruiser and DDG-47 class Aegis-equipped surface combatants for carrier task force protection. The FFG-7 class frigate with her excellent area air defense SM-1 missile system is also being built to provide protection against less intense aircraft and cruise missile attacks on the merchant shipping, amphibious ships, and replenishment forces which the FFG-7 will be called upon to escort in lower threat areas.

In the near term, we are taking four steps to improve our surface ship antiair warfare capabilities:

-- increasing procurement of Standard Missile One (medium-range) to correct a serious shortage in the numbers of these area air defense missiles carried by most of our AAW missile-equipped surface combatants;

-- accelerating missile conversion and programmed procurement, beginning in 1980, of the Sea Sparrow family of point defense missiles in order to correct another prospective shortage;

-- increasing procurement of new high performance surveillance radars and sensors, primarily for installation on those surface combatants assigned to carrier task groups, including the SPS-49 radar, and radar automation improvements; and procurement of the Target Acquisition System (TAS) for the DD-963 class destroyers;

-- emphasizing research and development on such programs as the improved Standard Missile Two (medium- and extended-range) and vertically-launched missiles so that we can have the weapon systems in hand to combat the threat of the 1980s. Vertical launch design allows high rate of fire and less expensive launchers.

These programs are in addition to others which are unchanged, such as procurement of the Phalanx high rate-of-fire point defense gun systems for most surface ships and design-to-price Electronic Warfare systems.

Programs to counter the cruise missile threat are designed to be balanced and mutually supporting. The FY 1978 budget request is based on the need to provide defense in crisis confrontations against surprise attack and to provide defense in depth in sustained conflict against the air- and submarine-launched cruise missile threat to the sea lanes. Finally, we are attempting to minimize the adverse effects of long lead times and threat uncertainties by balancing the requirement for effectiveness against today's threat with the need for flexibility and growth potential for the future.

The Soviets have spent considerable effort developing an effective worldwide ocean surveillance network with surface ship surveillance and targeting potential. This network, which we term the Soviet Ocean Surveillance System (SOSS), employs data from sources which range from radar and electronic intelligence ocean surveillance satellites to extremely sensitive direction finding receivers which exploit our radio transmissions. We are being hard pressed to counter this massive effort. We must urgently accelerate our capability to hinder this surveillance activity in order to provide improved cover to our surface forces. We recognize this need, and several development and procurement programs are underway.

Restoring a Healthy Shipbuilding Environment

Construction of naval ships in commercial shipyards continues to be plagued by long delays, unanticipated costs, and strained relations between industry and the government. The principal causes include an insufficiently skilled work force, difficulties in satisfying both government and private demands with available facilities, and the failure to account for the unexpected rates of inflation over the relatively long construction periods inherent in ship construction. Contracts entered into in the past now are being challenged in the legal courts. The high money value of shipyard claims and the complexity of the claims themselves have so delayed settlement that the Department has had to resort to court judgments to ensure continued ship construction.

We feel that the lowest point in the relationship between the government and the shipbuilding industry has been passed, although continuing future progress in this area will be necessary.

Efforts are underway in the Department to:

-- Ensure that ship contracts will provide for construction of high-quality ships at a reasonable cost and on time, while offering a fair profit. Increased labor productivity should become possible as a result of stimulating increased capital investment.

-- Reach fair and reasonable settlement of outstanding claims; and

-- Further investigate options to improve shipbuilding output and efficiency.

Improving Overall Readiness of the Fleet

The hard lessons of history teach us that in time of peace a nation's armed forces are seldom ready for war. I find that the United States has been no exception to this rule. It makes little sense to procure advanced systems if they are not manned and operated effectively.

We are determined to improve fleet readiness. The readiness is a highest priority objective.

Personnel readiness is a significant part of unit readiness. The FY 1978 defense program increases the number of billets in mission essential ratings in order to man properly the current fleet and minimize the shortage of qualified petty officers. Our sailors' training has received strong emphasis. Resources are provided to increase student billets, fund essential training plans and training aids, and meet the requirements for specialized and flight training. In addition, we are proposing a sea pay program to alleviate readiness deficiencies reflecting shipboard shortages of E-5 and E-6 middle-grade enlisted personnel. This subject is further addressed in the Manpower chapter of this Report.

The question of the proper role for the Navy Reserve in providing the active fleet with the most effective and timely support in time of war is under critical review. As highly sophisticated combat systems have entered the fleet, it has become more difficult to find areas in which naval reservists can be utilized. A modern submarine or destroyer requires full time dedicated manning of combat systems and most powerplant equipment to maintain operator skills and ship combat readiness. We are reviewing all components of the Navy to identify areas in which reserves can effectively be utilized. This year we are adding two fleet tugs to the naval reserve and are planning on the procurement of a new class of minesweeper for reserve manning which will replace those currently in the reserve fleet. Five ammunition ships are being placed in a reduced manning status with reserve augmentation planned for wartime use. Reserve augmentation for the shore establishment is being reviewed. In the meantime, in accordance with our effort to increase the offensive capabilities of the fleet, we have decided to retain more active manned surface combatants in the long term than previously programmed. The result will be a slight decline in Naval Reserve Force surface combatants during the five-year program period.

The material readiness of the fleet, badly eroded during the Vietnam era, is gradually improving. Recovery has been hard, with few simple solutions. This year's defense program continues the recovery in several ways:

-- funds are provided to increase ship overhauls in order to eliminate most of the large backlog of overdue overhauls not later than the end of FY 1982.

-- programs are proposed this year to increase funding for repair parts and consumables needed for on-board maintenance.

-- money and effort are being spent on improving ship maintenance facilities and organizations at both the intermediate maintenance and depot level.

The FY 1978 budget supports a slightly increased level of steaming and additional flying hours for operating forces. This level will give our ships and aircraft only the minimum operational time they need to perform the absolutely necessary combat training.

A chronic difficulty in improving readiness has been the inability to measure readiness with objectivity, consistency and accuracy. The Navy has identified this as a major readiness improvement objective, and has made some progress in methods of reporting and displaying combat readiness. This effort will continue.

2. Force and Program Status

During CY 1976 we conducted a major review of naval force requirements and their implications for our shipbuilding program. The programmed forces to meet these requirements for the five-year period are displayed in Appendix Table 4. We will maintain 13 carriers and increase the number of surface combatants and attack submarines. In order to fill this expanding and modern force structure, the specific programs proposed for funding in FY 1978 continue to be substantial. The display in Table II-6 provides the acquisition costs of the major modernization and improvement programs for our naval forces. Table II-5 presents the five-year plan for construction of naval ships in the FY 1978-82 period, in response to the requirement of Title VIII of the Department of Defense Appropriation Authorization Act of 1975. There are several changes from last year's plan which should be noted.

-- The new program will build 157 new ships in 5 years, compared to 111 ships in the program submitted last year, and SLEP or convert 21 major vessels. Much of this increase is associated with faster procurement of frigates, mine countermeasures ships, amphibious ships and necessary auxiliaries, particularly fleet oilers;

-- Greater weight is given to technological developments possible for the superpowers, and some lesser powers as well, which could be crucial in the overall maritime balance. In particular:

- the prospective availability of cruise missile technology, which makes land-based and sea-based air defense systems more significant than ever before in naval warfare;

- developments in space systems which could dramatically improve detection, identification, tracking, and long-range targeting of ships at sea;

- advances in electronics, miniaturization, and guidance which would improve longer range weapons;

Table II-5

FIVE-YEAR SHIPBUILDING PROGRAM

	FY 78	FY 79	FY 80	FY 81	FY 82	Total FY 78-82
TRIDENT (SSBN)	2	1	2	1	2	8
SSN 688	2	1	1	2	2	8
CV (SLEP)*	-	-	(1)	-	(1)	(2)
CVV	-	1	-	1	-	2
CSGN	-	1	-	-	1	2
DDG-47	1	-	3	3	3	10
DDG-2 (Conversion)	-	-	(6)	(6)	(6)	(18)
FFG-7	11	11	12	12	10	56
FFGX	-	-	-	1	1	2
LX (LSD-41)	-	1	-	2	3	6
MCM	-	1	6	6	6	19
AO	4	4	2	2	2	14
AOE	-	-	1	-	-	1
AD	-	1	1	-	-	2
AR	-	1	-	-	1	2
AGHS (Conversion)	(1)	-	-	-	-	(1)
T-AGOS	-	3	5	4	-	12
T-ATF	5	2	-	-	-	7
T-ARC	-	1	1	-	-	2
T-ASR	-	-	2	2	-	4
TOTAL New Ships	25	29	36	36	31	157
Conversion/ SLEP	(1)	(-)	(7)	(6)	(7)	(21)

FYDP NUCLEAR-POWERED SHIP CONSTRUCTION PROGRAM
(Required by Section 803, Title VIII)

	FY 78	FY 79	FY 80	FY 81	FY 82	Total FY 78-82
SSBNs	2	1	2	1	2	8
SSNs	2	1	1	2	2	8
Surface Combatants	-	1	-	-	1	2

TABLE II-6

ACQUISITION COSTS OF MAJOR NAVAL FORCES MODERNIZATION AND IMPROVEMENT PROGRAMS 1/
(Dollars in Millions)

	FY 1976 Actual Funding	Trans. Period Planned Funding 2/	FY 1977 Planned Funding	FY 1978 Prop'd Funding	FY 1979 Prop'd for Authorization
Aircraft Carriers					
Acquisition of the CVV Carriers	-	-	5	14	1,262
Surface Combatants					
Development and Procurement of AEGIS-Armed Destroyers (DDG-47) and Strike Cruisers (CSGN) and Development of the Supporting Combat Systems Engineering Development Site (CSEDS)	45	7	125	1,181	1,325
Conversion of USS LONG BEACH (CGN-9) to an AEGIS Ship	-	-	11	-	-
Acquisition of Guided Missile Frigate (FFG-7) (formerly Patrol Frigate)	973	-	1,283	1,616	1,986
Study and Development of Advanced Naval Vehicles (Includes Surface Effect Ship SES)	36	17	48	44	92
Antiship Missiles					
Acquisition of the HARPOON Antiship Missile	155	55	185	175	174
Development and Acquisition of the TOMAHAWK Antiship Missile	94	37	119	234	143

TABLE II-6

ACQUISITION COSTS OF MAJOR NAVAL FORCES MODERNIZATION AND IMPROVEMENT PROGRAMS 1/
(Dollars in Millions)

	FY 1976 Actual Funding	Trans. Period Planned Funding 2/	FY 1977 Planned Funding	FY 1978 Prop'd Funding	FY 1979 Prop'd for Authorization
Fleet Air Defense					
Continued Development of AEGIS Ship Air Defense System	66	10	26	27	14
Procurement of STANDARD SM-1 Missiles	29	7	78	105	98
Procurement of PHALANX CIWS	23	-	46	163	192
Procurement of Electronic Warfare Systems	6	-	53	66	-
ASW Aircraft					
Continued Procurement of the P-3C Patrol Aircraft	173	49	239	322	329
Modification of SH-3 Helicopter	49	9	30	77	67
Modification and Acquisition of the Light Airborne Multi-Purpose System (LAMPS)	24	4	74	107	72
Undersea Surveillance Systems					
Development and Deployment of SOSUS and Improved SOSUS and Development of SURTASS	127	22	115	146	55
Attack Submarines					
Procurement of SSN-688 Class Nuclear Attack Submarines	590	189	1,291	531	548
Acquisition of MK-48 Torpedoes	119	7	139	163	175
Acquisition of the AN/BQQ-5 Sonar System	57	43	65	100	-

TABLE II-6

ACQUISITION COSTS OF MAJOR NAVAL FORCES MODERNIZATION AND IMPROVEMENT PROGRAMS 1/
(Dollars in Millions)

	FY 1976 Actual Funding	Trans. Period Planned Funding 2/	FY 1977 Planned Funding	FY 1978 Prop'd Funding	FY 1979 Prop'd for Authorization
Amphibious Lift					
Procurement of the LSD-41 Class	-	-	3	6	232
Mines and Mine Countermeasures					
Acquisition of CAPTOR ASW Mines	36	9	65	88	145
Development of QUICKSTRIKE Mines	8	2	5	6	5
Development of PRAM Mines	2	1	6	14	18
Development of the Submarine-Launched Mobile Mine (SLMM)	3	-	3	1	-
Acquisition of the Mine Countermeasures Ship (MCM)	-	-	4	3	61
Mobile Logistic Support Force Ships					
Procurement of Underway Replenishment Ships	245	-	102	612	563
Procurement of Fleet Support Ships	309	-	579	570	410

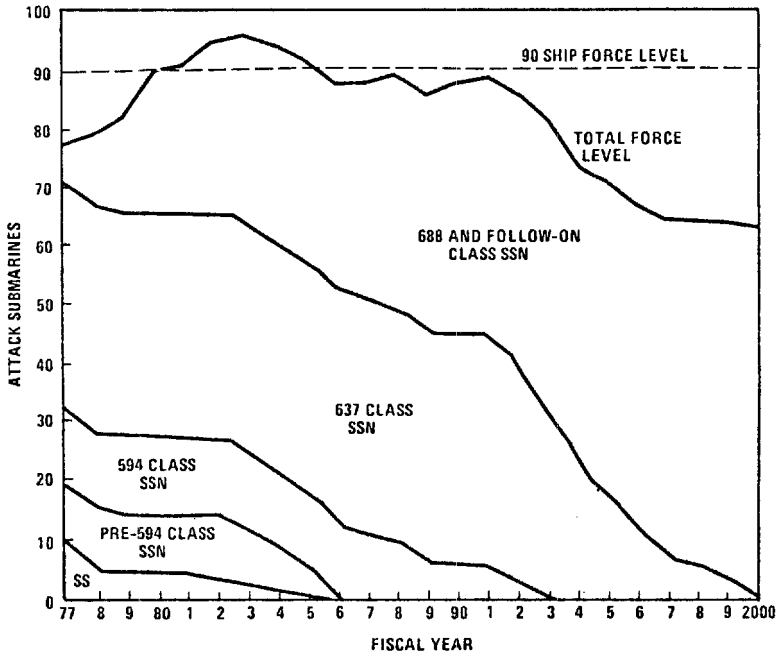
1/ Includes costs of RDT&E, procurement of the system and initial spares, and directly related military construction.
2/ July 1 to September 30, 1976.

- increased capabilities for long-range ordnance delivery, including tactical and theater ballistic missiles, air-launched and sea-launched cruise missiles (ALCM, SLCM) and land-based air (e.g., Backfire);

-- Eight SSNs are proposed, avoiding further increase in the backlog of ships authorized but not under construction, which will achieve a force level of 90 SSNs by FY 1982. The SSN authorization rate must increase in the years beyond the current five-year planning period to maintain that force level.

CHART II-5

ATTACK SUBMARINE FORCE LEVELS*



* ASSUMES CONSTANT BUILDING RATE OF 2 PER YEAR AFTER FYDP YEARS

-- Procurement of the additional NIMITZ-class carrier considered in FY 1977 budget deliberations is not requested. The plan is to proceed as rapidly as possible with the design and construction of new 40,000-50,000 ton V/STOL carriers (CVVs), equipped with catapults, as an alternative to additional large-deck carriers in the 1990s and beyond.

a. Aircraft Carriers

When one looks at the geo-political facts of the world in which we live -- and that in which we are likely to live for the next two or three decades or more -- it becomes clear that the U.S. has to begin dispersing, somewhat, its aviation capability at sea. It was tempting to

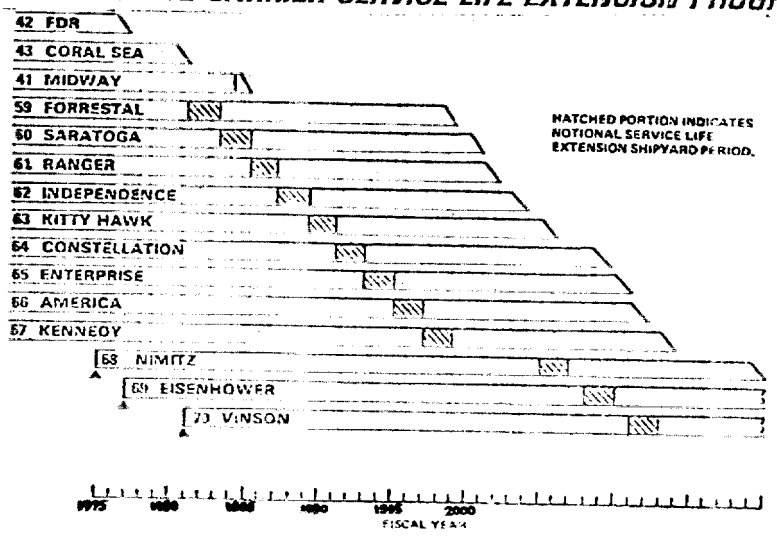
propose building still one more large nuclear carrier, with its minimum cost at $2.2 billion. The proposed five year program was developed with a full appreciation of the power, teamwork, and flexibility represented by a task force built around one of our largest aircraft carriers. But the broad thrust of the recently completed National Security Council study drives the decision down another path -- to a larger total number of aircraft carriers, some of which are not quite as individually capable, and, therefore, are not so costly.

Carrier Service Life Extension Program (SLEP)

We plan to conduct major overhauls on Forrestal and subsequent classes of carriers to extend their useful service lives by 10-15 years. This SLEP will be initiated in FY 1980 on a CV-59 Forrestal-class carrier. It is anticipated that completion of such an extension overhaul will require a shipyard period of about two years. Chart II-6 shows the long-term implications of the SLEP plan.

CHART II-6

REPRESENTATIVE CARRIER SERVICE LIFE EXTENSION PROGRAM



b. Surface Combatants

Surface combatants operate in mutual support with carriers, amphibious lift ships, underway replenishment groups, and convoys in wartime and for forward deployment, deterrence and crisis response in peacetime. These missions demand a substantial number of ships. At the end of fiscal year 1977, we will have a total of 195 surface combatants (165 active and 30 reserve), plus 12 ASW-capable Coast Guard cutters which would come under Navy control in wartime. These numbers are inadequate to sustain current peacetime deployment levels, and clearly are insufficient to meet estimated wartime requirements at a reasonable level of risk. As indicated, this deficit has resulted from a number of factors, including the block

obsolescence of World War II destroyers, 34 of which will still be in commission at the end of FY 1978. If the proposed shipbuilding programs are fully implemented, by the end of FY 1985 we will have about 264 active and reserve surface combatants. Of these, 139 will be ASW/AAW capable, and 125 will be primarily ASW ships.

CSGN/DDG-47

Last year we proposed, for the first time, the construction of two new classes of surface combatants, a nuclear-powered strike cruiser and a gas turbine-powered destroyer, both of which would carry the Aegis air defense system in addition to modern ASW systems and cruise missiles. The President certified that a mixed program of these ships was in the national interest. The Congress decided to delay action on the new ships and instead funded the modernization of the cruiser Long Beach as the first Aegis ship. While there have been many studies of the propulsion plants, costs, building times, and capabilities of the CSGN and DDG-47, there has been little argument over the necessity to provide a substantial number of Aegis surface combatants to the fleet. Therefore, two lead ships are requested again in the FY 1978 authorization -- full funding for a gas turbine-powered DD-963 derivative (the DDG-47) and long lead funding for a nuclear-powered strike cruiser. Delay in the decision to start these ships would prolong the introduction of Aegis in the numbers necessary to provide adequate antiair and antimissile protection to the fleet.

Perry-Class Guided-Missile Frigate (FFG-7)

Carriers, cruisers and destroyers operate in mutual support as carrier task groups against concentrated enemy air, surface, and submarine forces, and are designed and built accordingly. However, the majority of naval operations, such as transit, convoy, and replenishment takes place in open ocean areas, where the threat is less concentrated, but still capable and diverse. These missions require large numbers of escorts. For this reason, we are continuing to request the authorization of additional FFG-7s at a rate consistent with shipyard capacity. The FFG-7 frigate is equipped with a general purpose missile launcher which can fire the Harpoon surface-to-surface missile for offensive operations against surface ships as well as the Standard SM-1 surface-to-air missile for antiair warfare. Antisubmarine warfare equipment will include the long-range towed array detection system, TACTAS, backed up by a hull-mounted sonar, and two LAMPS helicopters for long-range ASW torpedo attack. Other armament includes a 76mm dual purpose gun, a rapid-fire close-in AAW weapon system, and ASW torpedo tubes. When delivered in December 1977, the FFG-7 will be the most heavily armed ship of her size in the world. The FFG-7 will have significantly better capabilities than Soviet surface combatants of similar displacement, such as the Krivak class of destroyers. Eighteen FFG-7s have previously been authorized and $1.6

billion for 11 more is requested in the FY 1978 budget. Preliminary conceptual studies have started on the FFGX, a follow-on to the FFG-7 in the mid-1980s.

PHM/Advanced Naval Vehicles

Completion of corrective actions on the PHM-1 this year will permit us to gain technical and operational experience with this type of antisurface ship platform. Then we can proceed with confidence to construct the five additional ships fully funded in the FY 1977 budget. With a force of six PHMs and the "mother ship," the AGHS, we will gain a better understanding of the employment opportunities for advanced ships and will refine the design and construction requirements that would be imposed by future hydrofoil vessels. Design and development of the PHM was conducted as a NATO project with full German and Italian participation; Germany may now also procure PHMs for its Navy.

The Surface Effect Ship (SES) program is a single ship R&D prototyping effort oriented toward the design and development of a 3,000 ton test ship (3KSES). In FY 1978 we are requesting $44 million to continue this program. This platform should provide the opportunity to test an 80 knot SES by 1983. The ship will be provided with selected antisubmarine warfare systems in its initial configuration; it will be equipped with Harpoon and Standard missiles, which will provide a potent antisurface and antiair capability as well. This initial ship will operate in a demonstration role to permit integration of weapons, sensor, and platform technologies.

c. Antiship Systems

Harpoon

The Harpoon missile system continues as a major effort to counter the Soviet surface ship threat. Operational test and evaluation (OPEVAL) of the Harpoon system was set back in 1976 because of random failures in the missiles and difficulties with the automated missile test sets at the weapons station ashore. However, the Navy is confident that those problems have been solved and has recently resumed OPEVAL, which is now scheduled to be completed by early 1977. Based on the expectation that the missile system will prove effective and reliable, which preliminary OPEVAL results tend to confirm, we are requesting $153 million for procurement of 315 missiles in FY 1978.

Harpoon will be deployed on 215 surface ships, 88 submarines, all P-3 aircraft in the 24 active force P-3 squadrons, and in some of the A-6 aircraft in the 12 active force A-6 squadrons by 1985. This 60 mile, mach 0.8 missile with its active radar terminal acquisition system is estimated to have a high probability of kill against Soviet surface combatants.

Tomahawk

Initial procurement of Tomahawk, the sea-launched cruise missile, is programmed for FY 1979; in the interim, the Navy is developing employment concepts and defining other elements of the total system for efficient use of such a system. Both nuclear and conventional applications of the Tomahawk have been described earlier in this Report. In the future, the longer range cruise missile could have a significant impact on naval warfare and force structure. We, therefore, need to maintain our advantage in this technology.

d. Fleet Antiair Systems

In addition to pursuing the Aegis ship program, we need to improve the ability of other naval forces to combat the aircraft and cruise missile threat as outlined earlier in this section. Three major programs for such improvement are requested in the FY 1978 budget.

Standard SM-1 Missiles

Procurement of 480 Standard Missile One (Medium Range) surface-to-air missiles will begin to correct a serious shortfall in our inventory. This missile is the primary armament of most of our AAW surface combatants. The number of launcher rails will more than double upon delivery of all the FFG-7 frigates.

Phalanx

Procurement of 21 Phalanx Close-In Weapon Systems for retrofit, and procurement of about as many more for new construction ships, will mark the beginning of the Navy program to equip essentially all surface ships with a point defense capability against surface and submarine-launched cruise missiles. Phalanx is a lightweight, relatively low cost, stand-alone rapid fire gun system which complements other AAW systems. The Phalanx development program is moving toward final evaluation. Funding was released last year by the Congress subsequent to Navy demonstration of satisfactory progress in Phalanx effectiveness. The Phalanx Operational Suitability Model is now installed in the USS Bigelow (DD-942) for Technical and Operational Evaluation. The results of the ongoing tests will be forwarded for review at a DSARC III meeting scheduled for late FY 1977 before any production decision is made.

Electronic Warfare Systems

Procurement of 89 design-to-price Electronic Warfare (EW) systems will commence a program to replace the obsolete and unreliable systems currently in the fleet. The new system will have three variants, each with a different capability and cost. The Navy has tailored this and other EW programs so that each ship will have capabilities commensurate

with the threat it can be expected to encounter. A production decision is scheduled for mid FY 1977.

e. ASW Aircraft

The Navy's ASW aircraft force includes a mix of fixed and rotary wing aircraft which operate from carriers and other sea-based platforms as well as long-range maritime patrol aircraft which operate from land bases.

(1) Fixed-Wing Aircraft

S-3A

Introduction of previously procured S-3 aircraft is continuing on schedule. Several carrier deployments have been conducted with embarked S-3 aircraft and fleet reports indicate significantly improved performance relative to the S-2 aircraft which they have replaced. S-3A operational readiness has suffered from lagging logistic support, now being corrected as fleet introduction approaches completion.

P-3

In order to take advantage of the increased effectiveness of the P-3C, limit force aging and maintain force levels, we have decided to make a modest increase in the procurement rate of P-3C aircraft. Accordingly, funds for procurement of 14 P-3C aircraft are included in the FY 1978 budget. We are also proceeding with an earlier phaseout of obsolete reserve SP-2 aircraft and an accelerated reserve squadron transition to the P-3A/B. This will be accomplished by temporarily accepting a slight drawdown in the number of P-3 aircraft normally assigned to each reserve squadron. These units are scheduled to achieve an all P-3 force of nine aircraft per squadron in FY 1980. We also are initiating the conceptual phase of a further improvement in the P-3. Tentatively designated P-3X, this development program would provide an aircraft with a longer range and improved mission capability over the P-3C.

(2) Rotary-Wing Aircraft

SH-3

We have decided to reduce active force SH-3 helicopter forces commencing in FY 1978. In order to make better use of available assets with reduced costs, the Navy will reallocate some carrier-based ASW SH-3s to DD-963 class ships to operate as interim LAMPS helicopters in an ASW role. In carrying out this change, the Navy plans to operate a reduced active force level of 72 improved SH-3Hs (six helicopters per carrier task group). These helicopters will operate from the aircraft carrier in both the ASW and the search and rescue role and from the DD-963 class

ships in the ASW role. The Navy plans to evaluate, through analysis and fleet exercises, the effectiveness of SH-3Hs operated from DD-963s, FFG-7s (if practicable) and CVs in order to determine optimum employment within carrier task forces. The SH-3H modification program has been reduced to reflect these changes.

LAMPS MK III

The LAMPS MK III development program received an extensive DSARC review in 1976. On the basis of this review and the status of at-sea testing, a decision was made to issue the Request-for-Proposal to industry for the airframe and engine. We are continuing to proceed with a cost-reduction development plan in which the Army UTTAS airframe will be considered as a candidate for LAMPS MK III. Although we feel confident that a UTTAS candidate will be adequate to perform the LAMPS MK III missions, the Navy plans to consider all candidates in the LAMPS MK III competition. The program will be reviewed again in 1977 prior to award of the prototype aircraft contract.

LAMPS MK III will be used to extend the surface combatant ASW, radar, and electronic intercept horizon and increase weapons coverage against surface and submarine targets. The range and endurance envisioned for LAMPS MK III will enable ASW redetection and torpedo attack at tactically significant ranges based on data initially provided by shipboard active/passive sonar systems, particularly TACTAS towed arrays. In addition, the LAMPS MK III will be capable of providing over-the-horizon targeting for ship-launched Harpoon antiship missiles.

f. Undersea Surveillance Systems

SOSUS

The fixed undersea surveillance system (SOSUS) is the principal means of detecting and tracking submerged submarines in those important areas of the world where it is located. A comprehensive, long-term, fixed undersea surveillance program is currently under review. This program will cover a ten year period and include all foreseeable installations. Consideration is being given to replacement of current arrays in the southwestern Atlantic and the Norwegian Sea, and deployment of new arrays in the northern Pacific/Gulf of Alaska and the northern Atlantic.

SURTASS

The Surveillance Towed Array Sensor System is entering full-scale development with at-sea tests scheduled for 1977 and an operational evaluation planned in early 1978. This expected progress will support the proposed building of 12 SURTASS ships starting in FY 1979. SURTASS ships will provide a mobile surveillance capability. They will supplement

the fixed SOSUS installations by providing information in areas without fixed arrays such as the Mediterranean Sea.

g. Attack Submarines

It has been decided to continue production of the SSN-688 class attack submarine until at least the mid-1980s, rather than to introduce a new generation submarine. The SSN-688 design began at-sea testing last fall, with the sea trials of USS Los Angeles, the lead ship. Initial results were encouraging; the ship exceeded the 31 knot design speed specifications and showed improvements in sound quieting. The Los Angeles class will be the best attack submarine in the world for some time to come. Ancillary programs include development of a wide aperture array sonar for rapid target localization and attack, the backfit of the SSN-688s high performance BQQ-5 sonar to the 39 ships of the SSN-637 class, and deployment of submarine-launched Harpoon. BQQ-5 sonar is already at sea on some SSN-637 class submarines; submarine-launched Harpoon will be operational this fiscal year. We plan to procure eight SSN-688s in the five-year program to reach a total of 91 nuclear attack submarines by 1982; a faster building rate will be necessary in the 1980s. At least 56 of these are needed in the ASW barrier role; the remainder are required for open ocean ASW operations, for task force and convoy direct support, and other missions.

h. Amphibious Lift

The amphibious ship force is the newest in the Navy with an average age of ten years at the end of FY 1977. Over the program period, the capability of the amphibious ship force will increase with the delivery of the four LHAs under construction. The first LHA was delivered during FY 1976; one LHA will be delivered in FY 1977, two in FY 1979, and the last one in FY 1980.

Assuming that the currently programmed amphibious lift capability is to be maintained, the only class of amphibious ships for which a replacement program must be initiated during the five-year program period is the aging eight-ship LSD-28 class. Conceptual design work on the replacement ship has been underway for several years and the Defense Department tentatively plans to use an improved version of the existing LSD-36 class, designated LSD-41, as the basis for this design. Procurement of the LSD-41 class is planned to begin with one ship in FY 1979 and would continue with additional ships in FY 1981 and FY 1982.

i. Mines and Mine Countermeasures

Our longer term mine modernization program centers on development and procurement of these four mines:

-- Captor, a deep-moored ASW mine able to detect, classify and launch a MK-46 torpedo at an enemy submarine. This mine promises to improve dramatically our ability to kill transiting submarines.

-- Quickstrike, a mine backfit program, provides kits to convert the existing MK-80 series bombs to bottom mines.

-- The Submarine-Launched Mobile Mine (SLMM) program, associated with the Quickstrike program, provides a self-propelled, sub-launched mine in the near term by marrying a mine warhead to the after body of MK-37 torpedoes which are now surplus with the introduction of the MK-48 torpedo. The SLMM permits the mining of waters inaccessible to other delivery vehicles and where covert minelaying would be particularly desirable.

-- PRAM, a passive-active, acoustic, rocket-propelled moored mine, deliverable by aircraft, surface ships, and submarines.

In the mine countermeasures (MCM) field, the helicopter MCM force still provides capacity and flexibility against shallow-water minefields. However, the airborne deep ocean minehunting program has been cancelled in favor of pursuing this mission with MCM ships. U.S. surface ship capabilities for minehunting and minesweeping against Soviet mines will be considerably increased with the procurement of 19 modern ocean minesweepers during the program period.

j. Mobile Logistics Support Force (MLSF)

Mobile Logistics Support Force ships provide underway logistics support and mobile forward area maintenance and repair facilities. There are usually about 20 underway replenishment ships forward deployed in peacetime. Peacetime forward deployment of large tenders for repair and other support is generally limited to two ships in both the Sixth and Seventh Fleets. Peacetime forward deployments of minor fleet support ships are largely limited to a few submarine rescue vessels, ocean tugs, and salvage ships. To meet these needs the Navy operates a fleet of 109 active and reserve underway replenishment, major fleet support, and minor fleet support ships.

Our program for the MLSF emphasizes new and less costly ways to provide the required support services. For example, the five oldest ammunition ships (AE-21/23 classes) will be placed in a reduced manning status beginning in FY 1978. They will be manned to 80 percent of present crews and will not be forward deployed in peacetime.

Research and development is underway to investigate a multi-purpose hull that can serve as the replacement for fleet towing, salvage, and rescue ships. Specialized mission requirements would be provided by

onloading containers configured to provide the equipment necessary to perform the specific mission.

We are encouraged by the progress being made in the modernization of the MLSF. A contract for the first two Fleet Oilers (AO) of a new class was awarded in August 1976; this is particularly important in that we now have only six AOs not overage compared with the desired force of 23. We continue to project substantial additional new construction of MLSF ships to further eliminate overage vessels. Our FY 1978-82 plan includes 44 MLSF ships, composed of 14 AOs, one Fast Combat Support Ship (AOE), two Destroyer Tenders (AD), two Repair ships (AR), and 25 minor support ships. The FY 1978 program includes four more AOs of the class now building and five fleet tugs (ATFs), the tugs to be manned by Military Sealift Command (MSC) personnel.

The increase in the AO building rate, to be sustained in FY 1979 at four ships, reflects one of the major conclusions of the recent NSC study of naval forces which is to increase fleet support capability. The higher building rate, together with the relatively simple construction methods needed for these ships, should permit an efficient use of existing shipbuilding industry resources. Construction of one AD planned for FY 1978 has been deferred to FY 1979 in view of the assessed higher priority of fleet oiler construction. On the other hand, plans for procurement of the first of a new class of fleet repair ships have been advanced from FY 1981 to FY 1979.

C. Tactical Air Forces

1. Program Basis

The tactical air forces are needed primarily to ensure the control of friendly airspace and to support the control of land areas and the land, sea, and air lines of communication essential to the overall defense strategy. Toward these ends, tactical aviation has been structured to perform close air support, counterair, strike, and interdiction missions. U.S. general purpose forces rely substantially on tactical air forces for flexibility in meeting attacks which can vary widely in possible location and intensity. Thus tactical aviation forces include units capable of essentially worldwide operations as well as forces oriented primarily toward the European theater. Major concerns in tactical air force planning in the present or near future are:

-- sustaining major procurement programs to modernize aircraft inventories;

-- improving surge capabilities to counter short-warning-time attacks;

-- improving force readiness and capabilities for sustained combat;

-- providing appropriate combat support for warning, command, control, and targeting assistance;

-- coordinating R&D programs across all tactical air forces to support selected high-priority programs.

All of these concerns are addressed in the proposed defense program. Actions involve both ongoing planning for future decisions as well as implementation of major existing programs. In every case there is an attempt to perform needed missions with an operationally and fiscally efficient mix of land- and sea-based forces. Each of the five major concerns listed above are discussed briefly as well as the rationale for the specific program decisions taken to deal with these concerns.

Sustaining Major Procurement Programs

The tactical air forces must continue to have an adequate number of modern combat aircraft to perform their missions. The rising costs of aircraft procurement, together with Soviet tactical air and air defense improvements, have created significant pressures for the attainment of the desired tactical air force level goals. Further, the potential enemy ground force offensive threat continues to grow quantitatively and qualitatively, requiring in particular increasingly extensive, responsive, and effective antiarmor capability.

We have chosen to deal with the increased ground threat by improvements in both tactical air and land force capabilities; the tactical aircraft force mix is also being altered to meet both the evolving threat and rising costs. U.S. emphasis on large, multipurpose tactical aircraft (such as the F-4 and the original F-111 concept) has been changed over the past five to ten years in favor of a mix of somewhat more specialized aircraft types. The relatively costly Navy F-14 and Air Force F-15 high performance aircraft continue to be procured for a limited set of demanding roles. To complement this F-14/F-15 force, plans are being made for major procurement of the smaller, less costly F-18 and F-16 aircraft for a wide range of Air Force, Navy and Marine Corps operations. The tentatively planned total procurement of about 2,000 F-18 and F-16 aircraft by the mid-1980s would be sufficient to offset the retirement of the large existing inventory of older aircraft such as the F-4 and F-100. Equally important is the ongoing production of the A-10, an austere but highly capable close air support aircraft. This program renews the concept of a specialized antitank aircraft needed to meet improvements in potentially hostile land forces deployed both in Central Europe and Korea.

Establishing an appropriate mix among these programs while simultaneously encouraging the maintenance of a balanced, efficient production base poses problems, not all of which can be resolved independently by the Defense Department. Frequently there is the dilemma of choosing between keeping production lines open as a hedge against various planning uncertainties and the alternative of completing a given order at a higher, more efficient rate and then terminating production altogether. It is necessary to appreciate the need to concentrate production emphasis on the highest priority programs and accept some inevitable risks in the termination of other projects.

Improving Surge Capabilities

As has been presented elsewhere in this Report, recent evidence suggests that Warsaw Pact contingency planning and force improvements may permit the execution of a sudden, major attack on NATO in the context of a deteriorating overall political situation. This evidence has heightened the continuing problem of balancing resources between short-term combat readiness and long-term force structure improvements. Air Force tactical air capabilities to counter the threat of a high intensity campaign launched against NATO with limited strategic warning are being improved through increased aircraft and aircrew readiness, development of hardened support facilities, and command, control, and communications enhancements rather than through combat force structure changes. These improvements are intended to reduce enemy gains from a sudden attack by providing faster, more reliable handling of warning indicators and through toughening our target structure. Most recently, U.S. exercises have included surge increases in aircraft sortie rates to well over normal, long-term levels in order to test our ability to respond to sudden attacks. While NATO is engaged in hardening base facilities and expanding aircraft protection as

well as improving active defenses, major studies are continuing to determine preferences among the mix of active and passive defense measures for both initial and sustained theater combat operations.

Improving Force Readiness and Sustained Combat Capability

Measures undertaken to improve both instantaneous and long term combat capability contribute, of course, to performance of all tactical air missions. In addition, combat forces must be matched with adequate logistics and manpower support. The desire for high technology in deployed systems has to be balanced by appreciation of the constraints imposed by normal operational conditions. For example, the deployment of systems fully capable of adverse weather operations has been limited by both the cost and the special maintenance and reliability needs of such sophisticated equipment. Current Defense Department procurement review procedures consider these support factors in evaluating new programs; however, some existing weapon systems pose particular problems because of deficiencies in spare parts, skilled maintenance personnel, and other support elements. Recent difficulties with the power plants of several principal fighter/attack aircraft (F-14, F-111, and A-7 in particular) have caused significant degradations in tactical air force readiness, for example. These issues are addressed in later chapters of the Defense Report but are highlighted here because of their critical bearing on broader force structure decisions.

Providing Appropriate Direct Combat Support

The need for increased surge capability and higher readiness have led to a variety of intelligence, communications, and logistics improvements. We must also decide how much integrated, largely airborne, combat support to provide for fighter/attack operations. These combat support measures are a direct counter to potentially hostile air defense measures. Soviet ground and air forces in particular have been improving their air-to-air and surface-to-air theater forces, reducing our confidence in the ability of existing tactical air systems to accomplish their assigned tasks.

Direct combat support such as airborne surveillance and control, defense suppression, tactical reconnaissance, active and passive electronic warfare operations, and aerial refueling make important contributions to the actual completion of opposed tactical air combat operations. Establishing an appropriate mix among fighter/attack and various combat support aircraft and equipment is difficult and scenario-dependent. Because the European theater has the great preponderance of high threat environments needing sophisticated combat support, it is possible to anticipate needs for these support systems reasonably well. The current AWACS radar surveillance and control aircraft is an example of a major effort to provide near-real time information and direction for major combat operations. This program requires continued attention to ensure that an appropriate AWACS capability is provided for in NATO force planning. Major ongoing initiatives such as the F-4G Wild Weasel conversion and an

Improved antiradiation missile (HARM) also are in development to provide improved defense suppression and targeting assistance capabilities. R&D support and thorough testing and evaluation will be needed to determine their potential contribution to the overall success of future tactical air operations.

Coordinating R&D Programs

The change in emphasis on aircraft types, together with the recent increases in direct combat support forces, highlight the difficulty of anticipating where major development efforts should be concentrated. The Air Force's Advanced Tactical Fighter technology review and various Navy studies provide examples of mission concepts being developed now, prior to the initiation of any actual aircraft or weapon development contracts. A thorough review of potential tactical air needs in the late 1980s and 1990s will be essential prior to initiating any major new programs. In particular, emphasis should be on the accomplishment of essential tasks rather than simple maintenance of force levels and replacement of existing aircraft types. Particular emphasis is being given to achieving commonality among new aircraft types or at least among major subsystems such as radar, power plant, and weapons systems. For example, the use of a common engine in both the twin-engine F-15 and the single-engine F-16 Air Force fighters will provide major benefits in logistics support and overall force readiness. The F-18/A-18 program initiated last year to provide both fighter and attack capability for the Navy and Marine Corps is the best example of progress in this area since deployment of the F-4 Phantom II. The F-18 and A-18 as currently planned have a high degree of commonality among models, but will be fully able to replace existing F/RF-4 and A-7 aircraft in active and reserve force inventories. The Defense Department will need the support of the Congress to successfully complete such programs, which often cut across Service and mission lines.

With the foregoing set of concerns in mind, the following section describes the rationale for the specific program decisions which constitute the fiscal year 1978 program.

2. Force and Program Status

Tactical aircraft procurement programs are addressed here largely along Service lines, first the Air Force programs and second, those of the Navy and Marine Corps. This division reflects the notable differences in threat and operational basing between the forces of these Services rather than the simple institutional division of resources, although in many cases the aircraft of different Services are intended for similar missions.

It is essential, where all the Services are concerned, that we sustain ongoing procurement plans. U.S. tactical air force levels have steadily declined since the end of the Korean War in 1953 except for a

short period during the Vietnam War. The fact is that the total U.S. fighter/attack and reconnaissance aircraft inventory has dropped from about 8,000 in FY 1962 to less than 6,000. While current aircraft have much greater capability than those of 15 years ago, this trend is clearly dangerous when examined in the context of U.S. commitments and the continuing improvements in opposing forces.

The United States was procuring 600 to 700 tactical aircraft annually during the early 1960s, a rate that would have provided a force of 6,500 aircraft at an average age at retirement of 10 years. Procurement of new fighter/attack aircraft averaged only about 250 a year between FY 1973 and FY 1976, a rate that would force us to accept an average service life of 26 years per aircraft if we were to maintain that same illustrative 6,500-aircraft force. Such an average age would exceed by 5 to 10 or more years the maximum service life currently planned for major combat aircraft. The current defense program would increase total fighter/attack aircraft procurement to a rate of roughly 500 aircraft per year for FY 1978-82. This rate, consisting of a mix of both high and more moderate cost aircraft, is necessary to support the planned force structure. Chart II-7 shows the cumulative procurement of new aircraft and the total aircraft inventory from FY 1976 to FY 1982. Fulfillment of these procurement programs will achieve a major modernization of both active and reserve forces. However, within this total only the Air Force presently is accomplishing its overall goals of modernization and full equipage of its force at a satisfactory pace. The Navy continues to face significant difficulties.

Reassessment of the projected Navy tactical air force structure levels in the early 1980s has led to a decision to procure more higher-cost F-14s than we would otherwise prefer and at the same time require us to operate older aircraft longer than desired. Failure to provide a new, lower-cost fighter/attack aircraft for the Navy in the immediate future would almost inevitably lead to significant reductions in both carrier and Marine air wing force levels. We consider that the F/A-18 program plan provides an appropriate means to achieve our modernization goal.

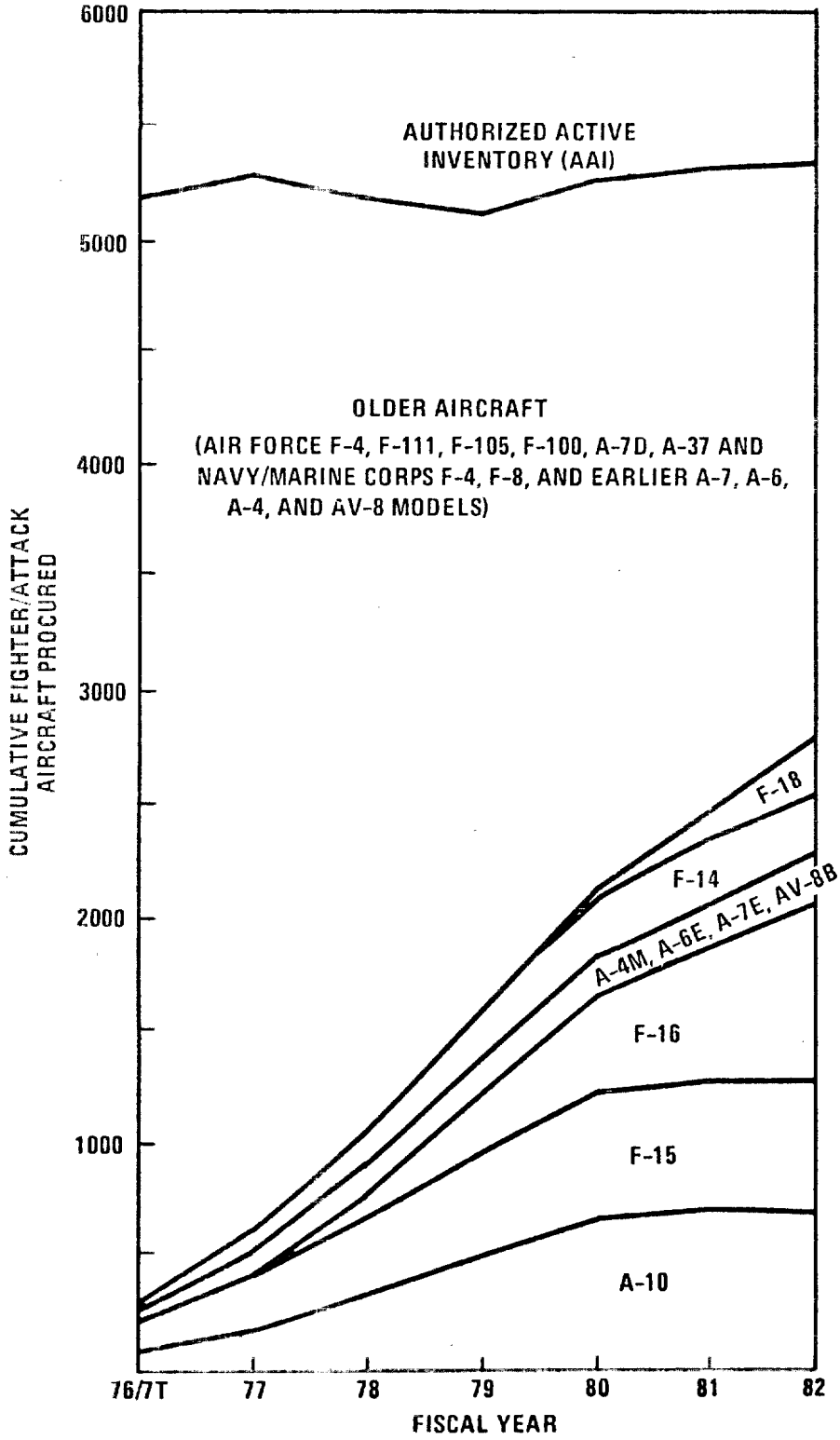
a. Air Force Tactical Air Structure

Air Force tactical air forces are planned principally for support of deployed U.S. and allied ground forces in Europe and the Western Pacific region. Overall planning is done in the context of alliance defense as described in Section I of this Report. The following discussion describes the current posture of Air Force tactical air, the role of threat considerations in planning, and judgments concerning the adequacy of the force.

Overall force structure is based largely on plans for wartime operations, but is affected to a lesser extent by peacetime operational basing and training considerations. The current Air Force fighter/attack force structure includes 26 active and the equivalent of about ten reserve

CHART II-7

U.S. FIGHTER/ATTACK AIRCRAFT INVENTORY AND CUMULATIVE FY76-82 PROCUREMENT



wings (an active fighter-attack wing nominally is composed of three squadrons, each with 24 operational aircraft when fully equipped). Major additional combat support includes 9 active and 8 reserve tactical reconnaissance squadrons. Eight active fighter wings and three active reconnaissance squadrons currently are deployed in Europe in support of U.S. commitments and forces there. Three active fighter wings and one tactical reconnaissance squadron are deployed to Pacific bases in support of commitments in that region. The remaining units in CONUS provide augmentation reserves for a rapid force buildup in times of crisis as well as training and other support. Within these CONUS-based units, one fighter/attack wing and three tactical reconnaissance squadrons are "dual-based," specifically committed for deployment to prepositioned support in NATO Europe in as few as 48 hours. A second CONUS fighter wing is dedicated to crisis augmentation of the Air Defense Command and Alaskan Air Command. One wing-equivalent force of Wild Weasel (defense suppression) aircraft has two squadrons centrally-based in CONUS and one squadron deployed in each of the European and Pacific areas. One standard fighter/attack wing is dedicated to augmentation of combat crew training but is combat capable. The remaining eleven active and ten reserve fighter wings provide a base for additional "rapid reactor" deployments to Europe or crises elsewhere, limited rotational forward deployments, conversion to new weapons systems, development of tactics and a variety of Air Force and joint Service training exercises. Their total number is derived from estimates of wartime needs rather than purely peacetime tasks.

Wartime employment of this force obviously would depend on the crisis at hand. Reasonably detailed force planning scenarios have been developed to test the adequacy of planned forces against potential wartime threats. For example, a total of roughly 30 equivalent active and reserve fighter/attack wings and 15 tactical reconnaissance squadrons could be deployed in Europe within a month's time; most would be in place in 15 days or less. The three wings in the Pacific could be held in place and two-wing-equivalents of older aircraft types held available for an unanticipated contingency elsewhere. Alaskan and other lesser deployments would be carried out as previously indicated. Such a posture could provide about 2,100 fighter/attack aircraft in Europe to assist allied forces against the Pact threat. Completion of planned procurement programs will increase this European 30-day deployment capability to about 2,300 aircraft by FY 1983.

The adequacy of this force posture depends in part upon considerations of enemy strength and intentions. However, we continue to feel that U.S. aircrews are better trained, more experienced, and more flexible than those of the Warsaw Pact. These factors play a part in our judgment that programmed forces would enable us to blunt initial enemy conventional air strikes and thereby gain sufficient air superiority to carry out significant and effective close air support and battlefield interdiction operations at the outset of hostilities. As the Warsaw Pact continues to improve its aircraft, weapons, and aircrews, ongoing NATO force modernization is

necessary to maintain confidence in our current capability. Currently, the Soviets are emphasizing ground attack capabilities in the design of their new aircraft, apparently in the belief that a successful air campaign must rely on sudden, massive strike operations to prevent our taking advantage of the increasing counterair capabilities of the F-15/F-16 force.

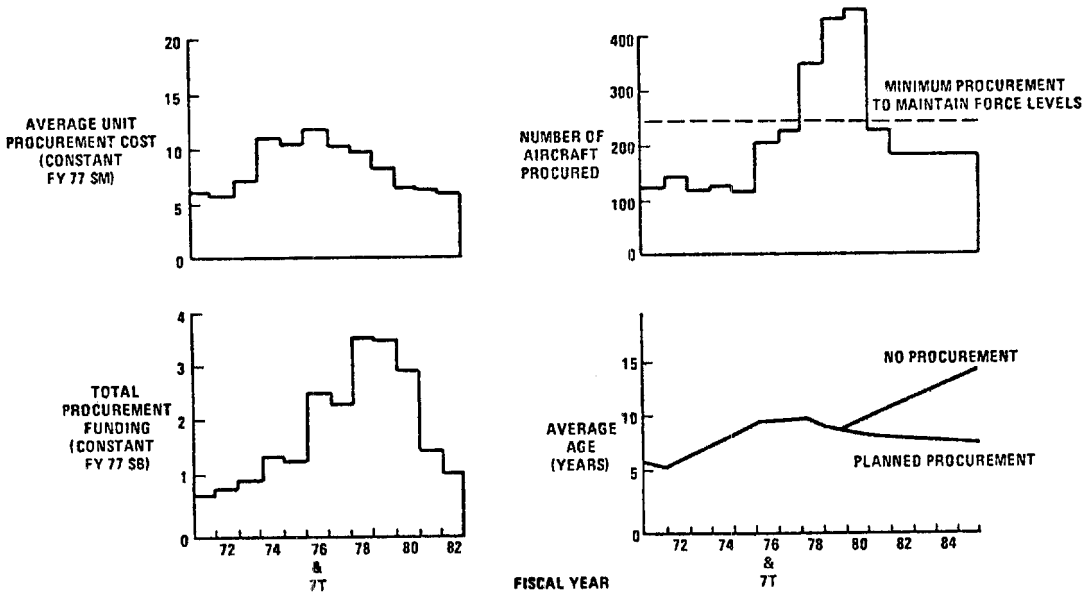
Assuming that various readiness measures, warning systems, shelters, and other hardening programs are successful, it will be possible to employ tactical airpower to protect bases and ground forces from air attack, launch attacks on major enemy armored spearheads, and attempt to slow the overall enemy effort by subsequent strikes at air bases, resupply lines, and other major support. Inasmuch as the Soviets also see the possibility of some prolonged period of non-nuclear conflict, they are expected to develop new aircraft intended primarily for counterair operations. We continue to consider, however, that F-15 and F-16 aircraft will be capable of defeating such new Soviet aircraft through the mid-1980s. The best operational Soviet Frontal Aviation counterair aircraft is the MiG-23/Flogger, rated as inferior to the F-15. For example, the Air Force considers that the F-15 possesses a significant acceleration and turn advantage over the Flogger throughout the Flogger's flight envelope. The F-16 is expected to have similar maneuvering superiority over the Flogger, although the F-16 lacks the longer radar range and full radar missile engagement capabilities of the more sophisticated F-15.

Thus we foresee no major risk in U.S. force level goals and procurement philosophy if sufficient overall strength to sustain a major campaign survives a sudden attack. High initial unit readiness, the capability to surge and sustain sortie rates, adequate personnel manning levels, and sufficient quantities of reliable ordnance all will be necessary in addition to the basic aircraft force levels if we are to succeed against the threat we face in Europe today. More specific details on the aircraft themselves are provided in the following sections.

Chart II-8 provides an overview of Air Force procurement costs and acquisition rates through FY 1982. The major programmed procurement of relatively low-cost F-16 and A-10 aircraft during the late 1970s permits growth in the overall aircraft inventory toward the present goal of 26 fully-equipped active fighter/attack wings. The attention given to increased reliability in new aircraft should permit the larger force to be maintained with little increase in maintenance-manning and life-cycle costs.

CHART II-8

AIR FORCE FIGHTER/ATTACK AIRCRAFT PROGRAMS



We plan to operate 26 fully-equipped active fighter/attack wings, as indicated last year. The current force is roughly 200 aircraft below the inventory goal needed to support that force. The goal is to provide a sufficiently large force to discourage Warsaw Pact attack planners from any ready expectation of success, hedge against possible high combat activity and loss rates, and also prevent any overwhelming Pact numerical advantage. Overall force goals must continue to be reviewed as dictated by new information on force effectiveness, the allied contribution, resource availability, as well as considerations of acceptable levels of risk.

Considerable reliance is placed on reserve tactical air forces in U.S. planning. Some reserve fighter/attack squadrons are scheduled to be deployed within three days of mobilization, and reserve units continue to perform well in peacetime training. In recognition of the advantages of this situation, the Air Force plans a thorough modernization of Air National Guard and Air Force reserve units by FY 1981 through the complete conversion of existing units to contemporary first-line aircraft (F-4s, A-10s, and A-7s). Further, the Air Force will introduce the F-16 into the reserve forces by FY 1985.

The Air Force is evaluating the practicality of using reserve personnel for wartime augmentation of the active fighter squadrons. Success has been achieved with this concept in strategic airlift units. This augmentation program should make higher aircraft sortie levels possible for intense, sustained campaigns without incurring the extra costs associated with permanent manning of the active force at a higher level.

In addition to planning its force structure to enhance conventional deterrence, the Air Force is adjusting deployments toward the same end. An improved combat capability in Europe is being achieved by exchanging Air Force headquarters and support personnel for operational personnel. Three additional major actions are planned to bring about further increases in combat capability.

First, the Air Force will deploy a wing of its most sophisticated air superiority fighter, the F-15, to Europe earlier than previously planned.

Second, the number of Air Force aircraft in Europe will be increased by a wing equivalent through retention of those F-4s originally programmed to be replaced by F-15s. These aircraft will be used to increase the strength of three of the eight tactical fighter wings currently deployed in Europe.

Last, a second F-111 wing will be deployed to Europe to replace an F-4 wing; this will provide an increased, readily available all-weather bombing capability. These actions will substantially improve U.S. tactical air capability in Europe and reinforce the evidence of our commitment to a strong European defense.

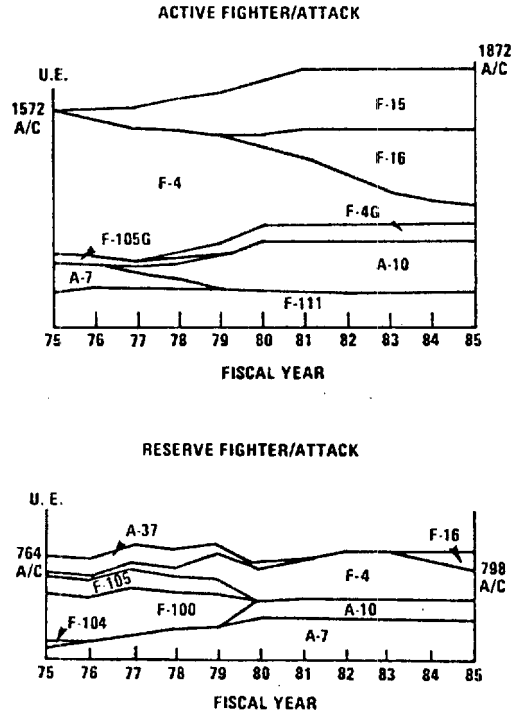
In summary, the Air Force plans a modernized force of integrated active and reserve components composed both of aircraft specialized in particular missions and of aircraft designed for multi-mission employment. This force will also have a mixed composition of aircraft of high and low sophistication and costs. We consider that the programmed force will give us a reasonable expectation of success in the event of crisis or war, insofar as our overall assumptions about the nature of possible future conflicts are valid. The following section discusses the proposed major acquisition programs which are necessary to execute the force structure plans outlined above. Details of the planned force structure are presented in Appendix Table 5.

b. Air Force Modernization

The mix of Air Force fighter/attack aircraft planned for FY 1975-85 is shown in Chart II-9. The Air Force now tentatively plans to continue

CHART II-9

AIR FORCE MODERNIZATION



F-16 production into the mid-1980s, permitting complete replacement of F-4 fighters in the active force by about FY 1986 (F-4G Wild Weasel aircraft would be retained in the active force throughout the 1980s.) The continued F-16 procurement also will ensure that at least one fighter aircraft production line is kept open as a hedge against major mobilization demands. The end FY 1985 active force structure under this plan would include six wings of the F-15 primarily for air superiority tasks; eight wings of F-16s for both counterair and ground attack missions; five wings of A-10s for the close air support role; four wings of F-111s for deep, all-weather interdiction strikes; and three F-4 wings for multi-mission and defense suppression tasks. Reserve forces would contribute roughly four wing-equivalents of new F-16s and A-10s, four of A-7Ds, and three of F-4s.

The acquisition costs of major Air Force tactical air modernization and improvement programs are shown in Table II-7.

TABLE II-7
Acquisition Costs of Major Air Force Tactical Air Modernization and Improvement Programs 1/
(Dollars in Millions)

	FY 1976 Actual Funding	Trans. Period Actual Funding 2/	FY 1977 Planned Funding	FY 1978 Prop'd Funding	FY 1979 Prop'd for Authorization
Air Force Systems					
Development and Procurement of the F-16	216	70	499	1,696	1,542
Acquisition of the F-15 Air Superiority Fighter	1,584	329	1,525	1,766	1,715
Modification of F-4 and F-111 Aircraft	193	34	161	203	144
Acquisition of the A-10 Close Air Support Aircraft	457	81	613	841	969
Development and Acquisition of E-3A AWACS 3/	474	76	565	529	510
Development and Procurement of F-4G Wild Weasel Modifications	60	20	86	-	40
Development and Procurement of EF-111A Modifications	6	10	37	41	185
Procurement of AIM-7 and AIM-9 air-to-air Missiles	128	3	141	222	205

1/ Includes cost of RDT&E, procurement of the system and initial spares, and directly related military construction.
2/ July 1 to September 30, 1976.
3/ Does not include costs of directly related military equipment.

F-16

Full-scale development of the Air Force's Air Combat Fighter, the F-16, is proceeding according to plan. The F-16 will fulfill the requirement through the 1980s for a low cost, multi-purpose aircraft to complement the more sophisticated F-15 in the air-to-air role and to supplement the F-4, F-111, and A-10 in the air-to-surface role. Accordingly, the Air Force has tentatively set a new total production goal of 1,388 aircraft for the F-16 through the mid-1980s. This quantity would equip ten active and two reserve wings by FY 1987. Actual implementation of this expanded production program would take place in the early 1980s and therefore will be subject to repeated DoD review before actually being undertaken. For the present time the program is a reasonable anticipation of what procurement would be needed to replace the existing active force F-4s and fully equip the 26 active fighter/attack wings.

The first of eight full-scale development F-16s rolled off the General Dynamics Fort Worth production line in October 1976 and was delivered to the USAF in December 1976. The first production aircraft is scheduled for delivery in August 1978 and the first unit should be operational by 1980. The only other significant program change is the specification of a more comprehensive support concept. While the new concept will increase acquisition costs, a net saving over the long term is expected through lower life cycle costs.

F-15

The Air Force F-15 fighter program is proceeding on schedule. About 136 production aircraft having been delivered of 404 currently authorized. This aircraft is primarily intended for the all-weather counterair role, with a range capability that will allow it to operate well into enemy airspace. Its design was optimized for transonic operations against potential future Soviet Frontal Aviation fighters. Major capability thresholds have been achieved and the F-15 is considered fully capable of fulfilling its intended role. However, increasing program costs have become a major cause for concern. Re-estimation of the F-15 program cost during the past year indicates a $1.2 billion cost increase, most of which is included in the proposed Five-Year program. Approximately half of this cost increase was due to program cost growth with the rest evenly divided between added capabilities and inflation. The Air Force is taking management actions to deal with the cost problem. However, if F-15 costs continue to rise, the Defense Department will consider reducing procurement.

The F-15 Tactical Electronic Warfare System (TEWS) has been approved for production. Operational test and evaluation continues to make ready advanced missiles, the AIM-7F Sparrow and AIM-9L Sidewinder, for the aircraft. The standard M-61 Gatling Gun is presently being installed in production

F-15s. However, modifications permitting improved effectiveness are being developed which eventually will be installed on all F-15s.

During the transition budget period, Congress approved engineering development and test of a proposal to increase the F-15 internal fuel capacity by 2,000 pounds. This configuration change will significantly enhance the F-15s combat range and operational flexibility.

The F-15 is under active consideration for adoption as a strategic defensive interceptor for the U.S. Air Defense Command and has been selected by the Japanese Air Self-Defense Force to modernize its interceptor force. However, actual Japanese purchase of the aircraft has been delayed and is subject to further review by the Japanese government. The F-15 also is one of several candidates for a future tactical reconnaissance aircraft to replace existing RF-4 aircraft in the 1980s. However, the currently programmed F-15 production will end in FY 1981, depending in part upon the resolution of the existing cost growth problem.

A-10

The A-10 close air support aircraft has completed Initial Operational Test and Evaluation (IOT&E). Authorization has been given for 195 aircraft at a production rate which will increase to and stabilize at 15 per month. Fatigue testing has continued through 2 life cycles and a service life of 6,000 hours has been verified. Production A-10s have been delivered and are undergoing Follow-On Test and Evaluation (FOT&E) at Davis Monthan AFB.

We continue to support the need for the A-10 and believe it provides the combination of lethality and survivability necessary in a close air support aircraft. The A-10 provides ground forces a level of flexible firepower that would be difficult to achieve in any other manner. The A-10 design has been well tested, having successively won major competitions against both an alternative new design aircraft (the A-9) and a proven, existing aircraft (the A-7). Studies indicate that the A-10 force will account for a large number of the armor kills expected in wartime, consistent with the overall Air Force tactical air concept of operations. Current plans call for the first A-10 wing to be fully operational in FY 1978 with all 23 planned squadrons operational by FY 1982.

E-3A (AWACS)

The E-3A Airborne Warning and Control System (AWACS) was developed to overcome the limitations of ground-based radar systems and improve force command and control in support of both tactical and theater-level operations. The planned force also will contribute to strategic force surveillance and early warning as previously discussed. The E-3A provides a long-range, look-down radar with substantial jamming resistance which has the advantage of air deployment for tactical flexibility and survivability. The AWACS system, particularly when integrated with the hardened

elements of NATO's ground-based tactical command and control system and with surface-to-air missile defenses, will significantly improve overall allied air capability. Peacetime operation of AWACS in a surveillance role in the NATO area will increase our confidence in being able to detect and respond to a sudden Warsaw Pact attack and will provide similar support to U.S. forces in other theaters of operations. Wartime employment will provide both attack warning and control of intercept and attack missions. Deployment of AWACS also permits us to phase out the expensive ground-based SAGE radar system and aging EC-121 aircraft which are being retained for necessary surveillance duties.

The AWACS flight development test and evaluation program is planned to be completed in January 1977. Analysis of the tests is expected to be completed in April 1977. Additional operational tests were conducted during 1976 to assess the capability of the system to handle a large number of tactical targets. These tests represented the most comprehensive aircraft weapon systems test ever performed short of actual combat. Preliminary test indications are that AWACS is capable of high effectiveness even in the dense threat and electronic warfare environment that was simulated.

Thus far, three AWACS RDT&E and 16 production aircraft have been fully funded. Although the program has experienced delays in the production of the radar system, these production difficulties are being resolved and confidence in systems performance continues to be high. There is concern that program costs will rise over past estimates, but it is too soon to anticipate the net results of Air Force cost reviews and management actions. The Air Force continues to project an initial AWACS operational capability in September 1977 when five aircraft will have entered the inventory (four production models plus one of the three RDT&E models which will have been reconfigured into an operational aircraft). The currently planned 34-aircraft force would be fully operational by the end of FY 1981.

The United States has offered to make the AWACS available for procurement by NATO since 1973. European and Canadian NATO Ministers agreed to the need for a NATO AWACS at the December 1976 Defense Planning Committee (DPC) meeting. The funding shares and cost phasing issues are being defined now, with meetings of high-level national experts scheduled for January 1977. Shortly thereafter, an extraordinary Ministerial session of the DPC is to be scheduled to reach an alliance procurement decision. This decision would be subject to ratification by the appropriate national processes, including U.S. Congressional review. NATO adoption of AWACS, if achieved, would increase the integrity of the NATO tactical air warning and control net and, we feel, greatly strengthen alliance defenses.

In light of continued satisfactory tests and concern for our overall surveillance and warning needs, we are requesting funds to complete the

acquisition of six E-3As in FY 1978 and procure long lead time items for six more aircraft to be requested in FY 1979. Resolution of the NATO program will be needed in the next year inasmuch as the last programmed U.S. procurement of AWACS continues to be projected for FY 1980. We expect to be able to identify the U.S. share of a joint NATO AWACS program by about mid-1977.

Air Force Aircraft Modifications

In addition to the major improvements represented by the F-15, the F-16 and the A-10, modifications to the F-4 and F-111 will greatly increase the effectiveness of these tested systems. Many of the planned modifications are intended to delay the obsolescence of these aircraft by permitting efficient operation for several years beyond the previously planned limit of their technological utility. These funds give the aircraft an enhanced capability without the expense of procuring entirely new aircraft.

F-4D and F-4E aircraft are being modified to carry a self-contained laser designator pod called Pave Spike. Our night/adverse weather tactical air warfare capabilities will be increased during the next five years by modifying F-4E and F-111F aircraft with the more sophisticated Pave Tack equipment which will provide a wide field of view, high resolution, forward-looking infrared (FLIR) system and a laser ranger/designator. This system, supporting laser-guided, modular glide bombs or a forward-fired weapon such as the Maverick guided missile, will provide improved capability for night or limited visibility acquisition and attack of surface targets. We consider these improvements necessary because our existing radar bombing effectiveness in adverse weather is limited.

F-4G Wild Weasel

The Air Force currently relies on two squadrons of F-105Gs and two squadrons of modified F-4Cs for the "Wild Weasel" defense suppression role. This force has a limited day/night attack capability, is equipped with electronics that do not cover the current threat frequency spectrum, and has limited capability to handle multiple enemy radar targets. Accordingly, a program was initiated in 1970 to modify 116 existing F-4E fighters as dedicated F-4G Wild Weasel aircraft at a unit cost of about $3 million. Pending resolution of certain problems revealed during development and operational test and evaluation, we have deferred the final F-4G procurement increment to FY 1979. While we expect to complete the program procurement at that time, some adjustments may have to be made to previous schedule and quantity goals after the current problems are solved.

EF-111A

The RDT&E phase of the program to convert existing F-111A fighter/bombers to electronic warfare support aircraft is continuing. The

modified EF-111A aircraft are intended to employ flexible, high power, multipurpose jammers to support strike and F-4G Wild Weasel aircraft. If the two prototype conversions prove successful, meet test objectives, and are judged cost-effective, a further 40 aircraft will be converted to this configuration. The F-111 aircraft to be modified are presently used as combat crew training aircraft.

Aircraft Shelters

The program to construct shelters in Europe continues at a relatively modest pace, in part in recognition of Congressional concerns about NATO's willingness to share the costs of the program. To date, 694 aircraft shelters have been built or funded; they will protect 83 percent of our FY 1981 in-place and dual-based aircraft assigned to Europe and 37 percent of our FY 1981 rapid reactor aircraft. The FY 1978 program will raise these percentages to 84 percent and 47 percent respectively by adding 36 additional shelters. A few will be used to shelter in-place F-111s based in the United Kingdom and the remainder to provide shelters for rapid reactor aircraft. All shelters to be funded in FY 1978 are eligible for eventual cost recoupment from NATO infrastructure funds. We repeat our strong support for the shelter construction program as a low-cost method of limiting the costly wartime attrition of aircraft and their crews.

Our NATO allies are proceeding with their shelter programs. The number of shelters available has almost tripled in the last two years; over 50 percent of the NATO tactical combat aircraft can now be sheltered.

The number of shelters in East Germany, Poland and Czechoslovakia increased less than 20 percent in the last two years, and most of the increase was for sheltering the aircraft of the satellite countries. As a result, over 90 percent of the Soviet in-place tactical combat aircraft are sheltered and about 30 percent of the satellite countries' aircraft are so protected.

Air-Launched Ordnance

We are continuing major procurement of several missile programs initiated in previous years. The AIM-7F Sparrow and AIM-9L Sidewinder air-to-air missiles will provide the standard missile armament for the counterair mission, with 1,300 Sparrows and 2,236 Sidewinders included in the FY 1978 program. An additional 900 Shrike antiradiation missiles are being procured for defense suppression tasks. Some 100 laser-guided Maverick ground attack missiles are being procured in FY 1978, with the nature of future Maverick production dependent in part on the ongoing tests of an infrared-homing version.

c. Navy and Marine Corps Tactical Air Force Structure

Navy Department tactical air forces include both Navy and Marine Corps units. These forces have separate, special responsibilities for maritime operations, including sea lane defense and support of amphibious operations, as well as for the conduct of inland strike operations similar in nature to Air Force missions. The uniqueness of Navy tactical air reflects exploitation of the flexibility and mobility provided by aircraft carrier and other shipboard basing. In addition, some Marine Corps aircraft have the capability of operating from unimproved landing areas ashore, and the Marine Corps also employs a transportable, quickly-assembled Short Airfield For Tactical Support (SATS) as part of its amphibious capability.

To accomplish these general objectives, naval aviation forces must be capable of fleet air defense, antisubmarine warfare (ASW), antiship strikes, close air support, and interdiction operations. ASW force plans and some aspects of fleet air defense plans already have been addressed in the naval forces section of this Report. The general discussion of force structure issues here addresses first the Navy and then Marine Corps programs.

We plan to reduce Navy forces to 12 active carrier air wings and 13 carriers in FY 1978. The thirteenth carrier will be operated in a special status. The ship is not equipped to handle our most sophisticated aircraft (in particular, the F-14A, S-3A, and E-2C) and it will not have a corresponding active air wing or supporting combatant and support ship forces. Therefore, it will not carry out regular overseas deployments as will the other 12 aircraft carriers. However, operation of the ship will provide a means to improve the readiness of naval reserve air wings, while also retaining the capability to deploy with either Marine Corps or mobilized reserve air units in an emergency.

The aircraft carrier and its air group continue to be major components of the U.S. sea control force as well as the major elements of forward deployed naval forces maintained for deterrence. Aircraft carrier task forces contribute directly to the capability to meet a major Warsaw Pact attack on NATO, principally by helping to keep major sea lanes open against the full spectrum of potential non-nuclear threats. These mobile forces, together with Marine amphibious forces and selected high mobility units of the other Services, also provide the capability to take major offensive initiatives during the course of a NATO/Warsaw Pact war or a lesser conflict. Carrier-based tactical aircraft provide most of our capability to concentrate tactical airpower in relatively distant areas of the world where we do not have land bases. It should be recalled, as an example, that carrier air forces were employed in contingency operations as recently as 1975, during the recovery of the hijacked U.S. merchant ship **Mayaguez**. Carrier task force ships and aircraft are designed to be capable of independent operations in high threat areas. The demanding

requirements for independent operations at sea have led to the need for more sophisticated and consequently higher cost aircraft for naval aviation than for the Air Force.

Review of studies conducted during the past year has led to the conclusion that reduction of carrier and carrier air wing levels below the planned twelve would be risky at this time. Because of routine major overhaul and maintenance, two carriers are usually unavailable for any crisis response needed within days or weeks. Further, the need to conduct more substantial service life extensions on the large carriers (the SLEP concept, discussed in the naval forces section) will increase this nonavailability factor, increasing some overhauls to two years' duration rather than just one. Thus, the deployable force in time of crisis would be roughly ten ships, remembering that the 13th carrier of the total force could be provided with an air group from Marine or Naval Reserve units in a short period of time. These 10 or 11 ships and their aircraft would be faced with a wide variety of demands for their use in wartime. An illustrative allocation of the deployable ships in a major war would place two to four in the Mediterranean, four in the Atlantic, with the remaining ships available for Pacific area duties, reinforcement of Atlantic forces, and lesser contingencies. Of course, specific deployments would depend upon the situation at hand. This deployment capability, with a balanced force of supporting units, should enable us to meet the minimum requirements for both sea control and naval power projection tasks. We consider this a minimum force posture. Longer-term considerations have led to several new steps this year with regard to the future force structure.

I informed the Congress in August that we intended to procure a fifth large nuclear-powered multi-purpose aircraft carrier (CVN) while also initiating the development of "a more flexible replacement for large-deck aircraft carriers" for the long-term future. The impetus for this move toward an alternative to the large-deck carrier reflects both the increases in the cost of this type of ship and its supporting forces and also the prospective technological advances in the threat (such as the Soviet deployment of overhead surveillance systems in conjunction with advanced strike systems). I have since reconsidered these various factors and decided to recommend acceleration of the time frame of the transition toward an alternative Navy carrier tactical air force structure. Accordingly, prior plans to procure a fifth CVN have been replaced by a plan to procure the first of a class of V/STOL carriers (CVVs) in FY 1979, as already mentioned in the section on naval forces.

The decision to initiate the CVV program has been made in view of the potential of advanced-design V/STOL aircraft in the future. Our experience to date with V/STOL aircraft in the fleet has been limited, for all practical purposes, to AV-8A Harrier operations -- in sea control and close air support missions -- and there are marked limits to the performance of today's aircraft. It is hard to link the range of capabilities

inherent in the multi-purpose carrier air wing with what we see of V/STOL technology. But if one is led, by the logic of the U.S. Maritime Strategy and Naval Force Requirements study conducted by the NSC during 1976, to recognize the need to both increase the number and disperse the deployment of aircraft carriers in the 1990's, then one becomes willing to accept the risk of cancelling the last NIMITZ-class large deck carrier and developing a new kind of fleet aviation. Based on the decision to put significant emphasis on V/STOL programs, technology and industry can reasonably be expected to provide appropriate aircraft for the new design carriers.

We will continue to rely on the force of 12 large-deck carriers for more demanding missions through the 1990s. The current standard Navy carrier air wing is structured in such a way that it is capable of handling any of the Navy's sea control and projection missions. The only significant changes in the air wing structure from last year are a reduction in the number of ASW helicopters assigned to the Helicopter Antisubmarine Squadron from eight to six UE aircraft and association of the airborne tanker aircraft with the medium attack squadron. The multi-purpose air wing is constituted as follows:

2 Fighter Squadrons

2 Light Attack Squadrons

1 Medium Attack Squadron (including 4 tanker aircraft)

1 Antisubmarine Warfare Squadron (fixed-wing)

1 Helicopter Antisubmarine Warfare Squadron

1 Electronic Warfare Squadron

1 Airborne Early Warning Squadron

1 Reconnaissance Squadron

While this distribution is used for planning purposes, changes in the mix of aircraft assets can be made to meet specific operational requirements. In fact, one of the central elements of the multi-purpose carrier and embarked carrier air wing is the flexibility to vary the air wing to meet the anticipated threat. This increased mission flexibility can be enhanced by rapid augmentation without reliance on foreign shore-based support, either by transferring aircraft between carriers or by trans-oceanic flight of aircraft. Both of these procedures were tested and proven satisfactory during the initial evaluations of the multi-purpose carrier (CV) concept in 1971. The fleet commander would heavily structure the air wing for ASW if assigned a sea control mission involving sea lane defense. In the case of power projection attacks ashore, the

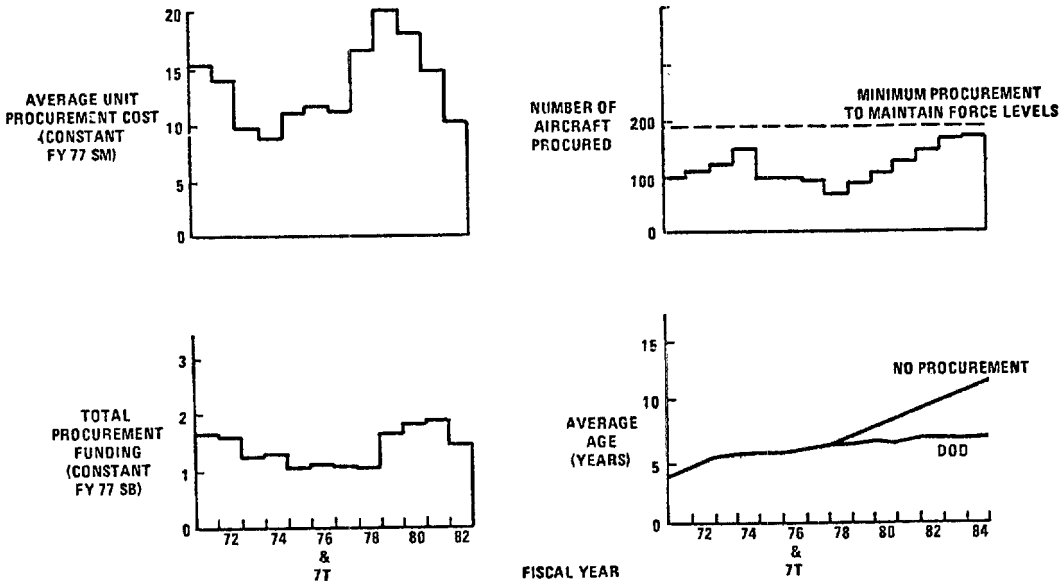
air wing would include a greater proportion of fighter and attack aircraft with fewer but still, sufficient ASW aircraft for self-protection and ASW defense.

Steps were initiated in 1976 to reverse the undesirable Navy and Marine tactical aviation trends of increasing average unit cost, inefficient procurement rates and aging naval aircraft. Since 1970, the Department of the Navy has not procured even the minimum number of 180 new tactical aircraft per year needed to prevent excessive aging and eventual decline of the forces.

During the current Five Year Defense Program, we must accelerate F-14 production and complete procurement in FY 1981. We should begin larger quantity procurement of the F-18 in FY 1982. These steps are necessary to reverse the growing average cost trend and increase the procurement rate of tactical aircraft. Current plans would provide 144 aircraft a year by FY 1982 as shown in Chart II-10. Accelerated F-14 procurement and higher quantity F-18 production will reduce last year's projected average age of the Navy tactical air force five years hence from 10.1 years to 9.7 years.

CHART II-10

DEPARTMENT OF THE NAVY FIGHTER/ATTACK AIRCRAFT PROGRAMS



The effort to improve the capabilities and modernize the Navy's tactical air reserves is also receiving continued attention. Within the Naval Air Reserve, the transition to an all A-7A/B light attack force should be completed in FY 1978. The reserve fighter force will be fully-equipped with F-4s in FY 1977, while reserve airborne early warning (AEW) capability is to be significantly upgraded through the introduction of E-2Bs in FY 1978. EA-6A electronic warfare aircraft will be introduced in the reserve force in FY 1978. Further modernization plans for the Navy Reserve call for eventually replacing the A-7A/B force with A-7Es, contingent upon introduction of the F/A-18 into the active force in the early to mid-1980s.

The Marine Corps tactical air force consists of three active and one reserve air wings as prescribed by Congress; they are structured to support Marine ground forces and amphibious operations. Plans for upgrading and modernizing Marine tactical aviation include the introduction of the F-18 for the fighter/attack mission and the AV-8B for the close air support mission.

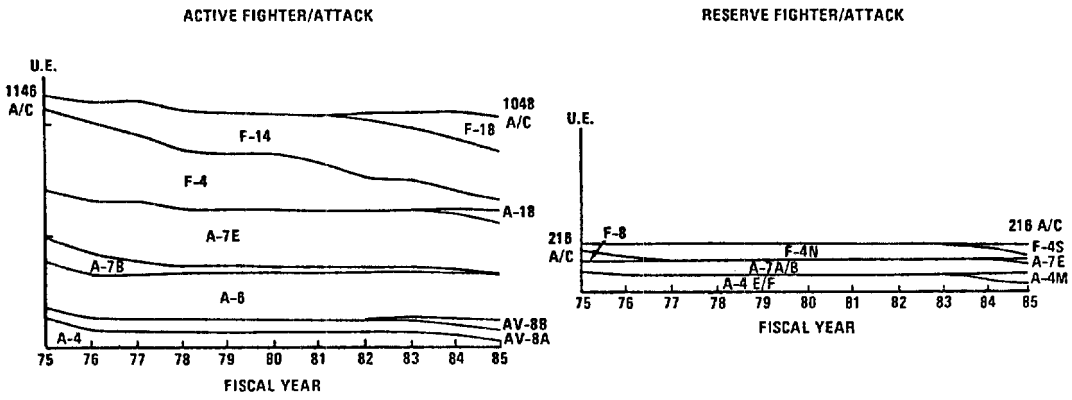
The active Marine tactical aviation forces consist of 12 fighter/attack squadrons, 13 attack squadrons, 3 aerial refueling squadrons, 1 multi-sensor reconnaissance squadron and 1 tactical electronic warfare squadron. In addition, there are 30 tactical air coordination (airborne) aircraft integrated into the three Air Wings. The flexibility provided by the organization of a Marine Amphibious Force (MAF) enables the commander to draw appropriately sized detachments from all Marine air assets to provide the full spectrum of integrated air elements necessary for a successful amphibious operation. The Reserve Marine Air Wing (4th MAW) would mobilize with 2 fighter squadrons, 5 attack squadrons and 1 air refueling element to support the Marine Reserve ground units. The Marine tactical air force size and mix is programmed to remain essentially constant through the current five-year defense plan.

The Marine tactical air reserve force continues to be improved through modernization. In FY 1977, the aging F-4Bs will be entirely replaced by refurbished F-4Ns; the transition to the A-4E and A-4F has been completed. Additional emphasis is being placed on the readiness and training of these units this year.

In the current five-year defense plan, the Navy will continue to replace the F-4 aircraft first with F-14s and then with F-18s. In addition, the accelerated procurement of advanced attrition F-14s will allow us to use F-14s as interim reconnaissance aircraft to replace the RF-8s and RA-5Cs. The effects of the changes to the F-14 and F-18 programs along with the planned introduction of the A-18 and AV-8B on the active and reserve tactical aviation force structure are shown in Chart II-11.

CHART II-11

DEPARTMENT OF THE NAVY MODERNIZATION



d. Navy Tactical Air Modernization Programs

The requirements for greater structural strength, special low speed landing characteristics, and greater internal fuel capacity are design factors that increase the acquisition cost of Navy tactical aircraft. These items are essential for carrier operations and result in larger aircraft. These are also the primary constraints that make commonality between land-based and sea-based tactical aircraft very difficult to achieve without accepting serious limitations or much higher costs. Shown in Table II-8 are the acquisition costs of the major Naval Tactical Air Force modernization and improvement programs. Specific program details are presented below.

F-14

The primary mission of the F-14/Phoenix weapon system is achievement of maritime air superiority. The F-14 is considered capable of individually defeating the expected air threat well into the late 1980s. The overall adequacy of fleet air defenses, still a source of considerable concern, has been addressed in the naval forces section.

The Navy is equipping Navy fighter squadrons with a mix of F-14s and F-4s and Marine fighter/attack squadrons with F-4s. Remaining Navy squadrons, as well as all Marine Corps F-4 squadrons, will begin switching

TABLE II-8

Acquisition Costs of Major Navy Tactical Air Modernization and Improvement Programs 1/
(Dollars in Millions)

	FY 1976 Actual Funding	Trans. Period Actual Funding 2/	FY 1977 Planned Funding	FY 1978 Prop'd Funding	FY 1979 Prop'd for Authorization
Navy and Marine Corps Systems					
Procurement of F-14 Multi-Mission Fighter Aircraft	624	138	701	941	1,208
Development of the Navy F-18	119	22	347	627	431
Procurement of A-6E Attack aircraft	170	-	85	182	221
Procurement of A-7E Aircraft	173	30	220	68	28
Development of the Marine Corps V/STOL Attack Aircraft (AV-8B)	4	2	33	60	167
Procurement of E-2C Fleet Early-Warning Aircraft	163	23	157	197	192
Procurement of EA-6B Electronic Counter-Measures Aircraft	120	18	136	143	155
Procurement of AIM-7 and AIM-9 Air-to-Air Missiles	130	3	124	110	101

1/ Includes cost of RDT&E, procurement of the system and initial spares, and directly related military construction.
2/ July 1 to September 30, 1976

to the F-18 in the early 1980s. We are submitting an accelerated F-14 procurement plan as part of the FY 1978 budget in order to prevent a potential fighter aircraft shortfall in the early 1980s and to establish a more efficient production rate. The higher rate would include procurement of attrition aircraft that would be needed eventually to maintain 18 squadrons through FY 1990. The new F-14 procurement profile completes production of this aircraft by FY 1981, providing additional assets beyond the previously planned 18 squadrons which can be used both for Fleet Air Defense and to satisfy the interim reconnaissance requirement. The accelerated F-14 procurement profile should also permit some reduction in the average aircraft unit cost.

The F-14 engine, the TF-30, has experienced several failures over the past several years that have resulted in the loss of aircraft. In addition, the reliability and maintainability of the Phoenix guided-missile weapon system has been less than expected, with the result that overall F-14 readiness has suffered. In view of the critical role of the F-14/Phoenix system in the Navy's primary mission of sea control, the Navy has established an F-14 readiness improvement executive committee -- "to determine the extent to which material support deficiencies are a contributing factor." This committee has already implemented a readiness improvement tracking system on those items which degrade system/aircraft effectiveness the most.

An F-14 TF-30 engine reliability improvement program has also been established to correct the susceptibility of the fan blades to damage from foreign objects and to improve the reliability of the air seal between the second and third stage fan blades. Both of these problems can produce a failure of the fan blades in flight, resulting in the possibility of fire on and loss of the aircraft. In view of the seriousness of the engine problems, the Navy requested an initial reprogramming of $24.5 million of FY 1977 funds to support programs for toughening the fan blades and redesigning the air seal. The eventual total program cost of currently planned F-14 engine modifications is $94.1 million.

Interim modifications have already been made to TF-30 engines on all operating aircraft and on those coming off the production line. With these modifications and improved inspection procedures, we are reasonably confident that further losses above those normally expected during peacetime have been prevented. In addition to the above engine improvements, the Navy plans to improve fireproofing of the flight control system: this will reduce further the effects of in-flight engine failures regardless of cause.

The TF-30 engine presently installed in the F-14 is capable of meeting the fleet air defense mission requirements and a large investment has already been made to improve it. While the Navy desires a replacement for the TF-30, completion of ongoing analysis of future F-14 airframe/engine/missile configurations is required prior to making any decision on a new

engine. A program to reengine the Navy's F-14, would be costly, probably over $2 billion. Therefore, it would be inappropriate now to fund any retrofit program in light of costly, ongoing repairs and other higher priority requirements.

F-18

The F-18 is being developed to replace the F-4s in the Navy and Marine Corps while an attack variant, the A-18, is planned to replace the A-7s in the Navy's light attack force. A reconnaissance version is also under consideration as a replacement for both the Marine Corps RF-4s and the F-14s that will be providing the Navy's interim reconnaissance capability in the mid-1980s. Failure to proceed with the F-18 program would have far-reaching effects on both force structure and force levels within the Navy. During the late 1980s and 1990s, the carrier-based fighter and attack force levels within Naval aviation would experience a significant decline.

All versions of the F-18 will have a common airframe and engine, thereby reducing the amount of maintenance support equipment required aboard ship. The Navy feels the commonality between the attack and fighter versions, specifically the retention of much of the fighter performance by the attack version, will enhance the multi-mission capability of the air wing. Furthermore, the research and development funds already spent on the fighter version of the aircraft would not have to be duplicated in developing a new attack aircraft to replace the A-7. Development of a reconnaissance version of the F-18 for both the Navy and Marine Corps is attractive from the point of view of both cost and commonality.

Initial F-18 procurement is scheduled for FY 1979. Production is programmed to reach 120 aircraft a year by FY 1982, although a higher production rate of 132 aircraft a year is being considered. This higher rate would be more efficient, reduce the average unit cost and permit early production of reconnaissance variants. Increased near-term F-14 procurement should not be seen as warranting delays in F-18 development. We continue to support the F-18 program, subject to successful completion of test and evaluation.

A-6E

Funds are being requested for the procurement of 12 A-6Es in FY 1978, and another 15 in FY 1979. Renewed emphasis on U.S. sea control capabilities led to a review of the attendant need for an all-weather/ night antishipping air attack capability. The A-6 procurement program proposed in this year's defense budget will provide increased all-weather attack force levels through the 1980s to carry out this specific task. Further enhancement of the attack capabilities of the A-6E are planned and include installation of the Target Recognition and Attack Multi-Sensor (TRAM) and incorporation of a Harpoon capability. TRAM provides

these aircraft with a forward-looking infrared receiver, a laser ranger/designator, and a laser receiver. This system is intended to enable the A-6E to detect, identify, classify, and attack targets which cannot be so resolved by radar, electronic emission, or other visual means. In addition to providing the antishipping attack capability required for sea control, the A-6E is utilized by the Marine Corps to support amphibious operations and Marine ground forces. Continued procurement of the A-6E by the Navy provides an effective weapon system for the demanding sea control mission.

A-7E

In light of proposals to accelerate F-14 procurement and continue A-6E procurement, plans are to procure only six A-7Es in FY 1978 and then terminate procurement in FY 1979. Accelerated F-14 procurement will eliminate the fighter shortage faced by the Navy in the 1980s and provide an aircraft more suitable than the A-7 to satisfy the interim reconnaissance requirement. Transition of the Naval Reserve A-7 units to A-7Es will reflect delivery of the A-18 to the active force, now scheduled to begin in FY 1984. This will preclude any significant shortfall in the Navy light attack aircraft inventory.

AV-8B

The AV-8B program has been revised to provide four test aircraft in addition to the two YAV-8B prototypes. This will avoid previously scheduled concurrency between development and procurement. Testing to date continues to confirm that superior performance will be achieved in the 8B. Wind tunnel tests at NASA's Ames Research Center have shown that the AV-8B engine inlet provides a 650 lb. vertical take-off (VTO) lift increment over the AV-8A compared with a 600 lb. design expectation. Tests showed the AV-8B improved wing, combined with the new intake, provided a 6,000 lb. short take-off gross weight improvement for the AV-8B over the AV-8A based on a 1,000 ft. take-off. Lift improvement devices demonstrated a 650 lb. VTO increment that is additive to the revised inlet performance, thus providing the AV-8B with a net 1,300 lb. vertical take-off increase over the AV-8A.

The designed maximum payload of the AV-8B is increased to fourteen 500 lb. bombs, two Sidewinder missiles, and two 30mm cannon. This payload and a 45 percent increase in fuel capacity of the AV-8B over the AV-8A will significantly enhance the capabilities of the Marine Corps light attack force. Currently, procurement of 336 aircraft is planned with an IOC of FY 1984.

E-2C

The E-2C is one of the primary support aircraft required by the Navy for the sea control mission. The E-2C provides the essential air-to-surface

coordination and extended radar horizon needed for successful ASW, AAW and antisurface ship operations. The improvements in the overland detection and automatic tracking of the E-2C radar, with its Passive Detection System, represent an order of magnitude increase in capability over the earlier E-2B model. The planned procurement of the E-2C Hawkeye has been increased to 77 aircraft in order to provide four aircraft per carrier. This force level would permit each carrier to maintain at least one E-2C continuously airborne for an extended period of time. The E-2C is considered essential for proper battle management of the F-14/ Phoenix, in its role of providing fleet air defense, and also for coordination between air and surface units required for employment of the S-3 or P-3 aircraft in ASW operations. Growing Soviet naval surface capabilities, highlighted by the recent introduction of the carrier Kiev, have re-emphasized the importance of the surface surveillance capabilities of the E-2C.

EA-6B

The funding shown for the EA-6B program in this year's five-year defense plan will complete the procurement of 90 aircraft by FY 1980. The EA-6B provides a variety of sophisticated electronic warfare capabilities for both sea control and interdiction operations. Implementation of the decision taken last year to retire the older EA-6As in the Marine Corps and replace them with EA-6Bs requires a total of 90 aircraft in order to equip the carrier air wings with 36 UE aircraft and the Marine Corps with 15 UE aircraft. The advantage of increased mutual operational and logistics support between the Navy and Marine Corps in the electronic warfare area will be significantly enhanced since both will operate the EA-6B aircraft.

Air-Launched Ordnance

Several major missile programs begun in previous years are continuing. The AIM-7F and AIM-9L air-to-air missiles will enhance F-4 and F-14 close-in and medium-range engagement capability. Phoenix missile procurement, as well as the development of improvements to Phoenix, are continuing. These improvements will increase the reliability and maintainability of the system while also enhancing its capability against air-to-surface missiles and electronic countermeasures.

Condor air-to-surface missile development has been terminated. Now underway is a much less costly program to provide data link kits for existing Navy Walleye electro-optical glide bombs so as to develop our otherwise limited standoff attack capabilities. We are continuing to study our programmed capability to attack heavily defended land and sea targets to redefine our future standoff missile needs.

The Navy and Air Force are working jointly on several other guided-weapons projects to improve strike warfare capabilities. The High-speed Anti-Radiation Missile (HARM) is under development to provide a counter to land- and sea-based air-to-surface missiles. Other programs include a

joint-use tactical data link to improve guidance accuracies and reduce electronic warfare vulnerability while reducing overall costs to the Defense Department through joint development and use. The Marine Corps is planning on procuring laser Mavericks beginning in FY 1979, assuming that ongoing test and evaluation of the system prove successful.

D. Mobility Forces

1. Program Basis

As we improve land, naval, and tactical air forces, it is clear that the mobility forces which must support their deployment need to be strengthened as well. In order to do this effectively, we must decide how to:

-- increase early reinforcement capability to deal with a NATO/Warsaw Pact confrontation or conflict;

-- modernize tactical airlift forces;

-- increase aerial refueling support for general purpose forces; and

-- enhance sealift capability for support of both major and minor contingencies.

Increasing U.S. Capability for Reinforcement of NATO

The need to deploy rapidly large numbers of U.S. troops -- and in particular their combat vehicles and equipment -- to the NATO theater in order to counter a sudden Warsaw Pact force build-up or conventional attack is the most important determinant of the size and composition of our strategic mobility forces. Because of the primacy of the goal and the complexity of the problem, the Department's strategic mobility programs have been the subject of intense Congressional interest over the past few years. Recently, the Defense Department has completed new analyses of NATO reinforcement. As a result of this long period of review and the recent studies, we now are more confident than ever in recommending the programs in this budget.

The latest and most comprehensive of these analyses was conducted by the Joint Staff over the last six months. The Joint Staff's study included a review and assessment of units and planning factors used in movement analyses as well as an evaluation of the readiness of deploying forces, strategic lift programs and equipment prepositioning programs. Additional details of this study and its results are contained in a separate report to be forwarded to the Congress. The FY 1978-82 strategic mobility programs in the Defense budget discussed below are consistent with the conclusions of that study effort.

One finding of the studies is that improving procedures for readying units for movement and expediting their unloading, "marry-up" with equipment, and travel to combat positions can significantly decrease the deployment time of all forces. Probably the greatest single improvement in this

respect would be to decrease the time required for airlifted troops to be issued materiel from prepositioned stocks (POMCUS). Planning and procedures in this area have been intensively reviewed and some progress has been made in shortening the marry-up time. We are continuing to look for more efficiency in this area.

The most recent strategic mobility study has confirmed that there are only two basic ways -- other than forward deployment of additional U.S. combat forces in peacetime -- to improve the United States' contribution to NATO's combat potential in the first few weeks after an attack or a decision to mobilize. These alternatives are improved strategic airlift and additional prepositioning of equipment -- and they are not mutually exclusive. Sealift, which moves the major portion of later-arriving units and resupply, is essential to our capability to sustain operations in the NATO theater. However, under any reasonable set of assumptions, initial sealift deliveries of fully equipped forces to the NATO front will lag airlift deliveries and distribution of prepositioned equipment to arriving combat troops by at least 10 to 15 days.

The FY 1977 Defense budget and Five-Year Defense Program called for increasing the amount of materiel prepositioned in NATO, and for a significant improvement in our strategic airlift capability to support that theater. Congress approved the initial stages of our proposed reconstitution of POMCUS stocks to the previously authorized level of 2-1/3 division equivalent sets of equipment. This program has been accelerated. However, Congress approved only a portion of our airlift enhancement program; for the third consecutive year the Civil Reserve Air Fleet (CRAF) Modifications program proposal was disapproved by Congress, again precluding a major increase in our strategic airlift capability. In view of Congress's continuing reluctance to support this effort, we have significantly reduced the CRAF Mods program, and instead are requesting significant increases in prepositioning.

Modernizing Tactical Airlift

As has been recognized for some time, our tactical airlift force will require modernization in the early 1980s. The older (A and B model) C-130s and our only short take-off and landing (STOL)-capable aircraft, C-123s and C-7s, are approaching the end of their useful service life. There are two basic options for modernizing the fixed-wing force: the Advanced Medium STOL Transport (AMST), now in the prototype evaluation phase, or a new C-130 variant.

A critical factor in choosing between these options is the nature of the land forces "demand" for fixed-wing tactical airlift support. That is, what will be the mix of cargo types (palletized or unit equipment), probable payloads, and operating conditions that will characterize future conflicts? Because of the many uncertainties inherent in projections about conflict situations, the Army's specific tactical lift requirements have proved difficult to quantify. Work in this area is continuing, with

a view to providing a sound, analytical basis for making a decision on this program later this year. Preliminary analysis based on the best available estimate of Army demand suggests that the AMST would be the most cost-effective choice in the long run. Because of this conclusion, continuation of the AMST prototype development program is considered justified at this time. When further data are available on the AMST, we will have a more solid analytical basis on which to compare the AMST with variants of the C-130.

Other tactical airlift problems must be resolved as well. The Army's large, heavily utilized force of obsolescent CH-47 helicopters must be modernized or retired. The Marines and Navy have a growing need for a heavy-lift helicopter. A major portion of the Navy's carrier on-board delivery (COD) force urgently needs replacement.

Increasing Aerial Refueling Support for General Purpose Forces

With all of the existing force of KC-135 aerial tankers committed to support of the strategic bomber force during a "fully-generated" alert, a dedicated tanker force is needed to meet the refueling needs of those general purpose force aircraft which might have to be deployed overseas. Most fighter/attack aircraft would need aerial refueling during flight from the United States to the NATO theater; all such aircraft would be dependent on tanker aircraft for movement to more distant areas. Aerial refueling would also decrease movement times by increasing aircraft payloads and reducing deployment distance during a major airlift to either Europe or the Mideast, and greatly expand the geographical area over which U.S. strategic airlift can be employed without undue dependence on foreign bases.

The general options for acquisition of a dedicated general purpose tanker force are either development of a completely new tanker optimized to military refueling needs or modification of an off-the-shelf, wide-bodied commercial jet. The latter option is cheaper and it provides an aircraft which can carry significant payloads of oversized military cargo, thus potentially enhancing our currently deficient oversize airlift capability. The Advanced Tanker/Cargo Aircraft (ATCA) program reflects the Department's preference for adapting a wide-bodied commercial aircraft to tanker configuration.

Sealift Enhancement

Prior to discussing overall sealift requirements and programs, it is useful to relate sealift to airlift and prepositioning in support of a NATO contingency. While in the past few years, the Defense Department has been criticized for emphasizing airlift at the expense of sealift -- this is not the case. Airlift and sealift are complementary in U.S. programs to help defend NATO. Airlift is necessary to move fully-equipped units -- and to aid in the rapid movement of units with a major portion of their

equipment prepositioned in Europe -- in the critical first 20 to 30 days after a decision to reinforce. Sealift helps move later-arriving forces and provides the necessary capability to sustain U.S. and allied forces once engaged. Strategic mobility programs are structured to produce a complementary balance of airlift/prepositioning and sealift capabilities.

The relatively low level of funding in the Defense budget for sealift programs is misleading. Other parts of the federal budget are underwriting major portions of the cost to acquire and operate numerous U.S. flag ships through construction and operating subsidies. Many such ships with military cargo capability will be made available if needed in wartime. Finally, it should be noted that in the past the Department has proposed military procurement and operation of additional dedicated sealift. This option was embodied in such programs as the Fast Deployment Logistic Ships and Forward Floating Depots. In every case, these proposals met with strong Congressional resistance and most were denied altogether.

The general alternatives considered in the Department's recent studies for improving sealift include: re-initiation of a rapid reinforcement ship -- such as a roll-on, roll-off (Ro/Ro) special capabilities for vehicle transport to be operated by the Military Sealift Command (MSC); increasing the readiness of selected National Defense Reserve Fleet (NDRF) ships for both minor and major contingencies; making U.S. shipping available earlier for minor contingencies; and working with our NATO allies to achieve greater and earlier commitment of their shipping during a NATO mobilization. We are either pursuing or actively considering all of these options at this time.

2. Force and Program Status

Over the program period, mobility force levels will not change appreciably, as shown in Appendix Table 6. Most of the programs were described here last year. The funding request for major programs is shown in the table on the next page.

a. Early NATO Reinforcement

(1) Strategic Airlift

The strategic airlift force is projected to remain at its present size, with 70 unit equipment (UE) C-5 and 234 UE C-141 aircraft. We still see a need to improve this fleet through an increase in the wartime utilization rate and structural modifications.

Utilization Rates

Efforts to increase the wartime utilization rate of the aircraft to its effective maximum -- 12.5 hours "surge" for the first 45 days, 10 hours "sustained" thereafter -- are continuing. Full achievement of these rates will not occur until the early 1980s.

TABLE II-9

Acquisition Costs of Major Mobility Forces Modernization and Improvement Programs 1/
(Dollars in Millions)

	FY1976 Actual Funding	Trans. Period Actual Funding 2/	FY1977 Planned Funding	FY1978 Prop'd Funding	FY1979 Prop'd for Authorization
Strategic Airlift					
Procurement of Additional Replenishment Spares for C-5 and C-141 Aircraft	56	7	48	50	-
Engineering and Development of C-5 Wing Modification	21	10	23	42	37
"Stretch" Modification to C-141 Aircraft to Increase Capacity	17	-	-	90	88
Modification of Civilian Wide-Bodied Passenger Aircraft to a Convertible (Cargo-Passenger) Configuration	-	-	-	15	15
Tactical/Logistical Helicopter Airlift					
Engineering and Development of Advanced Medium STOL Transport (AMST)	85	11	29	25	86
Engineering and Test of Army CH-47 Helicopter Modernization	10	2	26	34	16
Acquisition of Navy/ Marine Corps CH-53E Helicopter	12	21	106	87	177
Planning and Development of Carrier-Onboard Delivery (COD) Aircraft	6	2	2	10	22

TABLE II-9

Acquisition Costs of Major Mobility Forces Modernization and Improvement Programs 1/
(Dollars in Millions)

	FY1976 Actual Funding	Trans. Period Actual Funding 2/	FY1977 Planned Funding	FY1978 Prop'd Funding	FY1979 Prop'd for Authorization
Aerial Refueling					
Development and Procurement of a new Advanced Tanker/ Cargo Aircraft (ATCA)	-	-	29	277	227

1/ Includes costs of RDT&E, procurement of the system and initial spares, and directly related to military construction.
2/ July 1 to September 30, 1976

C-5 Wing Modification and C-141 "Stretch" Modification

We are continuing with programs to improve the C-5 and C-141 aircraft. Results of fatigue tests on the current C-5 wing, coupled with projections of future usage, indicate the desirability of replacing the outer wing in addition to the center and inner wing sections, as previously planned. This will increase acquisition costs by about 8 percent, but will probably reduce operating costs in later years. The C-141 Stretch Modification has completed the prototype fabrication phase and is meeting all schedule milestones within budget constraints. A production decision is expected late this year.

Reduction of CRAF Modifications Program

We continue to believe the CRAF Modifications program to be one of the most cost effective of the DoD airlift enhancements; therefore, we are again requesting $15 million in funds to initiate the program. We have structured the program to modify four aircraft in FY 1978, all on a cost-sharing basis with the airline companies. This is the least costly method to the Federal government since the aircraft will be operated and maintained by the owning airline, but will be available to the Department to augment U.S. strategic airlift capability during a national emergency.

(2) Prepositioning

Because of the recent increases in Warsaw Pact short-warning attack capability -- coupled with continued Congressional opposition to the DoD-proposed CRAF Modifications program which would be useful in helping stop a sudden Pact attack -- the Department is now beginning to plan major additions to prepositioned Army materiel in the NATO theater. The current five-year program includes funds for reconstituting the previously authorized 2 1/3 division sets of materiel by FY 1979, and for adding several more division sets in the early 1980s. The specific units involved and the locations of the new prepositioning sites are currently under study.

(3) Unit Readiness and CONUS Transportation/Outloading

The Army is working through its "OMNIBUS" measurement system to insure that deploying units are ready for movement overseas as lift assets become available. Other efforts to decrease movement preparation time include conduct of command and control exercises and pre-negotiation of contracts for stowage and movement of materiel. The Army is also working on a "Railroads for National Defense" program which will designate critical routes for movement of Army units. In addition, the Army is working through the Maritime Administration (MARAD) to insure availability of adequate sealift berthing facilities, and in FY 1979 will start to expand its currently deficient ammunition storage and handling capacity.

(4) In-theater Transportation Capability

Continued support of the Minimum Required Logistic Augmentation Europe (MR LOGAEUR) concept and program is necessary to achieve an adequate reception capability in Europe, even with the planned heavy reliance on host nation assistance for terminal services and inland transportation.

(5) Exercises

Our major strategic mobility exercises -- REFORGER for ground forces and CRESTED CAP for tactical air forces -- are essential to maintaining allied confidence in U.S. capability and resolve to reinforce NATO; in addition these exercises provide a means for testing new mobility concepts and for training of both deploying and mobility forces. Continued support for such exercises is critical to the success of our conventional forces strategy for defending NATO.

b. Tactical Airlift

Both fixed-wing and helicopter tactical airlift force levels are projected to remain fairly stable over the five-year program period, except for a decline in the Navy's COD force as obsolescent C-1s are retired before new replacements can be made available. We now have 15 active and 36 reserve tactical airlift squadrons.

Advanced Medium STOL Transport (AMST)

The AMST program now has four prototype aircraft flying (two each from Boeing and McDonnell Douglas). From all reports these aircraft are meeting test requirements and schedules successfully. The FY 1978 budget contains funds to initiate engineering development of one of the prototype designs if it is decided to pursue this program. This decision will be based on a realistic estimate of Army needs and cost/effectiveness comparisons of the AMST with C-130 variants in meeting the Army requirement, as well as a complete evaluation of the AMST prototypes. A decision is expected later this year. Procurement of AMSTs would begin in the early 1980s.

CH-47

The Army's CH-47 Modification program is continuing with no significant change from last year. The planned modification program will improve the capability and extend the service life of about 360 CH-47s.

CH-53E Helicopter

The development cost of this program has increased by some $25 million, partly because of improvements which will result in later operating savings (the major improvements are inclusion of a digital flight control system and a more reliable and maintainable transmission). Despite the near-term cost increase, we are continuing with this program, because it is the least expensive option available for providing a helicopter capable

of meeting the growing Marine Corps requirement for moving heavy equipment. The CH-53E will also fulfill the Navy's vertical on-board delivery (VOD) mission. A total buy of 70 CH-53Es is planned.

Carrier On-Board Delivery (COD) Aircraft

The Navy's COD program is being completely restructured, as required by Congress. We are again requesting proposals from industry for a COD aircraft which will meet the Navy's need. All proposals will be reviewed and the most cost-effective alternative will be selected later this year. We are including $10 million in FY 1978 and $22 million in FY 1979 for an anticipated COD RDT&E program. Until a new COD aircraft is developed and produced, logistic support of the carrier force will be significantly reduced since the aging C-1 aircraft now in the force must be retired very soon.

Airlift Consolidation

DoD's consolidation of airlift forces is now virtually complete. MAC has assumed effective control of C-130 assets in the United States and will coordinate C-130 movements overseas through representatives at the unified command headquarters. In order to increase the efficiency of our vitally important airlift during the initial phases of any conflict, large or small, the President has decided to designate MAC a "specified" command.

As indicated in replies to several Congressional inquiries, OSD has over the past several months been evaluating a Department of the Navy proposal to continue the modernization of their organic tactical airlift force -- a program which was terminated two years ago, following review of the Navy FY1976-80 program proposals. The recent review concluded that the Navy proposal would not alleviate DoD's airlift shortfall (the C-9B aircraft proposed for procurement would not carry "oversize" cargo); that organic Navy airlift probably would not provide significantly better service than would be available through reliance on MAC organic airlift, supplemented by commercial augmentation as necessary; and that the Navy proposal was certainly more expensive in the near term, and probably more expensive in the long term, than the MAC/commercial augmentation alternative. Based on these considerations, we are not proposing to procure the additional organic airlift requested by the Navy. Instead, MAC will meet Navy and USMC airlift needs through a combination of organic and commercial airlift. This decision should produce adequate airlift support to the Department of the Navy, at the least cost to the taxpayer.

c. Aerial Refueling

Advanced Tanker/Cargo Aircraft (ATCA)

Aerial refueling requirements for general purpose aircraft constitute the primary justification for the ATCA. The choice between candidate

aircraft, and ATCA force levels, will be determined largely on the basis of the aerial refueling mission. The aircraft's cargo capability, while potentially useful, will not be the major factor in either source selection or force level derivation. Contractor proposals for production of the ATCA have been received. A source selection decision is scheduled for March 1977. The DoD program includes funds for up to 11 ATCAs in FY 1978/ 1979; the ultimate size of the ATCA force is undetermined at the present time, in part because this will depend on whether the DC-10 or Boeing 747 candidate is selected.

d. Sealift Enhancement

Current and projected sealift assets available to Defense during mobilization include: 27 dry cargo ships and 30 tankers operated by the Military Sealift Command (MSC); 139 inactive, "mothballed" dry cargo ships controlled by the Maritime Administration (MARAD) in the National Defense Reserve Fleet (NDRF); about 300 operating ships of the U.S. commercial and Effective U.S.-Controlled (EUSC) fleets; and about 200 operating NATO ships.

The main defense function of these ships would be to deploy and sustain U.S. forces in a major conflict with the Warsaw Pact. As indicated previously, sealift complements our airlift/prepositioning programs in the NATO scenario by moving some of the later-arriving combat units and the major portion of the POL (Petroleum, Oil, and Lubricants) and ammunition required to resupply NATO forces once engaged.

Despite strong Congressional opposition to similar programs in the past, the Department is now considering acquisition of a new class of "Ro/Ro" ships in the early 1980s. This proposal will be further studied and defined during development of the FY 1979 budget and FY 1979-83 five-year program. These Ro/Ro vessels would of course be useful in a major reinforcement of NATO, but their greatest value would come in support of minor contingency operations, particularly in distant, undeveloped areas.

In addition, we are pursuing three other sealift initiatives which are very low in cost, but would enhance our capability to reinforce/resupply Europe, or carry out minor contingency operations, or both:

-- First, we are continuing with the program outlined last year to make the equivalent of 30 NDRF ships available for military use 10 days after notification. These ships, designated the Ready Reserve Force, are to be upgraded to a higher materiel readiness condition with funds in the FY 1978 through FY 1982 budgets.

-- Second, we are continuing and refining the MSC-managed Sealift Readiness Program under which 129 ships would be provided by commercial carriers within 60 days of notification to support non-mobilization contingency operations.

-- Finally, and probably most important, we will be working, through MARAD, with our NATO allies to make their shipping available on mobilization day, rather than at initiation of hostilities, and to increase the magnitude of the NATO shipping commitment from 200 to about 300 ships.

III. SECURITY ASSISTANCE

A. Introduction

The term "security assistance" includes:

1. Foreign Military Sales (FMS), by which defense articles and services are sold to foreign countries and international organizations;

2. the FMS Credit program through which credits are provided or guaranteed;

3. the Military Assistance Program (MAP);

4. the International Military Education and Training Program (IMETP); and

5. Security Supporting Assistance.

MAP, IMETP and Security Supporting Assitance are carried out under the Foreign Assistance Act as grant aid for which the U.S. receives no reimbursement from the recipient.

The purpose of the security assistance program is to strengthen the security of the United States by enhancing the defense posture of nations with which we share interests. If the United States felt it were in our interest to stand apart from the world, then perhaps security assistance would be unnecessary; if our country no longer believed in assisting free nations to help themselves to remain free and independent, then too, perhaps we could terminate such programs; or if America were impregnable and totally self-sufficient, then we could turn inward, if that were the choice. But interdependence is a fact of modern life and collective security is important to us in the dangerous world in which we live. As a nation we have felt that it is in our interest to support the efforts of allies and friends so that they can protect themselves.

B. Areas of Concern

U.S. foreign military sales have grown for a number of specific reasons:

-- because allies and foreign friends have decided they need military equipment of American manufacture and services from the U.S. Government and American suppliers;

-- because the United States has recognized the legitimacy of the needs expressed by these governments in today's uneasy and turbulent world;

-- because more countries are economically able to purchase such equipment and services;

-- because many sovereign nations prefer to purchase military equipment and services from the United States rather than from other countries;

-- because of inflation; and

-- the fact that a major fraction of security assistance is not for weapons but rather for a variety of services, including construction and training.

This growth has given rise to various concerns regarding:

-- the levels of sales, particularly to the Middle East;

-- regional arms competition;

-- eventual usage of these weapons by the recipients;

-- the level of U.S. commitment to recipients;

-- the political orientation of recipients; and

-- the nature of the decision-making process.

Foreign Military Sales (FMS), which now constitute the bulk of U.S. security assistance, climbed gradually over the past quarter century as nations initially dependent upon grant aid became increasingly able to purchase the defense equipment and services they require. Since 1973-74, sales levels have grown rapidly, primarily as a result of major purchases by a relatively few Middle Eastern countries, chiefly Iran, Israel and Saudi Arabia. The total of all FMS orders climbed from $3.3 billion in FY 1972 to $10.6 billion in FY 1974. Since then, sales orders have declined and are expected to total approximately $8.7 billion in FY 1977.* Although projection of the FY 1978 levels of FMS orders is highly tentative, they will probably continue to decline to approximately $7.7 billion.

It is worth noting that, from 1950 to 1976, sixty percent of total FMS orders dealt with supporting equipment, spare parts and supporting services, while only forty percent were for weapons and ammunition. In constant dollars, (i.e., with the effects of inflation removed) the overall level of the security assistance program in recent years has been about the size it was in the early 1950s. Viewed over the long run, the average in constant dollars has been about $6.5 billion annually.

* These figures are for FMS orders only. In FY 1974, the total of all U.S. military export programs and orders, including not only FMS but grant aid and commercial exports as well, was $12.4 billion. This includes $784.9 million in MAP, $10.6 billion in FMS orders, and slightly over $1 billion in estimated commercial orders for defense articles and services. Commercial deliveries in FY 1974 amounted to $502 million.

In Western Europe, in the years following World War II, the level of early U.S. military grant aid to U.S. allies was, in constant dollars, nearly as substantial as current sales. In the 1960s and early 1970s, the emphasis was on Indochina. Now, the emphasis of the security assistance programs has shifted to the Middle East, where much of the effort goes into construction. Moreover, the security assistance program's emphasis has shifted from grant assistance for allies to foreign military sales to friendly countries with which we have no formal treaty ties.

Over sixty-three percent (63%) of U.S. foreign military sales between FY 1974 and FY 1976 have been in the Middle East, primarily to three countries: Iran, Israel and Saudi Arabia. Israel's security needs, the sharply increased oil revenues of Iran and Saudi Arabia, and their security concerns have been the primary causes for the increase in military sales to those countries over the past three years. All such sales have been determined to be in accord with and in support of U.S. foreign policy goals in the Middle East, which are as follows:

-- to help Israel maintain its security and survival as a sovereign nation;

-- to maintain a military balance in the region -- which contributes to an equitable settlement of the Arab-Israeli dispute;

-- to meet the security concerns of the countries in the Persian Gulf area and thereby promote political stability in that important region; and

-- to sustain friendly relationships with all countries in the area important to U.S. interests.

In sum, the shift in emphasis of the U.S. security assistance program has resulted from the evolving international environment.

The proliferation of conventional weaponry around the world is a cause for concern; and the United States has taken the initiative in trying to secure a multilateral agreement that would restrict arms sales. However, foreign suppliers have objected to suggestions that they curtail their exports of armaments; recipients, who are also sovereign states, have objected with equal vigor to suggestions that they curb their arms imports. France, during the period 1971 to mid-1976, sold $7.1 billion worth of weapons to other countries. During that same period, Great Britian agreed to export $4.8 billion worth of arms and West Germany accounted for $3.2 billion in arms contracts. The Soviet Union continues to export military materiel; between 1971 and mid-1976, it is estimated to have sold approximately $17 billion worth of weaponry. Unilateral U.S. action to curb the arms traffic will not avail; therefore, the United States must persist in its efforts to forge a multilateral international agreement with like-minded governments.

The possibility that military materiel of American manufacture provided to friends and allies could be misused is a cause for genuine concern. Efforts have been made and are being made to prevent that from happening. However, governments do topple; leadership and policy changes do occur in foreign countries as in our own; sovereign nations will continue to define their vital interests as they themselves see fit; and these interests may not always coincide with our own. We must decide in each case on the basis of the objective evidence at hand -- without rancor -- which course best serves our national interests, even though all the alternatives may present certain unattractive aspects.

The political orientation of several U.S. security assistance recipients has also stirred controversy. The United States does not approve of authoritarianism; nor should it be our policy to assist authoritarian regimes to maintain themselves in power. We wish all nations would embrace democratic systems. One could, of course, refuse to help any country less democratic than our own. It has been in our enlightened national interest, however, to help many foreign countries having different and developing political systems. Some of these nations are strategically important allies without which our ability to respond in a crisis would be critically curtailed. In other cases the security assistance relationship may indicate our encouragement of welcome progress toward democracy.

U.S. security assistance programs are the product of a continuous process of evaluation, assessing available alternatives, weighing needs against capabilities and costs against benefits. There are many Executive Branch participants in that process, principally the Department of State, but also Defense and Treasury, the Office of Management and Budget, the Arms Control and Disarmament Agency, and the National Security Council. In addition, there is the deep involvement of Congress.

The Secretary of State is charged by statute with the responsibility for determining security assistance policy and for overall supervision and general direction of all the programs. It is the responsibility of the Secretary of State to ensure that all programs support the foreign policy of the United States, including arms control and disarmament efforts and economic initiatives. Similarly, the Secretary of State is charged with approving or disapproving all U.S. foreign military sales.

Since December 31, 1974, both Houses of the U.S. Congress have reviewed all foreign military sales valued at $25 million or more prior to approval by the Executive Branch. All cases submitted to the Congress have received favorable reviews. In two instances such cases were modified in negotiations with the Congress prior to formal submittal by the Executive Branch. In addition to these statutory requirements for review, the Executive Branch has supplemented the process by giving prior notification to the Congress and informally consulting with its members about impending sales requests before formal submission. These consultations and the formal review process should ensure a thoroughly

debated U.S. Government position in the national interest.

Integration of security assistance programs with U.S. foreign and national security policy begins overseas in the field. With the Department of Defense providing the planning and fiscal guidance, U.S. representatives in over 70 countries and the three Unified Commanders annually provide data which, for a 5-year period, presents the best estimate of what foreign nations will seek to acquire for their defense establishments. This information provides the basis for the projections by the Military Departments of the quantity and types of equipment likely to be in demand.

Using these projections from the field, which include the comments by the American Ambassador and members of his Country Team, and following the established policy and fiscal guidance, the Security Assistance Program Review Committee -- an advisory body made up of representatives from State, Defense and other Executive Branch agencies -- addresses the country-by-country programs for grant aid and FMS credit. It takes into account such issues as the threat, human rights considerations, economic implications, and arms control considerations. The recommendations of this committee are used by the Department of State, in coordination with Defense, in the preparation of the budget submissions for security assistance programs to OMB. The final decision rests with the President and is incorporated in the federal budget for the next fiscal year for submission to the Congress.

Cash sales undergo a similar evaluation and assessment process, although they do not become part of the federal budget submission to Congress.

C. Benefits from Security Assistance

All governments seek a reasonable sense of security because the people to whom they are ultimately responsible expect no less. Just as the United States believes in having adequate defensive strength, so friends and allies seek to assure themselves that they have the means to protect themselves from aggression. Perhaps the most important political benefit deriving from U.S. security assistance is its contribution to regional stability and therefore to peace. Recipient countries that once felt threatened likely feel more secure and less obliged to preempt; and potential aggressors likely find themselves dissuaded from military adventures. Moreover, by strengthening conventional forces and inducing a sense of security, prudently administered assistance programs can help to discourage the potentially dangerous pursuit of nuclear options.

While such benefits cannot be quantified in dollars and cents, they are not insignificant. A prudent measure of security assistance can help to preserve existing regional balances. Where imbalances exist and

go unattended, the risk of conflict usually increases; and local wars have in times past forced us to devote substantially more resources to our own defense efforts.

Of importance is the role that security assistance plays in enabling us to maintain overflight and base rights abroad. These rights give us two essential capabilities: (1) the ability to move U.S. forces to vital areas more quickly and less expensively than if we had to deploy directly from the United States and; (2) access to strategic locations. Without foreign bases, we would need additional ships, planes and equipment -- which would necessitate a significant increase in the U.S. defense budget; or, lacking both, the national security of the U.S. would be subject to greater risk.

Appropriate security assistance, by shoring up the defensive capabilities of selected nations and contributing to stability, also reduces the need for the direct involvement of the U.S. military to protect U.S. national interests.

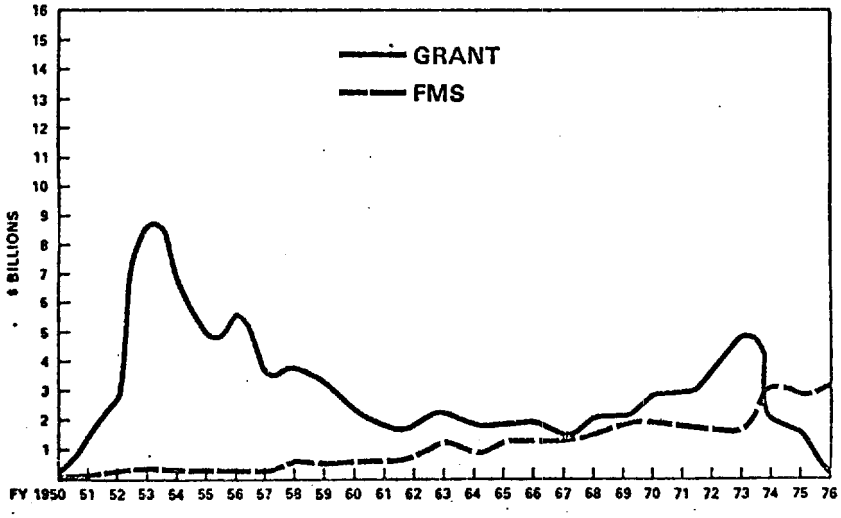
Appropriate military sales strengthen other aspects of our relationships with foreign countries as well. While cultural and economic ties with Europe and with our neighbors in this hemisphere have provided the foundation for a strong relationship -- which our military programs have supplemented -- bonds with other regions are often more narrow. A sound security assistance relationship frequently provides the basis for building closer and firmer relationships with many non-European allies and friends.

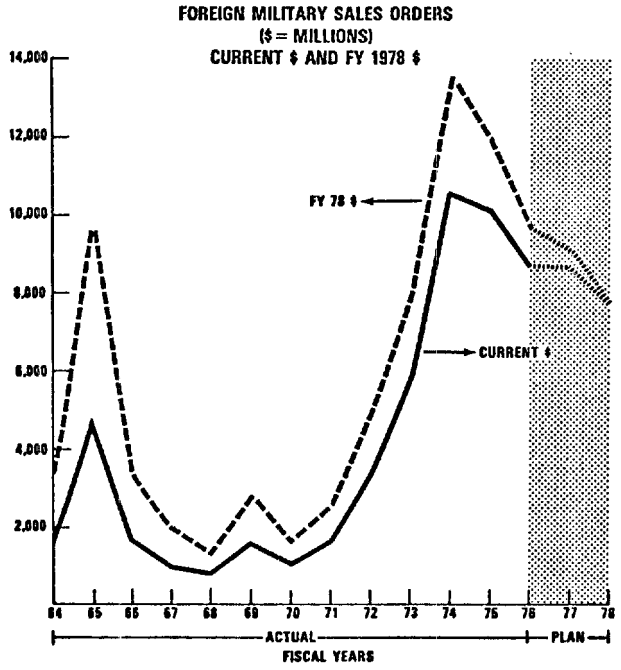
There are also secondary economic advantages. Foreign military sales enable us to recover a percentage of U.S. research and development (R&D) costs, which in turn frees funds for other R&D projects that enable American armed forces to maintain their technological edge. They allow both U.S. and foreign purchasers to benefit from greater economies of scale. Finally, those sales have a beneficial effect on our balance of payments and help defray the foreign exchange cost of both raw material and manufactured goods which the U.S. now imports in increasing quantities.

D. The Programs

Security assistance programs have undergone a considerable metamorphosis through the years. U.S. transfers of military materiel, construction projects and overseas technical and logistical training programs have assumed increased commercial and diplomatic importance. A new class of wealthy, non-allied recipients has emerged, primarily in the Middle East/Persian Gulf. A review of the key U.S. security assistance program -- the details of which are presented separately -- should therefore be helpful. The FY 1978 data represent current projections only and are subject to change prior to submission to the Congress. The following charts show U.S. deliveries of materiel and FMS orders.

DELIVERIES OF HARDWARE
FY 1950—FY 1976
(CONSTANT $—FY 1976)





There are four primary means by which the United States transfers military equipment and services to friends and allies abroad.

-- The Military Assistance Program (MAP), is a non-reimbursed grant materiel program which currently accounts for only about two percent of total U.S. military exports. For FY 1978, the request is $284.6 million for MAP.

-- A second grant program is the International Military Education and Training Program (IMETP). The FY 1978 IMETP request totals $36.3 million and is based on new pricing formulas which cover the cost of training, plus inflation. There is no net increase in the worldwide training program.

- Government-to-government sales are carried out under the FMS program, through which a foreign government contracts with DoD for defense articles and services. The Department of Defense is then responsible for procuring, delivering, accounting, billing, collecting payments, and for paying the American contractors. Sales under this program may be paid for in cash or financed with credit granted by the U.S. Government. A combination of credit and cash may also be used.

-- Commercial sales can be arranged directly between the foreign governments and U.S. contractors, although loans arranged through the FMS credit program may also be used for financing.

1. The Middle East/Persian Gulf/North Africa

The Middle East/Persian Gulf/North Africa area accounts for a major portion of U.S. security assistance programs. In support of the U.S. foreign policy objective of contributing peace and stability in that volatile region, the program currently calls for $1.3 billion in FMS credits and grant military assistance in FY 1978. Of this sum, only $55 million is grant aid.

In addition to credit sales, there are U.S. Government and commercial arms transactions on a cash sales basis, primarily with Iran and Saudi Arabia, although Jordan is increasingly able to pay cash for its military purchases.

Through the combination of FMS and commercial sales, and limited grant air, the United States Government, while fully supporting the continued ability of Israel to defend itself, seeks to strengthen its ties with the friendly, important governments in Saudi Arabia, Iran and Jordan which are -- like us -- striving to maintain peace and stability in the region.

2. Europe

Security assistance programs with allied governments in Western Europe have been an important element of our relationship in NATO for over a quarter of a century. In recent years, program emphasis has shifted from the Central Region southward to Portugal, Greece and Turkey, although the Federal Republic of Germany remains a major purchaser of U.S. military equipment. While not a member of the NATO alliance, Spain continues to be important to U.S. foreign policy and national security interests. For this reason, funds are programmed again this year to help support the defense efforts of the new Spanish government.

3. East Asia and Pacific

The United States has formal alliances with several recipients of security assistance in the East Asia and Pacific region. Although U.S. programs are relatively modest, they signify a continuing interest in the peace and stability of the area.

4. Africa

U.S. security assistance programs in Africa remain modest. All six sub-Saharan African countries for which grant assistance is currently programmed will receive training in FY 1978; Ethiopia would also receive materiel in the pipeline after termination of our MAP materiel program in FY 1977. The projected sales of military materiel respond to explicit, official requests from those African Governments and they support the U.S. policy of assisting friendly governments and ensuring the maintenance of a military balance in unstable subregions.

5. Latin America

With the exception of modest amounts for grant training programs, U.S. security assistance to Latin America for FY 1978 is largely confined to cash and credit sales; it is also anticipated that small amounts will be spent for commercial sales.

IV. INTELLIGENCE

A. Realignments in Defense Intelligence

With the appointment last year of a second Deputy Secretary of Defense, for the period necessary to reorganize and strengthen DoD intelligence operations, we have been able to make a number of improvements and realignments in DoD intelligence procedures and organization. The realignments were designed to improve DoD oversight of defense intelligence activities, improve the quality and timeliness of the intelligence product, and strengthen management processes. That having been done, it should be possible to proceed without the special management emphasis inherent in having a second Deputy directly involved. For this reason, it is not anticipated that it will be necessary to utilize the second Deputy Secretary of Defense position.

1. Oversight

To assure the legality and propriety of DoD intelligence operations, I appointed an independent Inspector General for DoD Intelligence. The Inspector General is responsible for ensuring that alleged abuses in or by an intelligence activity are promptly reported and thoroughly investigated. He works with the President's Intelligence Oversight Board and with other inspection and audit authorities inside Defense as well as exercising independent inspection oversight. In addition, the restrictions against impropriety and illegality, enunciated by President Ford, have been promulgated throughout the Defense Department and procedures have been adopted by the various agencies. In each agency, inspectors general and general counsels have been charged with new requirements for prompt reporting of any questionable activities.

2. Intelligence Product Improvement

A key factor in improving the intelligence product is the effectiveness with which users communicate to intelligence producers both what they need and what they are going to use it for. A review of the effectiveness of intelligence products showed that there were gaps in user-producer communications and that product usefulness was suffering accordingly. As one means of closing these gaps, for the past several months we have been testing the idea of a Defense Intelligence Board (DIB) composed of senior users, senior intelligence producers and intelligence collectors. The purposes of the Board are to ensure close and regular communications between DoD intelligence users and producers to make intelligence more useful, and to take action on urgent problems. Thus far, the concept has proved useful. Better communication between users and intelligence producers is evident and ideas for improvement are being implemented.

We are also working to upgrade the product by improving the techniques used in intelligence analysis. New research efforts are underway to find more effective ways of analysis and presentation of data, under the conditions peculiar to intelligence in which data are frequently incomplete and surrounded by some degree of uncertainty. One approach has been to apply the techniques of net assessment -- which we have found useful in comparing U.S. and foreign forces -- to the study of two opposing foreign forces.

3. Adjustments to the Operating and Management Structure

We have made a number of adjustments to the operating and management structures for Defense Intelligence. In making these adjustments, we have sought to strengthen management and ensure compliance with the President's overall arrangements for U.S. intelligence.

Under these arrangements -- now that the initial organizational steps have been taken -- an Assistant Secretary of Defense for Intelligence will have immediate cognizance over intelligence matters. He or the Deputy Secretary should represent the Department of Defense on the Committee on Foreign Intelligence, established under the National Security Council by Executive Order.

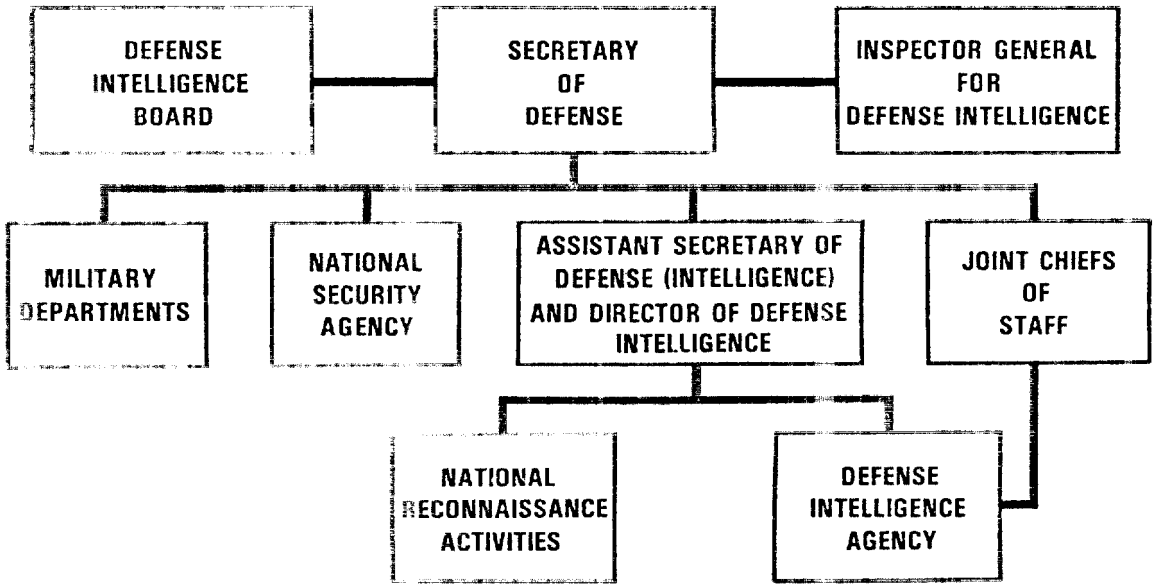
We have sought to eliminate a variety of separate relationships which existed within DoD for management of closely related activities, and to bring the various intelligence agencies under a single manager who could direct them on behalf of the Secretary of Defense.

The Assistant Secretary of Defense (Intelligence) can be simultaneously the Director of Defense Intelligence. The ASD(I) can continue to provide staff support to the Secretary; as the DDI, he can exercise line authority on the Secretary's behalf over intelligence matters, except as otherwise directed. DoD intelligence agencies and program heads will report through the ASD(I) to the Secretary.

The following chart depicts the current structure.

CHART IV-1

DEFENSE INTELLIGENCE STRUCTURE



A feature of these new arrangements is that the Director, DIA, will also serve as Deputy to the Director, Defense Intelligence. In this capacity, he will assist the DDI in his line functions of directing and planning the production of intelligence and other intelligence operations.

The basic roles and responsibilities of the Defense Intelligence Agency, the National Security Agency, and other DoD intelligence activities are not changed by these realignments.

With these steps, we have created a stronger intelligence oversight function by bringing producer and user together into an improved working relationship and streamlining management.

B. Program Direction

The Department's efforts have focused on three principal themes in preparing the FY 1978-82 Consolidated Defense Intelligence (CDIP)* and Intelligence-Related** programs and budget proposals -- modernization, readiness, and product utility. The goal that these themes support is the production of intelligence which reduces the level of current and future uncertainty for all levels of government decision-makers. To this end, intelligence manpower and funding resources are being requested from the Congress to undertake the following priority actions:

-- real program growth for modernization of systems and capabilities to meet current and projected intelligence requirements;

-- day-to-day readiness improvement of Defense intelligence capabilities through procurement of critical equipment and processing systems; and

-- increased product utility by making improvements to the quality and responsiveness of support to consumers.

Owing to the complex and rapidly changing world environment, the importance of accurate and timely intelligence to decision-makers for supporting national and Defense policies and decisions is increasing. On the other hand, appropriation constraints and inflationary pressures over the past few years have required intelligence expenditures to be reduced. The historical impact of these pressures on Defense intelligence and intelligence-related program resources is displayed in Charts IV-2 and IV-3 on the following page.

Since 1967, the real program value of Defense intelligence and intelligence-related activities has decreased 17 percent; manpower has decreased by 32 percent. When National and Selected Activities resources

* As stated in last year's Report, the CDIP includes the Consolidated Cryptologic Program (signals intelligence), the General Defense Intelligence Program (production, human source intelligence collection and similar activities), Special Activities and National and Selected Activities.

**Intelligence-Related programs include those activities in the Strategic Forces, General Purpose Force, Training, and Research and Development programs which are designed to provide intelligence support to military forces at the operating level.

CHART IV-2

DEFENSE INTELLIGENCE AND INTELLIGENCE RELATED ACTIVITIES

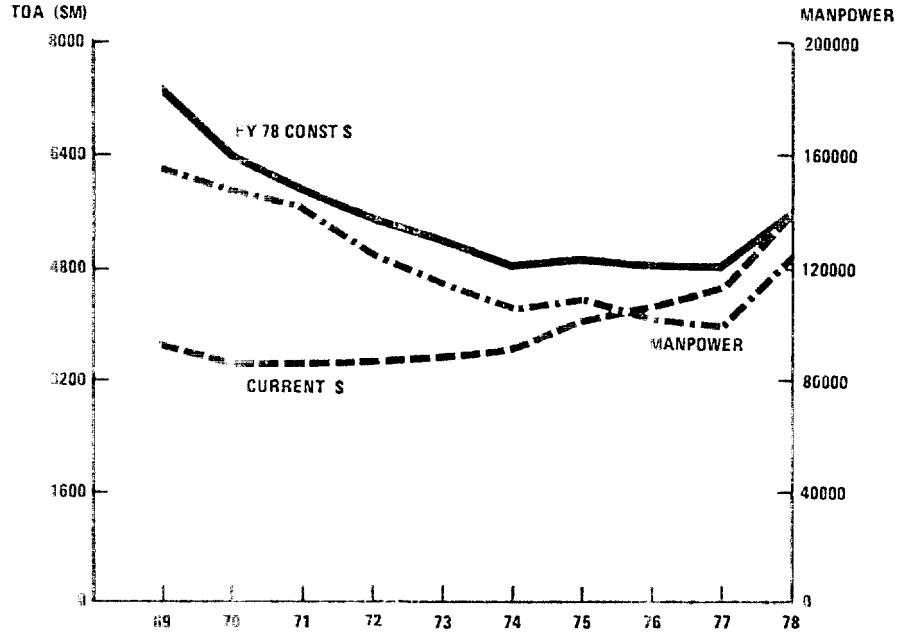
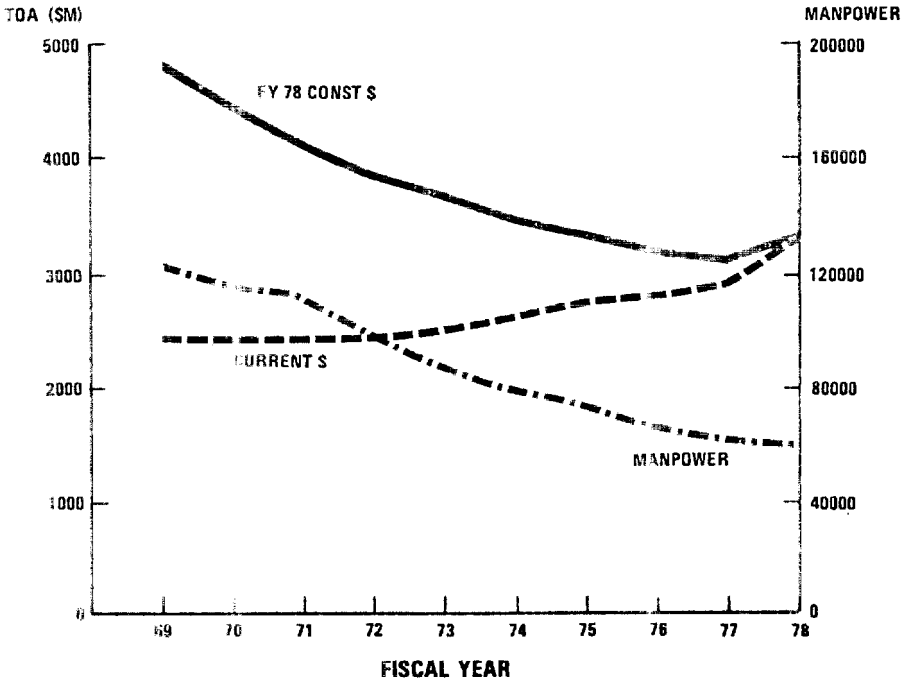


CHART IV-3

CONSOLIDATED DEFENSE INTELLIGENCE PROGRAM WITHOUT NATIONAL AND SELECTED ACTIVITIES



are removed from consideration, the real program value of the CDIP has decreased by 33 percent and manpower by 48 percent, since that time.

Given the new and seriously enlarged dimensions of the threats and uncertainties affecting national security, any further erosion of DoD intelligence capabilities must be prevented, and new capabilities in specific program areas must be selectively added. In particular, it is urgent to strengthen the capability of the analytical force to exploit emerging sources of near real-time intelligence and to use more fully the power of automation to manipulate large amounts of data rapidly. At the same time we must continue to seek economy through greater efficiency in operations.

The FY 1978 CDIP budget request displayed below reflects each of these major imperatives.

TABLE IV-1

FY 1978 CDIP
($=B)

	Total Obligational Authority
Cryptologic Activities	1.3
General Intelligence Activities	.8
Special Activities	1.2
National & Selected Activities	.8
	4.1

C. Specific Programs and Initiatives

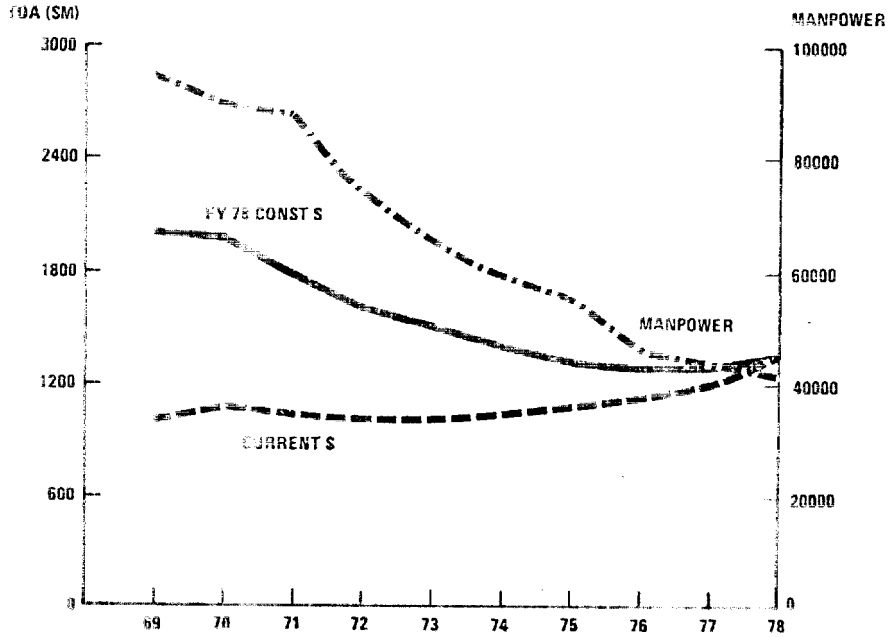
1. The Consolidated Cryptologic Program

The Consolidated Cryptologic Program (CCP) is managed by the Director of the NSA and is composed of projects and resources allocated to Signals Intelligence (SIGINT) activities. Chart IV-4 displays the resource investments in the CCP since 1967 and reveals their decline in real value.

The FY 1978 CCP budget request is approximately 10 percent over the FY 1977 appropriation primarily owing to the requirement to improve SIGINT support capabilities to tactical commanders through research and development, and to offset real and projected shortfalls in our worldwide SIGINT collection capabilities.

CHART IV-4

CONSOLIDATED CRYPTOLOGIC PROGRAM
HISTORICAL TRENDS



These capability shortfalls are primarily the result of an increasingly complex and technically sophisticated signals environment and the loss of some overseas sites, such as occurred recently when the U.S. withdrew from Thailand. To overcome these shortfalls and to reduce both manpower-intensive operations and the expense of overseas manning, the FY 1978 program includes approximately $150 million to:

-- continue the modernization of worldwide SIGINT collection assets with emphasis on remote control of operations via satellite data link relay; and

-- improve signal processing and reporting systems.

These initiatives are essential to maintain the effectiveness of the SIGINT collection system. For example, SIGINT provides information on the force modernization of Soviet tactical air and armor in Europe, and the state of readiness and posture of both Soviet strategic and general purpose forces. Steps are also being taken to identify and eliminate duplicative or ineffective communications and automated processing systems.

The FY 1978 program includes about $50 million for an intensive research and development effort to improve the SIGINT direct support capabilities integral to our operating forces. We are continuing our commitment to achieve maximum utilization of these capabilities and mutual support through enhanced interoperability, and mobility. The R&D effort also will be directed at improving automated selection of priority items for processing to provide more timely support for all users.

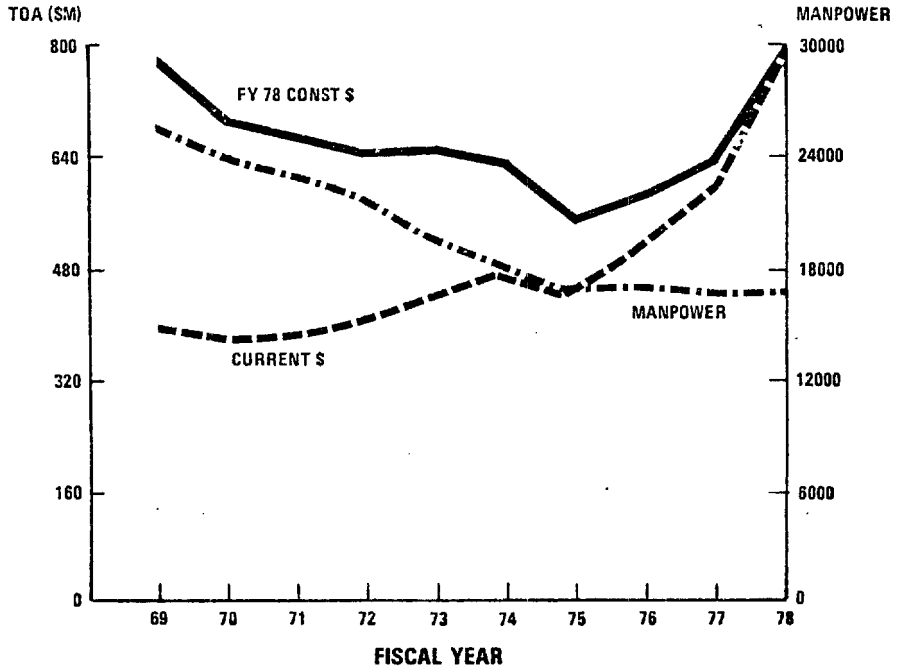
2. General Defense Intelligence Program

The General Defense Intelligence Program (GDIP) supports DoD intelligence production and general intelligence collection as well as those support programs centrally grouped for resource and operations management. Like the CCP, the GDIP shows a decline in real value, as displayed in Chart IV-5.

Funding requested for this program in FY 1978 is approximately 15 percent over the FY 1977 appropriation. This increase is directly related to the needs of users at all levels of the national security segment of our government. Principal emphasis is on (1) improved automated data processing (ADP) support to analytic capabilities; and (2) upgrade of our foreign technology data bases through the acquisition of more sophisticated intelligence collection systems.

CHART IV-5

GENERAL DEFENSE INTELLIGENCE PROGRAM
HISTORICAL TRENDS



For FY 1978 GDIP activities, we have requested funding for modernization of existing capabilities to correct deficiencies in automated data processing (ADP) systems and analytic capabilities. For example, in FY 1978 we will begin the time-phased consolidation of Atlantic Fleet and Pacific Command ADP systems which will result in more accurate and timely indications and warning intelligence to the supported commanders by providing analyst access to improved data bases. The program also includes funds in FY 1981-82 for the phased upgrading of the Navy's Ocean Surveillance Information System "SEA WATCH" ADP systems with a more capable and responsive replacement system. Funding is programmed in FY 1978 to hire threat analysts and to procure ADP equipment at the Army's Foreign Science and Technology Center and Missile Intelligence Agency to provide timely analysis and problem solving capabilities on key foreign weapons systems, such as new Soviet tank guns, sophisticated armor, and air defense weaponry.

GDIP procurement will also continue to emphasize improved day-to-day readiness. The National Military Intelligence Center (NMIC), which is responsible for providing indications and warning intelligence to national and military authorities, will require funds for equipment to help provide better analysis of the increased output of new collection systems, thereby increasing the ability to provide more timely early warning. Army and Air Force human intelligence exploitation capabilities will also be improved by funding for expanded efforts against approved strategic targets.

3. Special Activities/National and Selected Activities

In addition to the CCP and GDIP, requests for funding of the Special Activities Programs and National and Selected Activities are being submitted. These activities continue to provide essential support to national level policy-makers.

4. Intelligence-Related Activities (IRA)

These activities, outside the CDIP, respond to operational commanders' tasking for time-sensitive information on foreign entities and respond to national intelligence tasking of systems whose primary mission to support of operational forces. These activities are generally under the operational control of the supported commander, and are part of his force structure. While they provide a valuable peacetime input in support of the overall DoD objective of reducing uncertainty about foreign threats and crisis situations, their primary mission is support to the combatant force structure, and they are justified by the needs of that structure. The programs comprising IRA have been restructured into the following seven functional categories. This will facilitate program visibility and strengthen supervision and review of program development and resource allocation.

a. Tactical Warning

Tactical Warning provides notification to operational command centers that a specific hostile event has occurred as determined through surveillance of satellite, missile and air-breathing weapons delivery systems. These systems are under the direct control of operational commanders.

b. Tactical Support (Battlefield)

These systems are under local tactical control and are deployed to detect, locate, classify, identify, and determine the activity and mission, insofar as is possible, of hostile forces on and over the battlefield. These activities are principally conducted by intelligence units attached to or supported by combat force elements.

c. Tactical Support (Ocean)

Ocean surveillance is comprised of those systems which detect, locate, classify, identify, and determine the activity and probable mission of targets on, over and under the surface of the ocean. This category includes sensor systems, personnel, associated processing, and dedicated platforms, whether shore-based, airborne or afloat, and SIGINT direct support assets.

d. Intelligence Staff Support

This category includes personnel assigned to specified intelligence staffs supporting combined commands, unified and specified commands, component commands, departmental headquarters, joint staffs, OSD and Defense agencies.

e. Training

This function includes intelligence and related training which provides skilled personnel to the Defense intelligence community and military commands.

f. Intelligence Support Systems

Intelligence support systems are those which aid both the overall intelligence mission and the operational forces. They also include resources not reported elsewhere in the intelligence/intelligence-related categories.

g. Reserves and National Guard

This function is comprised of Reserve and National Guard personnel assigned to specific intelligence units and to intelligence billets designated for mobilization to augment departmental headquarters.

Chart IV-6 displays the resource investment trend for IRA since 1967. The increase in funding and manpower between the FY 1977 appropriation and the FY 1978 budget request is in part a reflection of the redefinition

of Intelligence-Related Activities (IRA) and the inclusion of programs not previously identified as being IRA. For example, inclusion of the new functional category, Reserves and National Guard, accounts for an increase of approximately $100 million and 20,000 personnel. The

CHART IV-6
INTELLIGENCE RELATED ACTIVITIES
HISTORICAL TRENDS

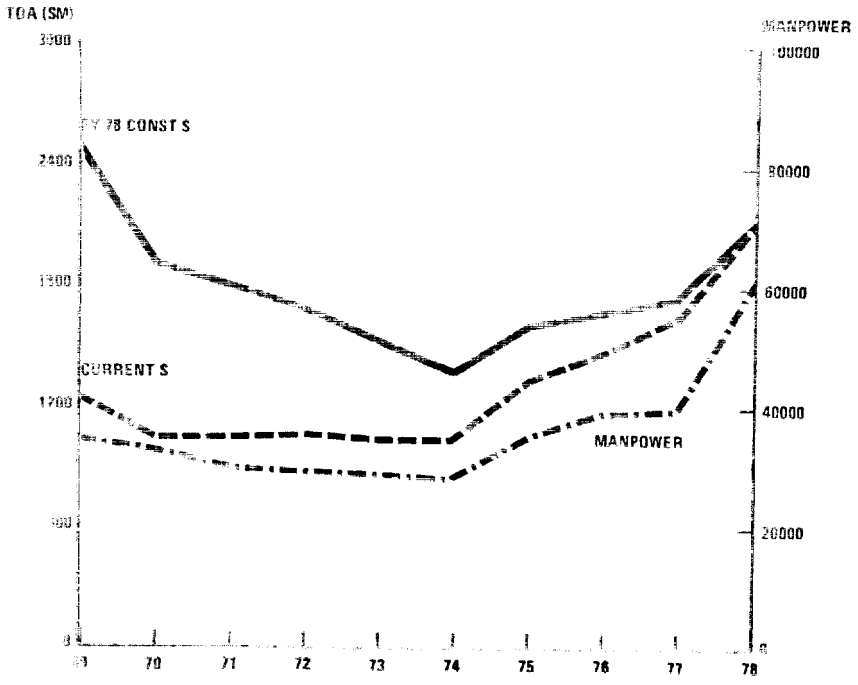


table below illustrates the requested funding for each of the seven functional categories.

TABLE IV-2
FY 978 INTELLIGENCE-RELATED
($ in Billions)

Functions	Total Obligational Authority
o Tactical Warning	.4
o Tactical Support (Battlefield)	.9
o Tactical Support (Ocean)	.5
o Intelligence Staff Support	-*
o Training	.1
o Intelligence Support Systems	.2
o Reserves and National Guard	.1
TOTAL	2.2

* Less than $50 million

The FY 1978 budget request for Intelligence-Related Activities will ensure that adequate tactical intelligence support is provided to military commanders and that the capability exists to provide appropriate portions of this intelligence to national level decision-makers. Specific initiatives to achieve these objectives include the improvement of the Army's tactical SIGINT support capabilities by establishing SIGINT Direct Support elements as integral parts of the combat forces; enhancement of product utility to combat commanders by an integrated approach to systems operations, and development of multisource correlation facilities for improving accuracy and timeliness of intelligence support.

D. Program Effectiveness and Efficiency Measures

Throughout the process of developing and reviewing the FY 1978 Defense intelligence program and budget request, major efforts were directed to actions that would improve the overall efficiency and economy of operations. Priority was also given to establishing specific management and manpower initiatives that offered significant potential for improving the utility and quality of intelligence products and services. For example, one of the management actions taken was the establishment of the Defense Intelligence Contract Review Board. This action will improve the use of contract study resources by eliminating redundant, overlapping, or unnecessary studies.

Other management and manpower actions have been programmed to improve the readiness and efficiency of Defense Intelligence activities and product utility. These include:

-- the automation of cryptanalytic and linguistics functions;

-- the use of management by objectives to strengthen the resource allocation process in support of substantive intelligence needs and priorities;

-- more emphasis on direct analyst input to decision-makers, and more effective communication between the consumer and the analysts and management personnel;

-- continued efforts to reduce CDIP manpower, while emphasizing methods to heighten analysts' accountability; and

-- efforts to strengthen the mutually supportive roles between national and tactical intelligence assets.

In recent years, progress has been made in achieving reductions in intelligence budgets through the redistribution of intelligence resources, and, when warranted, the elimination of activities judged to be cost-ineffective. Personnel reductions have been one of the principal objectives in this effort. Defense Intelligence has shifted from a manpower-intensive

to a technology-intensive environment in order to meet the needs of intelligence consumers most economically. Nonetheless, we must commit more resources to U.S. intelligence efforts in order to provide the capabilities we require to respond to current and future intelligence challenges.

V. COMMAND, CONTROL AND COMMUNICATIONS

A. Introduction

The command, control, and communications (C^3) systems of the Department of Defense are the means through which National Command Authorities (the President and the Secretary of Defense) and, under their direction, the military commanders control and employ the military strength of the nation. These systems are composed of satellites for warning, surveillance, metereology and communications; ground and undersea systems; ground, shipborne and airborne command facilities; worldwide voice, telephone, teletype and automatic data networks; and information processing systems. A significant portion of the C^3 systems supports commanders of land, sea and air forces. These systems permit the reconnaissance and surveillance of hostile forces and the operational direction and employment of tactical forces and their weapons systems.

B. Program Basis

Maintenance of a strong defense posture depends not only on an adequate force structure, but also on an adequate capability to command and control those forces. The U.S. national policy of defense and deterrence requires survivability, flexibility, and responsiveness from U.S. forces. If deterrence fails, we must be able to contain conflict at the lowest possible level commensurate with our objectives and terminate it on terms favorable to the United States. To ensure this capability, command, control and communications systems must be available to:

-- provide the means for effective control and employment of military forces by the National Command Authorities during transition from a normal readiness posture through a crisis situation to the conduct of conventional or nuclear warfare;

-- support national level decision-makers and military commanders with timely and accurate information critical to evaluation of crises and control of escalation;

-- support joint military operations, on a worldwide basis, including operations with allied forces;

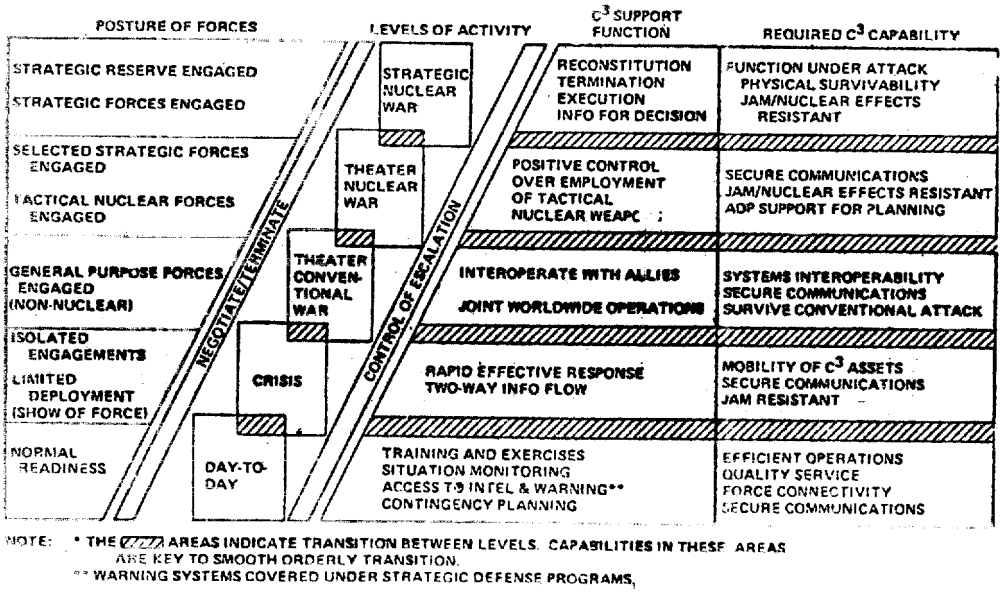
-- provide effective means for command and control even while systems are subjected to physical attack, nuclear effects, electronics jamming, and exploitation attempts.

It is particularly important that C^3 systems and procedures be adaptable to rapidly changing situations ranging from day-to-day activities, through crisis to conventional and nuclear war -- including surprise attack on the United States -- and programs have been structured to

address this need. The interrelationship of force postures, levels of conflict and the command and control function required at each level is illustrated by Chart V-1.

CHART V-1

THE CHANGING ROLE OF C³ IN ESCALATION CONTROL



NOTE: * THE ▨ AREAS INDICATE TRANSITION BETWEEN LEVELS. CAPABILITIES IN THESE AREAS ARE KEY TO SMOOTH ORDERLY TRANSITION.
** WARNING SYSTEMS COVERED UNDER STRATEGIC DEFENSE PROGRAMS.

Programs should support the overall defense posture: successful accomplishment of these programs will directly contribute to the maintenance of an overall military balance and achieve adequate C^3 capabilities for all levels of conflict.

C. C^3 Programs

1. Day-to-Day Posture

During normal day-to-day operations, C^3 systems monitor the worldwide military situation; provide warning information; maintain continuous communications; and support planning and management functions and training and exercises. Information from intelligence and warning systems flows directly to key command centers which monitor the global military picture and maintain information on activities of potentially unfriendly forces. In addition, these systems supply information which alerts U.S. leaders to impending crises and enables U.S. forces to improve their readiness. They also provide the warning necessary for survival from a surprise attack.

We are seeking to improve the efficiency of day-to-day capabilities to support more effectively the peacetime readiness and security of our forces, to secure our communications systems against interception, and to improve the capability to communicate with forces worldwide.

Accordingly, plans are to make several improvements in the Defense Communications System (DCS). The DCS is the backbone of DoD telecommunications. Since some portions of this system are now almost 15 years old, the plan is to modernize where necessary and reduce operating costs. Digital transmission systems will be developed which will make it easier to encrypt messages and facilitate automatic record and data traffic handling. To accomplish this, $33 million in procurement funds is being requested in FY 1978.

To reduce manpower and overall operating costs where feasible, the Department is pursuing a vigorous program to automate and consolidate telecommunications centers. To date, 15 major automated facilities serving major DoD commands are being operated around the world. The FY 1978 budget includes procurement funds of $30 million and operations and maintenance funds of approximately $20 million for further efforts in this area. In addition to the continued operation of existing automated facilities, these funds will be used to develop and install an additional 7-18 automated centers. A program is also being established to consolidate Special Security Communications centers where economically feasible.

To counter the capability to intercept and exploit critical voice communications and to improve the ability to establish secure communications during crises, a global secure voice network, AUTOSEVOCOM II is planned. This system will protect critical voice communications of up to 10,000 subscribers compared with about 1,500 at present. The program entered full-scale development in CY 1976 and $27 million is requested in FY 1978 for continued development.

The Defense Satellite Communication System (DSCS) is a key communications element for worldwide connectivity between the U.S. and overseas areas. This system will be valuable in the transition from a peacetime operation through a crisis environment to the support of force deployments in higher levels of conflict. Such a transition can also be supported through the rapid positioning of mobile contingency terminals.

DSCS supports theater operations in both conventional and nuclear weapon employment. The present space segment consists of one satellite in the Western Pacific, the shared use of a NATO satellite in the Atlantic region, and shared use of the United Kingdom Skynet satellite in the Indian Ocean area. The DSCS coverage, capacity and reliability dictate that the space segment consist of six satellites, four operational and two as inactive in-orbit spares. The present plan is to launch two satellites in April 1977 and two the following October. The four operational satellites will be positioned over the Atlantic, Indian, Eastern Pacific

and Western Pacific Oceans. The two in-orbit spares will be launched in 1978 and positioned in the Eastern and Western hemispheres ready to begin operations immediately if one of the primary satellites should fail or if added capacity is required when a crisis situation arises.

Maintaining a credible system into the 1980s will require, as a minimum, four DSCS II satellites over and above the six to be launched in 1977/78. All ten are currently under procurement. There may be need for two additional DSCS II satellites. This will be determined prior to the FY 1979 budget submission, depending on the success of the satellite launches in 1977/78 and the DSCS III spacecraft development. The DSCS funding request of $160 million for FY 1978 is divided between space procurement ($65 million), and ground and shipboard terminal equipment procurement ($95 million). The space procurement funds will purchase one Titan III-C launch vehicle, provide launch support in FY 1978 and fully fund satellite incentive payments for satellites procured in FY 1974, 1975, and 1977.

The next generation of defense satellites, DSCS III, is also being developed. The objectives of this new program are to provide longer lasting satellites, a tenfold increase in protection from jamming and a threefold increase in communications capacity over DSCS II. For research and development for DSCS III, we are requesting some $55.7 million in FY 1978.

The security of the Fleet Ballistic Missile Force when at sea is taking on increased importance as the overall Soviet threat increases. The United States must continue to ensure the relative invulnerability of the submarine force as it maintains day-to-day readiness at sea. Currently, U.S. submarines must restrict their operational flexibility by putting their antennae at or near the surface to receive communications. When they do so, their antennae could become detectable by Soviet sensors. This could compromise the position of the submarines and subject them to possible attack. Accordingly, there is a continuing effort to develop Seafarer, an extremely low frequency communications system, making possible submarine reception of messages while deep underwater. To continue research and development on Seafarer, $23.7 million is requested in FY 1978.

2. Crisis Management

National Command Authorities (NCA) must be able to respond effectively to crises. This requires immediate, top level awareness of the crisis and maintenance of a secure two-way flow of information between the crisis scene and the NCA. Current systems have certain weaknesses in this regard. There is not sufficient reliability of communications with units around the world, nor is there secure voice conferencing or capability for physically separated commanders to view and exchange data simultaneously. Many current systems are vulnerable to electronic

jamming and intrusion, which can adversely affect operations. In addition, sufficient mobile facilities for deployment in areas of possible crises are lacking.

To improve U.S. crisis management capabilities, selected improvements to the Worldwide Military Command and Control System (WWMCCS) are being pursued. These improvements will provide for a Worldwide Crisis Alerting capability, jam-resistant secure communications, secure voice and graphics conferencing, an airborne C^3 center, mobile ground C^3 facilities, automatic text message handling, and a research and development program which will investigate how we can best utilize ADP in crisis situations. These programs are now getting underway and will require $17.8 million in research and development funds, $2.5 million in procurement, and $2.1 million for operations in FY 1978. These interrelated capabilities are a part of a comprehensive WWMCCS architecture plan which was developed after an intensive two and one-half year examination of the WWMCCS.

3. Theater Conventional War

Widespread deployment of increasingly sophisticated, flexible tactical weapons systems is placing increasing burdens on the command and control systems.

In particular, the availability of an increasingly large volume of surveillance information is expanding the need for high-capacity, secure communications. The potentially high attrition rates possible in a major theater war place significant emphasis on the need for redundant, mobile/transportable C^3 systems. In turn, these C^3 systems must also be oriented to deal with the potential for a sudden attack where rapid, reliable transmission of warning indicators is essential.

While designing C^3 systems which are responsive to specific operational requirements, we must also ensure that these systems can operate with each other in support of joint U.S. combat operations and combined operations with our allies. Interoperability is also essential at the higher command levels and with the WWMCCS. The scope and pace of modern warfare also require combining the operations data and intelligence information within command centers. In order to assure continuity of operations during conventional war, command centers must have the capability to function even when subjected to direct attacks. Such measures as hardening, relocating, and using mobile alternates for theater operations will ensure that this capability is more survivable against the present threat.

Ground communication equipment within the theater is rapidly approaching obsolescence. Some near term replacement is required and underway. One of these is the Joint Tactical Communications (TRI-TAC) program. This major effort in tactical communications will provide the Department with common securable communications equipment for all four Services, will meet the need for inter-theater communications mobility

as well as within the theater, and will provide the interface both between theater and tactical systems and between U.S. and allied systems. TRI-TAC will allow us to support better joint U.S. operations and combined operations with our allies.

The planning for the first phase of the TRI-TAC program is complete and the initial transitional equipment development programs are well underway. The RDT&E funding requested in FY 1978 for equipment development of the TRI-TAC program is $136.7 million. These funds will be allocated among the Services and the National Security Agency (NSA).

An effort aimed at utilizing equipment from the TRI-TAC program is the Integrated Tactical Communications System (INTACS). This system architecture, adopted by the Army in 1976, integrates equipment provided through such programs as TRI-TAC, the Single Channel Ground and Airborne Subsystem (SINCGARS), and the Ground Mobile Forces Tactical Satellite Communications (GMF-TACSATCOM). The integration of these systems along with the Army portion of the Joint Multichannel Trunking and Switching System (JMTSS) will support interoperable communications for the theater ground forces operations even in remote areas.

Naval forces must operate in all tactical environments: air, sea, sub-surface, amphibious and shore. This diversity of operating environments has created the need for a broad range of systems and equipment to provide the required C^3 capability. To provide this capability, the Fleet Satellite Communications system (FLTSATCOM) is being developed. It will permit jam-resistant fleet broadcast and two-way communications between naval aircraft, ships, submarines and land-based facilities. The FLTSATCOM systems will accommodate the expanded communications requirements necessitated by more capable weapon systems and will improve the NCA's capability to exercise command and control of U.S. forces throughout all levels of conflict. The FLTSATCOM spacecraft will carry a separate transponder for jam-resistant communications with AFSATCOM terminals on Air Force bombers, strategic reconnaissance aircraft, ground and airborne command posts, and Army nuclear-capable force elements. Launch of the satellites is planned to start in CY 1977. The Navy's FLTSATCOM terminals have been developed and production deliveries are proceeding onschedule.

A significant number of FLTSATCOM terminals are now in operation using leased channels of the COMSAT General Corporation's MARISAT satellite (Gapfiller), located over the Atlantic, Pacific, and Indian Oceans. However, these satellites, designed for commercial use, do not provide antijam protection or sufficient capacity in power and bandwidth to satisfy military requirements. This operation will continue for at least two and one-half years and will provide a limited capability until the FLTSATCOM satellites become fully operational. The FY 1978 budget request includes a total of $62.3 million for the FLTSATCOM system, and $29.8 million for Gapfiller leasing and other costs.

To improve U.S. conventional war capability in central Europe, we are planning a cell to serve the European Command Headquarters at the SHAPE command center which will be hardened against conventional weapons. The development of this cell was recommended in the WWMCCS architecture. We are proceeding with design and coordination with our allies and are requesting $1.7 million in R&D and $34.3 million for construction efforts in FY 1978 for this program. Other tactical C^3 developments are discussed elsewhere in this Report.

4. Theater Nuclear Conflict

If a crisis should result in a tactical nuclear war, C^3 systems must support the timely release and tactical employment of nuclear weapons. This demands the transmission and rapid processing of information about battlefield events and a common view of these events by both the NCA and military commanders. In the event of a decision to employ tactical nuclear weapons, it must be executed rapidly and precisely. Damage assessment must be timely, and the planning and execution of additional strikes must be supported. If tactical nuclear weapons were to be employed, it would be essential to maintain effective command and control to minimize the potential for unintended escalation.

As in a crisis situation and in a conventional war, we require voice, graphics, and message conferencing capabilities among the National Command Authorities, theater commanders, and battlefield commanders. This conferencing capability must be secure, jam-resistant, and survivable. We have not found an effective means within reasonable resources to harden theater command centers against a nuclear attack. Instead, we are planning to provide a higher degree of survivability by reducing dependence on overseas fixed facilities wherever possible, and relying more heavily on mobile and transportable equipment, to include satellite terminals. As the potential intensity of theater nuclear warfare increases, severe degradation and widespread disruption would probably occur in our theater C^3 systems. Therefore, minimizing dependency on vulnerable, fixed ground-associated communications will enhance our ability to reconstitute essential C^3 capabilities and provide positive control of nuclear weapons.

Improvements in C^3 discussed above in the context of crisis and conventional theater war also have application for controlling tactical nuclear forces. The same programs which provide mobility, interoperability, and secure, jam-resistant communications also help meet tactical nuclear C^3 requirements. In order to provide communication between the National Military Command System (NMCS) and Special Ammunition Storage (SAS) units, we are installing satellite terminals at these units. This will also provide more reliable communications within theater and directly with the U.S., thus assuring positive control of U.S. tactical nuclear forces from the National Command Authorities down to the storage sites. We are requesting $16 million in FY 1978 for procurement of 65 SAS terminals.

5. Strategic Nuclear War

The task at the strategic level is to ensure that systems will provide the ability to control the nuclear Triad and have the same degree of survivability as that of the forces they support.

These systems must have the capability to communicate Presidential orders to the retaliatory forces even after an attack on the C^3 system. In order to do this, an appropriate command center must survive and maintain communication with the President or his successor. The center must also have the capability to receive intelligence information and to communicate with the forces. Today, the survivability of our forces and C^3 systems is sufficient to maintain credible deterrence. By the 1980s, this may no longer be the case. If the Soviets continue to increase their hard target kill capability as expected, they could have the ability to prevent our C^3 systems from supporting a retaliatory strike. To maintain a high level of assurance in our ability to retaliate successfully, improvements in the survivability of the command centers and survivability of the communications links to the forces are needed. C^3 systems will be required after a nuclear exchange if U.S. strategic forces held in reserve are to be employed.

There are several WWMCCS programs which contribute significantly to the survivability of a critical nucleus of C^3 capability during strategic nuclear war. These include AABNCP (E-4), Tacamo, AFSATCOM, and the Minimum Essential Emergency Communications Network (MEECN) which incorporates certain elements from these programs. The WWMCCS Architecture Plan improvements include an R&D program to investigate the possibility of achieving greater command center and communications systems survivability by using deep basing technology. We are requesting $7.8 million in FY 1978 for this program. The technology base from the R&D program is expected to support future program options should the evolving threat require rapid deployment of a survivable deep underground facility and/or communications system.

Related to this requirement for an extremely hard command center is the present need to harden one major command center against a potential short warning attack of our C^3 system by SLBMs launched from close-in SSBNs. Hence we plan to construct a hardened capsule at the Alternate National Military Command Center at Fort Ritchie, Md. This capsule will be designed to withstand a sea-launched missile attack. Survival time of approximately thirty minutes (before ICBM arrival) will permit accomplishing essential early trans-attack functions to include the transfer of control to the National Emergency Airborne Command Post (NEACP) when it becomes necessary. This should permit a smooth transition of command in the critical early stages of a nuclear attack on the United States. The hardened capsule program will require $1 million for R&D, and $3 million in military construction planning and design funds for FY 1978. The eventual total program costs are projected to be $127.8 million by 1982.

Airborne command posts are operated to ensure continuity of command and control of the strategic nuclear forces at high levels of nuclear exchange. The improved airborne command post aircraft, the E-4, is being developed to ensure that we can further employ surviving retaliatory forces. They will replace some of the older EC-135 aircraft of the National Emergency Airborne Command Post (NEACP) and SAC. The initial phase of the E-4 program has been completed and three E-4A aircraft are now supporting the NEACP mission. The present phase includes procurement of one E-4 test-bed aircraft and the development and installation of improved C^3 equipment in this aircraft (E-4B). The results of extensive tests of the E-4B aircraft will be the basis for a decision planned in FY 1979 regarding procurement of two more aircraft and eventual retrofit of the first three aircraft with the improved C^3 equipment. Beginning in July 1977, the operations support function will be consolidated at Offutt AFB, Nebraska, with NEACP and SAC using the same facilities. The $65.8 million requested in FY 1978 for the E-4 program will complete integration of the advanced C^3 capability into the test-bed aircraft and will support the ground and flight testing program. Plans call for six E-4Bs to be fully operational by mid CY 1983.

The objective of the Minimum Essential Emergency Communications Network (MEECN) is to provide the best possible assurance that one-way communications to the strategic nuclear forces can be maintained even in the most severe jamming and nuclear environments. The network is being improved by providing greater protection from jamming for LF/VLF systems, nuclear-hardened communications systems, and satellite communications terminals in airborne command posts and relay aircraft. Total MEECN costs are spread throughout several programs; i.e., AFSATCOM and Tacamo; in addition, there is about $75 million in support of MEECN operations and improvements.

The Tacamo program, which provides survivable communications to the sea-launched ballistic missile force, is being continued. The total inventory of 14 Tacamo aircraft will be operational by FY 1978, but the major modification program to improve the communication range and antijam capabilities of these aircraft will have to be continued through FY 1982. These improvements and the complementary improvements in MEECN will provide greater assurance that orders communicated to the U.S. submarine force will be received.

The Air Force Satellite Communications (AFSATCOM) program provides communications for emergency action messages between strategic commanders and their nuclear and support forces. It also links the airborne command posts of U.S. strategic commanders to the national command centers.

The AFSATCOM utilizes satellites from three separate programs: Satellite Data System (SDS); FLTSATCOM; and satellites placed in orbit for other missions. The AFSATCOM program also includes airborne and ground terminals. A second phase of the program (AFSATCOM II) will provide more survivability against jamming. To support the continued

development and procurement of the AFSATCOM system, the FY 1978 budget contains $32.8 million in R&D funds and $43.6 million for terminal and space segment procurement.

VI. RESEARCH AND DEVELOPMENT

A. RDT&E Goals

The Defense Research, Development, Test and Evaluation (RDT&E) program supports U.S. national security objectives by focusing on two major goals.

-- First, the program supports near-term defense policies and forces by developing high-quality, affordable and test-proven weapon systems which satisfy specific military needs.

-- Second, it provides options for future policies and forces by maintaining a superior technology base consisting of basic and applied research and technology. The technology base is the source of those innovative concepts and alternative solutions to future military problems which will enable us to maintain credible deterrence over the long haul, reduce the possibility of technological surprise, and retain the ability to exploit new opportunities and meet the challenges of a rapidly changing and uncertain future.

B. Program Basis

RDT&E planning, programmatic decisions and management are characterized by the selection of new and improved systems from among many promising technological possibilities. The decision process includes an explicit assessment of several key factors summarized below and discussed in detail in the FY 1978 Statement to the Congress by the Director, Defense Research and Engineering.

1. The Technology Balance

Since World War II, the U.S. has led the world in most areas of technology crucial to military hardware. This lead has helped our nation to maintain key military balances by offsetting quantitative inferiority in many mission areas with systems of relatively high quality. In recent years, however, the U.S. technological lead has been diminishing. This is the result of worldwide technological diffusion; declining real investments by the U.S. in both civil and military R&D; and a serious and continuously growing, long-term Soviet effort.

This Soviet program is manifest in two ways: the technological quality of their military developments is increasing, and their high rates of production of military hardware are being sustained or increased, notwithstanding the increased technological content of that production. For example, from 1970 to 1976, Soviet production of fighter aircraft

increased by 36 percent, while the fraction of that production devoted to swing-wing aircraft grew from 10 percent to more than 60 percent. At the same time, the sophistication of weapons and instrumentation on such aircraft has been increasing significantly. Similar considerations pertain to other developments and products of the Soviet military/industrial complex, across all mission areas. A gross measure of the overall magnitude of these trends is provided by the intelligence community estimate that Soviet annual military investment expenditures have steadily increased in the last decade. From 1972 to 1975, the total increase was on the order of 25 percent.

As a result of this Soviet effort, their military equipment in most areas is being modernized at a faster rate than ours, and the technological advantages held by U.S. forces are diminishing to a point where U.S. ability to offset quantitative inferiority with superior technology will be increasingly challenged. The current trends in the U.S./USSR technology balance cannot be permitted to continue.

Concurrent with their modernization efforts, the Soviets have embarked on a wide range of programs to develop new kinds of military technology -- high-energy lasers, wing-in-ground effect vehicles, and radar satellites are examples. Their closed society prevents us from reliably determining their objectives and forecasting the capabilities they will achieve through such endeavors, which span most, if not all, of the frontier disciplines of science and engineering. However, the level of Soviet effort, the increasing competence of their scientific base, and their apparent commitment to develop weapons which could shift the military balance in their favor, require that we be alert to the possibility of technological surprise and act decisively to prevent it.

U.S. RDT&E plans and programs are based on the conviction that technological competition, already real and urgent, will intensify. Superior technology is a primary source of future military and economic strength. This requires a multi-year investment program which exploits our technological strengths and reverses the current technology balance trends. The FY 1978 RDT&E funding request of $12 billion is designed to continue the real program growth begun in FY 1977 and to develop the long-term momentum which can ensure -- if sustained -- the continuity of U.S. technological superiority into the 21st Century.

2. Mission Requirements for U.S. Military Forces

While the evolving technology balance trends directly influence RDT&E investment strategy for the long term, major programmatic decisions in RDT&E for FY 1978 are focused on correcting current and projected

deficiencies in the capabilities of our forces. The process of selecting programs which will do so involves assessments of trends in the military balance in key mission areas, tactical military requirements, intelligence on foreign technology, the status of current R&D programs, and technology opportunities and needs. The FY 1978 RDT&E programmatic emphasis is discussed in section C of this chapter.

3. Resource Allocation

RDT&E planning and program decisions recognize explicitly that human and material resources are not unlimited, that all technological opportunities cannot be exploited, that selectivity must be exercised throughout the weapons acquisition process, and that considerations of cost and efficiency must be given continued management emphasis. These factors directly affect our RDT&E strategy and programs in several ways:

-- first, since we have obviously not matched the quantity of all deployed Soviet weapons, we emphasize applying our technological strengths to developing and producing those essential systems which provide the greatest fighting capabilities and which can significantly multiply the military effectiveness of U.S. combat forces;

-- second, we continue efforts to reduce the costs of new systems throughout their life cycle by expanding the use of several management techniques discussed in Chapter IX in Section II of this Report, by developing new technologies which offer the promise of less expensive but highly effective military systems, and by placing greater emphasis on competition throughout the R&D process. We believe that competition is a key to encouraging innovation and enhancing the cost-effectiveness of weapons;

-- third, we seek to make better use of technology by requiring that a proposed new system be fully assessed in terms of tactics, alternative and complementary systems, and mission requirements at the earliest stages of the design and development process;

-- finally, we have decided to complete the development and testing of those systems whose near-term deployment to our forces is urgent, while retaining other systems in the early stages of development, at lower funding levels, where a high priority for deployment does not yet exist.

4. Lead Time Requirements

The long lead time encountered in the weapon systems acquisition process introduces major uncertainties into RDT&E decisions. It requires us to plan and to implement R&D programs on the basis of projected trends, since today's decisions will result in weapons which will not be deployed for a number of years. Moreover, even after these weapon

systems enter service, they must be able to perform effectively against threats which will appear during their planned operational life times.

Clearly, there must be the flexibility in both the short and the long term to react to change: flexibility is needed in the short term to make program adjustments and to shift funds where necessary; in the longer term, flexibility is necessary to react to any Soviet technological breakthrough by retaining our technological leadership in areas vital to our future military strength and by developing a range of options which can be exploited rapidly. On the other hand, changes must be accommodated without upsetting the overall funding and program continuity that is essential to a successful and efficient RDT&E effort.

We are attempting to reduce the lead time for new systems in a number of ways:

-- more extensive use of "off-the-shelf" technology for subsystems;

-- reducing changes in the requirements and specifications of new systems as they are being developed; and

-- using simulators and simulations more widely in test and evaluation.

We will also continue to work with the Congress to eliminate the following actions which increase lead time:

-- stop-and-start funding, and

-- stretching out some programs beyond what is reasonably required to reduce risks.

Both of these incur higher costs in addition to reducing weapons acquisition efficiency.

5. R&D Cooperation with Our NATO Allies

NATO members possess the bulk of the free world's technological, industrial and military resources. Unfortunately, duplication and lack of standardization within the alliance continue to reduce the overall effectiveness of NATO's forces and have diluted resources expended on R&D, production and logistics support. The growing threat has created an atmosphere in the alliance conducive to addressing this collective deficiency. The U.S. has taken initiatives which will apply NATO's technological and industrial strength more effectively through several cooperative efforts, including: mutual planning and executing of national R&D programs to reduce duplication; standardizing selected weapon systems; and increasing interoperability in key areas such as

communications, aircraft armaments, ammunition and fuels. These cooperative efforts are an important factor in the U.S. weapons acquisition strategy because they are highly leveraged, yielding large pay-offs in return for relatively few resources. The FY 1978 RDT&E program will continue to build on the momentum already achieved within NATO toward increasing alliance force effectiveness and lessening the burden on the resources of all NATO members.

6. U.S. R&D in the Private Sector

The close interrelationship among U.S. defense, industrial and academic R&D communities has been a major contributor to the technological leadership on which our military security and economic vitality have depended since World War II. Defense must continue to support and draw on the wide base of advanced technology and efficient production processes of our civil sector for the superior military hardware essential to meet future security requirements. RDT&E planning consciously seeks to improve the ties among the components of our national R&D community and to strengthen the competitive forces on which we depend for innovative, efficient, and high-quality military systems. The FY 1978 RDT&E program will continue to emphasize competitive prototyping and independent R&D as important elements of our R&D strategy. In addition, we must increase the participation of industry and universities in technology base programs.

7. Technology Transfer

Although technological diffusion is a fact in today's highly competitive international environment, we must continue to minimize its impact on U.S. technological leadership in areas of importance to our defense. We can do this in two ways.

-- First, we must ensure that investment and other incentives to continued innovation are sufficient to keep our lead in advanced technology despite the losses that result from the transfer of technology.

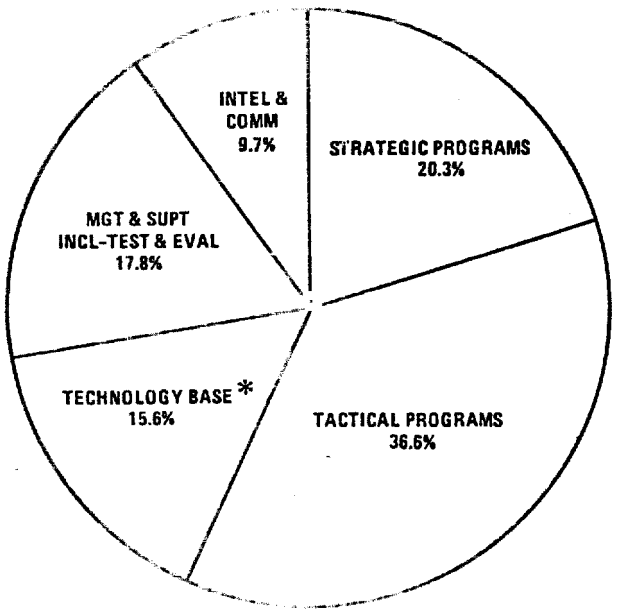
-- Second, we must continue to restrict the transfer of those technologies -- particularly production technologies -- which would enable potential adversaries to close technology gaps in vital defense areas.

C. FY 1978 RDT&E Program Emphasis

The distribution of the FY 1978 RDT&E budget request by mission area is shown in the following chart.

CHART VI-1

RDT&E FY 78 BUDGET
BY MISSION AREA



	(MILLIONS)
TECHNOLOGY BASE	1,879.8
ADV TECHNOLOGY DEV	688.4
STRATEGIC PROGRAMS	2,439.5
TACTICAL PROGRAMS	4,408.1
INTELL & COMM	1,169.8
PROGRAMWIDE MGMT & SUPPORT	1,458.0
TOTAL	12,043.6

* INCLUDES ADV. TECH. DEVELOPMENT

The major programs supported by the allocations in Chart VI-1 include the following:

1. Strategic Programs

We will proceed with RDT&E programs intended to prevent or redress unfavorable asymmetries and to counter any Soviet developments and deployments which appear to be aimed at upsetting the future strategic balance. These programs, discussed in Chapter I, Section II, include:

-- $1.94 billion to maintain the survivability and increase the effectiveness of the Triad of U.S. strategic retaliatory forces: B-1, MX, Trident, cruise missiles and improvements to existing strategic retaliatory systems;

-- $249 million to improve U.S. strategic defensive and warning systems and to hedge against future requirements: Advanced Interception Technology, Joint Surveillance Systems, Defense Support Program, the Mosaic Sensor Project, and Ballistic Missile Defense R&D;

-- $108 million for space defense R&D. Soviet development and testing of a potential antisatellite capability clearly threatens the survivability of our space systems and raises the specter of space

warfare as a new dimension of conflict. We are responding to this Soviet initiative in space by expanding those RDT&E programs which will provide a capability for protecting U.S. satellite systems and for negating Soviet military satellites. These programs include: space surveillance (SPADATS), Ground-Based Electro-Optical Deep Space Surveillance, satellite-borne long-wave infrared sensors, Satellite Systems Survivability.

-- $129.7 million to support the Space Shuttle. By reducing the cost and increasing the flexibility of transporting large payloads to and from space, the Space Shuttle will permit much more effective and efficient military space operations. Defense RDT&E funds are requested to support development of a capability to use the Shuttle, including an Interim Upper Stage which will permit DoD space systems to achieve high altitude orbits, and a shuttle launch and landing capability at Vandenburg AFB, which will permit continuing polar launches.

2. Non-Nuclear Forces Programs

Owing in large part to the emergence of perceived nuclear parity and the increased premium placed on the deterrence of conventional warfare, we are requesting $4.4 billion in RDT&E to improve the readiness of and to modernize U.S. general purpose forces. The main focus of this effort is to provide the basis for a force structure that, in conjunction with our allies, will maintain the balance in central Europe and the maritime balance. Primary emphasis in FY 1978 is being given to removing current deficiencies in U.S. air defense, antiarmor, electronic warfare and area denial capabilities for the land forces; to modernizing U.S. naval forces so that they are fully capable of countering the Soviet sea denial threat; and to developing precision and area weapons and improved electronic warfare capabilities for our tactical air forces.

3. C^3 Capabilities

Major command, control and communications (C^3) RDT&E programs and their rationale are discussed in Chapter V. We are requesting $633.7 million in FY 1978 for RDT&E in C^3 systems.

The real-time integration of the functions of surveillance, target acquisition, and command and control offers the potential for greater force effectiveness leverage in the future. New capabilities such as AWACS and the NAVSTAR Global Positioning System, among others now in R&D, can achieve force effectiveness multiplication, thereby assisting in our attempts to offset Soviet quantitative superiority.

4. The Technology Base

Two years ago a funding policy was instituted aimed at strengthening the technology base by allocating a 10 percent real increase in the

research program and a 5 percent real increase in the exploratory development program each year. This policy, approved by the Congress, will be continued in FY 1978. In the case of the Defense Advanced Research Projects Agency (DARPA), whose role is to forestall major technological surprises, decisions have been made to expand funding to allow aggressive technology development of those programs which could make a significant difference to national security.

The technology base, which includes DARPA, is the source of new technologies and innovations which could lead to major payoffs for our national security in the future. These efforts include:

-- exploring the technical problems associated with the use of high energy lasers in space for satellite defense;

-- investigating greatly improved infrared sensor systems and adaptive optics for surveillance from space;

-- demonstrating low-cost terminally-guided munitions;

-- developing advanced signal processing techniques for submarine detection and localization;

-- developing lower drag concepts for improving the range, speed and endurance of undersea vehicles;

-- flight testing an integral rocket-ramjet engine prototype;

-- exploring the potential of a high mobility/agility armored vehicle with automatic cannon;

-- developing technology options for greatly improved command and control capabilities;

-- improving rotary wing technology;

-- pursuing several technology initiatives to reduce the costs of manpower and future systems, including ceramic turbines, alternate aircraft fuels, advanced composite structural materials, superalloy tooling and molding techniques, ring laser gyroscopes, non-destructive inspection techniques, improved nuclear propulsion reactor cores, mini-remotely piloted vehicles, and new training and evaluation methods.

These programs are examples of investment in new, higher payoff technology that will retain our technological initiative and can provide lower cost options for retaining U.S. deterrent capabilities in a highly uncertain future. We are requesting $2.6 billion in FY 1978 for pursuit of these technology base efforts.

VII. LOGISTICS

A. Objectives

Just as we must maintain an adequate force balance, we must provide the resources necessary for adequate force readiness and sustainability through adequate funding and good logistics management. For several years, work has proceeded to improve the readiness of U.S. forces and to increase force sustainability. The budget for this year continues to do those things. Specifically, the objectives are to:

-- reduce the backlog of ship overhauls;

-- improve aircraft availability;

-- reduce backlogs of reparable spares;

-- increase stocks of Army equipment;

-- increase stocks of war reserve munitions and secondary items;

-- reduce maintenance backlogs for facilities and housing;

-- meet DoD requirements for environmental and occupational safety programs; and

-- continue improvements in efficiency.

B. Overview of Defense Logistics

In FY 1978, about $37 billion of the $123 billion total DoD budget will pay for a set of functions, activities, services, and certain procurements which we call "logistics." In general, logistics is concerned with force readiness and sustainability. Funds for logistics can be found in almost every budget title and include resources for:

-- procurement of modification kits and spare and repair parts to support peacetime operation, and war reserve stocks of spare and repair parts for weapon systems and equipment, munitions (including tactical missiles) and other ordnance, and personnel support items such as uniforms, flak jackets, tentage, and medical supplies;

-- maintenance, overhaul, and modification of weapons systems, equipment, and other materiel at all levels of DoD -- from the central depots down to the combat units;

-- operation of the supply, warehousing, distribution, and transportation systems at all levels;

-- industrial preparedness activities such as modernization and expansion of government-owned munitions and equipment production facilities, operation, retention, and layaway of existing facilities, and industrial mobilization planning;

-- logistics headquarters and logistics command functions; and

-- miscellaneous custodial and other essential support functions such as storage of moth-balled equipment, and operation of laundries and printing plants.

Other activities related to and in support of the logistics function include defense housing and military construction, defense base structure planning and realignment, and real property maintenance activities (RPMA) including utilities expense.

Finally, certain Defense programs which derive from government-wide policies are also part of the logistic function. They include: safety and occupational health programs within the DoD; and programs designed to reduce the adverse impact which some DoD facilities and operations have on the environment.

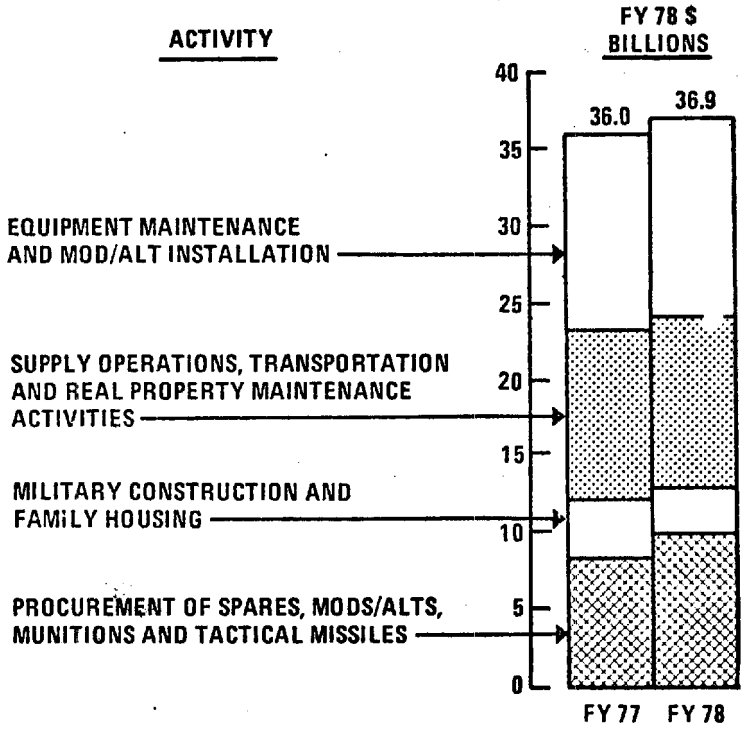
C. Logistics Funding

The following chart displays estimated logistics funding for FY 1977 and FY 1978 both in constant FY 1978 dollars and as a percentage of the total DoD budget. There is a real program increase of about 2 1/2 percent in total logistics funding from FY 1977 to FY 1978. The largest part of this growth is in procurement for spare parts, modification and alteration materiel and munitions.

In the past no federal department was allowed to program for inflation in the O&M accounts. Further, since operating budgets were prepared using a pricing base that was one to two years old by the beginning of the budget year, much of the Defense program found itself underpriced by an amount equal to almost two years' worth of inflation. Rapid escalation of prices, particularly in FY 1974 and FY 1975, forced Department consumers to reduce substantially the level of real purchases below the programmed levels in order to stay within approved funding profiles, thereby reducing materiel readiness. This problem has been recognized both by the Executive and Legislative branches. This year, the President's proposed budget does include some allowance for inflation in the O&M accounts. In addition, we are again applying the "rate stabilization" concept to revolving fund (stock fund and industrial fund) price structures. This allows us to maintain a constant fund-to-consumer price structure during the budget execution year.

CHART VII-1

ESTIMATED DEFENSE LOGISTICS FUNDING, FY 77 - 78



D. Improvements in Logistics Efficiency

A major Departmental goal is to increase the efficiency of the logistics system in order to lower resource requirements. Over the past several years, we have initiated a number of significant management and systems improvements which are beginning to contribute to increased logistics efficiency. For example, the Military Departments and the Defense Logistics Agency have implemented standard wholesale inventory and safety level policies for the purpose of relating supply performance to levels of funding. An improved stockage policy for new component items has been developed. It permits optimum materiel stockage by considering the cost of stockage versus the cost of procurement. Duplication of inventory management responsibilities throughout DoD is being eliminated by assigning 3.3 million consumable items and 400,000 nonconsumable items to single inventory managers, a process which is almost finished. Management systems standardization efforts are providing standard systems, central data banks, and a common language for communicating logistics data requirements. These efforts significantly reduce costly duplication in systems development and open the way for more extensive and effective use of common logistics support.

While many efficiencies are continually being obtained via management actions, others require initial funding, which appears as a one-time logistics cost. Included in this latter category are such diverse activities as the procurement of flight simulators which permit a reduction in flying hours; investments in manufacturing technology which reduce the cost of weapon and equipment procurement; and implementation of reliability-centered maintenance programs for aircraft and other systems to reduce maintenance costs and improve weapon system availability.

We estimate that all of our on-going efforts to improve the efficiency of DoD logistics result in approximately $2 billion per year in cost savings or avoidances.

E. Readiness

"Readiness" refers to the capability to respond adequately to diverse situations and to sustain that response as long as necessary. The "readiness" of Defense combat forces depends on a myriad of diverse and often interrelated factors.

Personnel readiness encompasses the overall availability and proficiency of our fighting men. Generally, it includes:

-- the right numbers of people with the proper mixes of grades, skills, and experience levels; and

-- the adequacy and currency of several different types of training.

Materiel readiness is equally important to combat readiness. It includes the capability, availability and condition of our forces' fighting equipment and the inventories of munitions, spare parts, and other items necessary for those forces to deploy, engage in combat, and sustain that combat as long as required. Materiel readiness can be viewed from two perspectives -- peacetime operational, and wartime sustaining capability. The former determines our ability to engage in combat initially and depends upon:

-- the availability of weapon systems, combat equipment and other necessary hardware to fully equip the existing units, in the hands of the troops for peacetime training, and prepositioned in the right locations to permit rapid deployment;

-- the actual (as opposed to design) capability of those weapon systems when operable, and their availability when needed;

-- the ability to design and implement those hardware changes which are necessary to improve this capability and reliability; and

-- the levels of war reserve inventories of munitions, spare and

repair parts, and other combat-essential supplies which are immediately available to the combat forces.

Our capability to sustain wartime operations depends upon:

-- other central inventories and our ability to produce and distribute any additional quantities of military materiel needed to sustain the forces in combat; and

-- the network of facilities, capital plant, and equipment required to support these functions.

F. Proposed Improvements in Materiel Readiness

1. Logistics and Readiness

The status of these components of materiel readiness is determined principally by the adequacy of the funding for the logistics program. Among our more important materiel readiness objectives are:

-- to acquire as an interim goal a balanced war reserve inventory of modern munitions, equipment, spare parts, and supplies which includes the capability to sustain U.S. forces in at least 90 days of intense combat in Europe;

-- to eliminate as quickly as possible the backlog of unfunded maintenance which impacts directly on aircraft readiness; and

-- to eliminate the ship overhaul backlog and real property maintenance backlog over a five-year period.

In FY 1978, we are continuing progress toward these objectives.

2. Ship Materiel Readiness

In the past two Defense Reports, we have emphasized that the materiel condition of Navy ships was poor and deteriorating. A number of factors have combined to produce this unacceptable situation; these include both personnel turbulence and maintenance and materiel funding shortfalls. The reliability of systems in the fleet has been lower than anticipated, and the funding for spare and repair parts needed to support the maintenance effort has been inadequate.

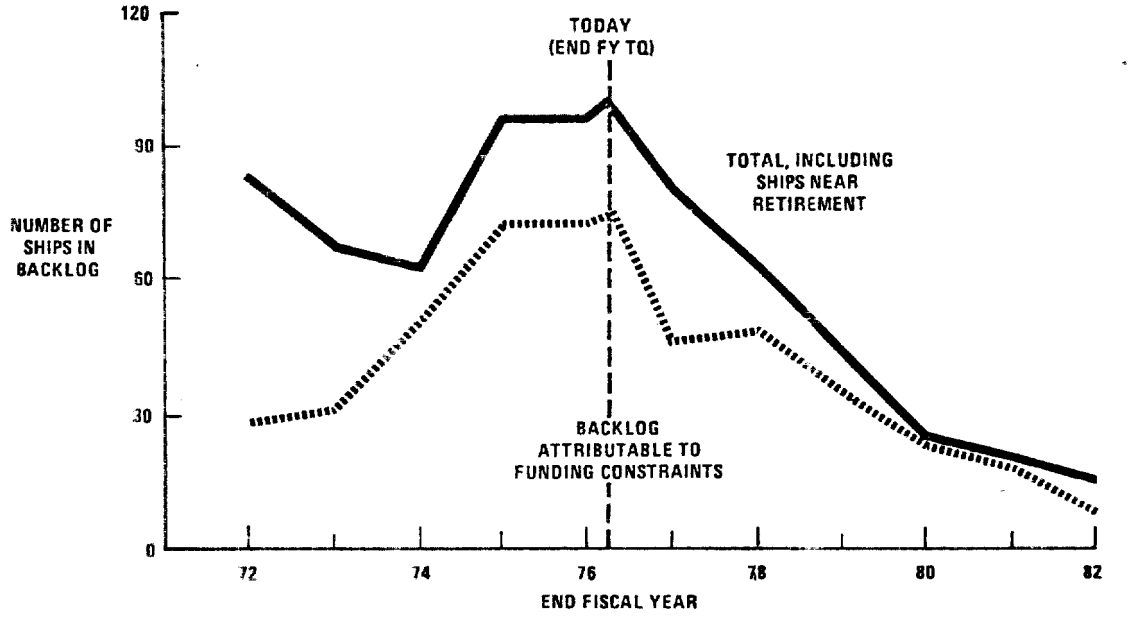
After two years of concentrated effort, we have halted the deterioration in the readiness of our surface fleet. We are now ready to begin

to improve the materiel condition of our ships. In order to accomplish this task, the Department is taking three steps.

First, we are budgeting for inflation in those accounts which pay for ship maintenance. Since the overhauls will be realistically priced, we should not have to defer scheduled overhauls because of underfunding due to inflation. Owing to tight near-term fiscal constraints, we project no reduction in the ship overhaul backlog in FY 1978. However, in FY 1979-82, we expect to reduce the backlog of ship overhauls attributable to funding constraints from today's backlog of more than 70 to a more manageable level.

CHART VII-2

BACKLOG OF SHIPS OVERDUE FOR OVERHAUL



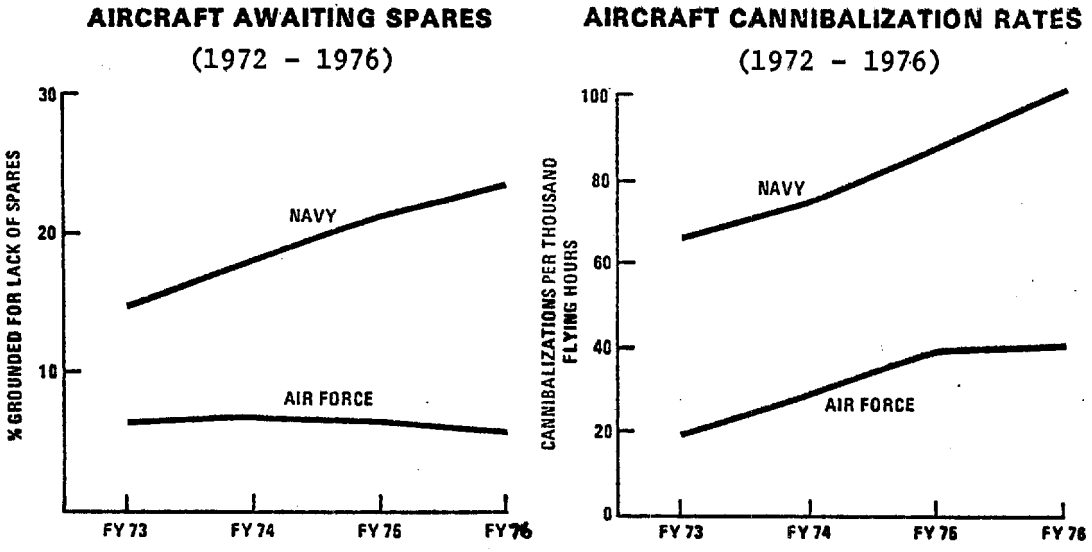
Second, the Navy will continue to develop integrated, engineered maintenance strategies, such as those used for its Poseidon submarines, for all of its ships. The implementation of these strategies will contribute to the improved reliability and operational safety of the ships and, in the long run, will lengthen the time between overhauls. As an example, the implementation of this strategy for Poseidon submarines has increased the time between overhauls from 5 years to as long as 9 years. However, it should be emphasized that these efforts will not result in immediate, significant reductions in total ship overhaul costs. It will take at least five or six years of concerted effort before the materiel condition of the entire fleet attains a sustainable satisfactory level.

Third, this budget will provide enough funds to ensure that adequate repair materials are available on board ships and at intermediate maintenance activities so that the maintenance capabilities at those levels will not be artificially constrained by the lack of parts. This will increase materiel readiness and make the maintenance effort more efficient by reducing the backlog of unaccomplished maintenance actions, eliminating the use of on-board repair parts without replacement, reducing the number of "make-do" repairs made necessary by the unavailability of the correct parts, improving the utilization of the maintenance manpower at these levels, and allowing better maintenance planning.

3. Aircraft Materiel Readiness

As shown in Chart VII-3, the portion of Navy and Marine Corps tactical aircraft grounded because of a lack of spare parts has been increasing. However, this "Not Operationally Ready, Supply" (NORS) rate has been stable in the Air Force, although the number of NORS incidents in that Service has been steadily increasing, reflecting a deterioration in spares availability. (NORS incidents represent the number of times an aircraft part is not available locally to meet an operational need.) The Services employ different definitions in computing NORS statistics, which overstate the inter-Service differences and make more direct comparisons inappropriate. There are also many occasions in each of the Services where, although an aircraft is flyable, some of its systems may be inoperative because of missing parts.

CHART VII-3



The Services' operating units routinely utilize extraordinary measures to support peacetime operations and thus minimize the impact of inadequate stocks of serviceable spares and repair parts. Actions which are inherently undesirable, such as cannibalizations and withdrawals from war reserve stocks, become necessary in order to meet spares demands. Thus, reported NORS rates and incidents, which are already too high, may in fact be artificially deflated. Chart VII-3 shows that cannibalization rates in the Navy and Air Force have been steadily increasing.

Last year's Defense Report explained the problem created for aircraft maintenance programs by unbudgeted inflation and constrained funding for component repair programs. This problem persists. The ultimate impact is that there are fewer serviceable spares on the shelves to support the forces in peacetime or in the event of war.

Although procurement and depot repair of aviation spares annually consumes about $2.4 billion of the Defense budget, the cost of such spares support is relatively small when compared to the acquisition value of the hardware it is required to support. Over the past several years the funding for procurement and repair of spares to support peacetime operating requirements has proved to be inadequate because of higher than anticipated inflation and increasing production lead times.

The increased funding in the FY 1977 Defense budget should permit us to halt a number of these unfavorable trends in aviation supply support. It allocates sufficient O&M funds for consumable repair parts at the operating units, provides adequate funds to procure new spare components, and provides enough funds to repair failed components at the depots to stop the growth in the component repair backlog. The FY 1978 O&M budget will avert further growth. Elimination of the component repair backlog is proposed in the budget plan for 1978 to 1982.

A major aviation readiness and safety problem is caused by poor reliability of equipment and component items. For example, the maintenance difficulties of the TF-41 and TF-30 jet engines for the A-7 and F-14 aircraft, respectively, are causing a serious drain on maintenance resources. These and other reliability problems compound, and to some degree are responsible for, the supply-related materiel readiness deficiencies which degrade aircraft availability. We have placed increased emphasis on reliability and maintainability modifications and alterations.

As discussed in previous Defense Reports, we are aggressively expanding the application of the commercial airlines' reliability-centered maintenance concepts throughout the Defense aviation community. Its application in the Navy has significantly increased the time between airframe and engine overhauls, for example from 36 to 60 months for the P-3B airframe. Thus the depots can devote more of their capabilities to

activities such as aircraft modifications, service life extensions, and spare component repair.

4. Land Forces Equipment Shortages

Last year it was reported that the major readiness problem for the Army was its lack of enough modern weapons and equipment to satisfy all requirements. A combination of factors have contributed to this problem. Among them are:

-- withdrawal of equipment from U.S. Army inventories to satisfy urgent, unprogrammed security assistance demands, such as support of Israel during and after the 1973 Middle East War;

-- fiscal constraints over several years that have constrained the level of procurement in the manpower-intensive Army; and

-- long and lengthening procurement lead times together with production capacity limitations for several key weapon systems, particularly tanks.

As described earlier in this Report, we are substantially increasing the procurement of weapons and equipment. However, recovery will be slow, because of the long production lead times for major items of equipment, the high cost of modern equipment, and increased inventory objectives for most items of equipment. Consequently, for some time yet, we will be faced with balancing equipment shortages among our combat units and other requirements in such a way that we maintain adequate immediate combat readiness while providing enough equipment to lower priority units to allow needed training.

First priority for equipment distribution goes to active Army units and affiliated Reserve Component units which are scheduled for early deployment in the event of hostilities. Second priority is accorded the reconstitution of the European POMCUS (Prepositioning of Materiel Configured to Unit Sets) division sets of equipment that we preposition overseas to permit rapid deployment in time of crisis. POMCUS reconstitution should be completed, except for a few critical items, by the end of FY 1978. Currently, early Army deployments to Europe in a NATO war would be constrained by the POMCUS deficiencies.

In distributing modern weapons and equipment, the other Reserve Component units and the build-up of war reserve stocks prepositioned in Europe and in CONUS depots are given lower priority. The European prepositioned war reserve requirements will not be fully satisfied until the end of FY 1980. Until that time the sustainability of all Army units, which would be engaged in the defense of NATO, will be limited.

5. War Reserve Stocks of Munitions and Combat Consumables

As stated earlier, readiness is dependent not only upon the current status of major combat units, but also upon the inventory levels of major equipment, munitions and other items required to support units in combat. Since we consume most materiel much more rapidly in war than during peacetime, war reserve stocks represent the additional stocks, over and above normal peacetime operating stocks, which must be on-hand at the time a conflict begins to support the higher wartime activity levels until the resupply pipeline can sustain combat rates. Shortages of war reserve stocks of major equipment items have been discussed in other sections of this Report. In addition, war reserve stocks of secondary items and modern munitions are below inventory objective levels and require additional funding.

a. Secondary Items

Secondary items include hardware-related spare and repair parts, and personnel support items, but are distinguished from major hardware end items. With the much higher activity levels experienced in time of war, secondary item consumption and pipeline requirements would expand dramatically. We do not attempt to prestock in peacetime all those items which would be required in time of war; we buy only those combat-essential items without which mission performance would be severely degraded in time of war.

Currently, we have a shortfall of over $3 billion in our secondary item war reserves inventory against a $7 billion total requirement. The FY 1978 budget proposes funding to reduce this deficiency. If the five year program for secondary items is fully funded, it would provide at least 90 days combat support for our forces in NATO. Secondary item shortages can severely degrade our combat capability, even though we might have an impressive array of major equipment.

b. Munitions

War reserve stocks of older conventional munitions are generally at acceptable levels, but we will not have sufficient quantities of the modern much more effective munitions, such as precision-guided weapons, for several years.

The inventory objective -- measured in procurement cost -- for air munitions has increased substantially because of changes in force structure, the introduction of new, more effective, and more expensive weapons, and an increase in the number of aircraft capable of delivering precision-guided weapons. The FY 1978 budget request will improve our inventory position from 40 percent to 47 percent of the $16 billion objective. By the end of FY 1982 we should have 85 percent of such requirements on hand, with the shortages concentrated largely in the guided air-to-surface munitions where production constraints exist.

The ground munitions procurement program reflects the results of the Army's development of better analytic means to project ammunition requirements and the introduction of new generations of artillery shells and other modern items. The program will significantly increase our inventory of modern munitions in the next five years while maintaining modest quantities of older items as a hedge against unforeseen problems during the transition period. We plan to achieve an inventory position at the end of the program period which will be composed of over 65 percent modern items compared to 4 percent at end FY 1977 and 11 percent at end FY 1978.

G. Installations and Facilities

Other functions, activities and programs such as Defense housing and military construction are also crucial to DoD operations and morale and will consume $2.9 billion of the Defense budget in FY 1978.

1. Defense Construction Program

The Department of Defense, like any very large business or industry, requires a capital plant investment of considerable size and complexity. The military operations of the Army, Navy, Marines, and Air Force use over 750 major and 5,300 minor installations with an original acquisition value of $42 billion in plant facilities and real estate.

President Ford has called for further examination of the current DoD basing structure to identify essential required domestic Defense installations. A partial moratorium on domestic construction in FY 1978 has been imposed until this evaluation is completed. The Military Construction Program, which in recent years has averaged about $2.6 billion annually, will be about $1.5 billion in FY 1978 with compensating increases scheduled for FY 1979 and beyond, as appropriate.

2. Real Property Maintenance Activities (RPMA)

Real property maintenance activities encompass utilities expense, minor construction, maintenance and repair of real property, and installation support services. Of the over $4 billion required annually for RPMA, repair and maintenance of real property requires about $2 billion. This is the minimum required for adequate upkeep of Defense's current property and plant.

Proper facilities maintenance is essential for supporting the long-term combat readiness of our military forces. Deteriorating runways allow foreign objects to damage costly jet engines. Poorly maintained utility systems result in equipment failures which delay work or result in rental of expensive portable equipment. Lack of adequate real property maintenance leads to plant deterioration, requiring construction of new facilities sooner than should be otherwise required. We are requesting

$2.2 billion in FY 1978 to satisfy our current facility maintenance and repair requirements.

3. Defense Family Housing

It is a Defense Department objective to assure that all members of the Armed Services have suitable housing in which to shelter their families. To accomplish this most efficiently and effectively, we rely on private communities near military installations as the primary source for housing. Only when community housing does not exist, is substandard, or is priced above the financial capability of the military member is family housing constructed.

Most family housing requirements not satisfied by local communities have been met, resulting in a current inventory of over 388,000 government family housing units. Nonetheless, there are still some housing problems in selected communities located in federally impacted areas, such as Fort Polk, Louisiana; Fort Stewart, Georgia; and the Trident site at Bangor, Washington. The Department has long sought legislation which would permit and encourage HUD to ensure loans in these communities. However, a Senate/House Conference rejected the proposed legislation. As a result, Defense must either continue building in these areas, obtain housing through long-term leases, establish a rental guaranty program, or establish a mortgage insurance program. Since the other alternatives cannot be implemented without special legislation, a modest construction program continues to be necessary.

The recent energy crisis has focused attention on energy conservation investment within the housing improvement program. At the same time, the sharp and continuing rise in utility, fuel, and other operating costs, where we were previously not permitted to budget for anticipated inflation, has consumed funds needed for maintenance, causing the deferred housing maintenance backlog to increase significantly.

Previous internal DoD program projections anticipated an unacceptable growth in deferred family housing maintenance. Therefore, we have reduced funding previously programmed for family housing new construction and improvements and applied the bulk of the savings to family housing operation and maintenance. Reallocation of $134 million from construction to maintenance in FY 1978 will lessen the serious family housing maintenance problems to some degree.

4. Environmental Quality Program

In order to meet the many requirements of the National Environmental Policy Act, the Clean Air Act, and the Federal Water Pollution Control Act, the environmental quality programs of the Department of Defense will be continued. Comprehensive pollution abatement and environmental enhancement programs are planned to comply with federal, state and local environmental standards.

5. Accident Prevention and Occupational Health Program

The health and safety of personnel is of primary importance. An important element of Defense logistics, therefore, is the preservation of materiel and manpower resources through accident prevention. Valuable human resources are lost and combat readiness and industrial support capability are degraded by accidents. The Department of Defense has embarked on a safety and occupational health program designed to reduce both the direct and indirect losses of Defense resources resulting from mishaps. Elements of the program include adoption of uniform DoD safety standards; strengthened inspection and hazard reporting procedures; systematic, timely correction of long-standing safety and occupational health deficiencies; improved control of hazardous/toxic materials; enriched safety training; and increased emphasis on system safety engineering throughout the life cycle of weapon systems.

VIII. MANPOWER

A. Introduction

The men and women of our military forces and those who support those forces include uniformed members of the active and reserve components, and civilian employees of the Department. Personnel employed by Defense contractors are also a Defense manpower source. Each contributes to our total military capability.

Manpower consumes a large but diminishing share of the Defense budget. However, if we are to maintain necessary military force levels, we must be willing to pay a fair price for that benefit. Military and civilian pay scales and benefits must be competitive with the private sector if we are to attract and retain the numbers and types of people needed.

The Department has taken many steps to restrain unnecessary growth in manpower costs over the past two years. These initiatives have included reductions in headquarters and overhead activities, cuts in supporting forces, and greater reliance on the Reserve Components for both combat and essential support functions. The Department has also made certain necessary adjustments to military pay, allowances, and benefits of both active and retired military personnel. These adjustments have been seen by many of the active and retired members as an erosion of their benefits. We have sought to maintain a total military benefit program which recognizes such unique features of military life as the dislocations, forced family separations, limitation of some freedoms, retirement at a much younger age than in the private sector, and acceptance of the personal risks inherent in the job. We must continue to try to provide a sound compensation environment for U.S. military personnel.

B. Program Basis

In formulating the FY 1978 Defense manpower program, the manpower requirements of the total force, the cost of maintaining an all-volunteer force, and the need for improved management in the manpower area have been intensively reviewed. Table VIII-1 displays military and civilian personnel trends for the five-year period FY 1974-78:

TABLE VIII-1

Defense Manpower
End-FY Strengths (000)

	Actual				Auth 1/	PLAN	
	FY 74	FY 75	FY 76	FY TQ	FY 77	FY 77	FY 78
Active Military	2,161	2,127	2,081	2,083	2,093	2,088	2,090
Reserve Components	925	896	823	826	894	856	881
Civilian (Direct and Indirect Hire)	1,109	1,078	1,047	1,042	1,031	1,036 2/	1,031

1/ Public Law 94-361, FY 1977 Defense Appropriation Authorization Act. Reserve Components end strength is consistent with authorized average strength.

2/ Exceeds Congressional authorization by 5,100 spaces in accordance with Section 501(d), PL 94-361.

U.S. defense needs are best met by long term stability in the military force structure. The active military manpower plan for FY 1978 reflects that stability. The requested level of active duty military personnel for FY 1978 is approximately the same as authorized by Congress for the end of FY 1977. Military strengths were about 19,000 below plan at the end of the Transition Quarter, because of greater than anticipated losses and a shortfall in recruiting by the Army, Navy and Marine Corps. The Department believes that the modest strength increases which have been programmed can be attained by the end of FY 1978.

The Department experienced a shortfall of 50,000 in the strength of the Selected Reserve at the end of the Transition Quarter. We plan to improve recruiting capabilities of the Reserve Components which will allow a modest growth in paid drill strength and eventual restoration of strength to the levels required for our total force planning. With respect to the Naval Reserve, we are programming an end strength of 93,600 for FY 1978.

Defense civilian employment has been reduced significantly over this five-year period, primarily through major reductions in the level of support. The Department will, for the first time, exercise the statutory authority to increase civilian employment by one half of one percent in excess of the level authorized by Congress for FY 1977. This is necessary primarily to provide civilian employees for bases anticipated to be closed in FY 1977, but which, for various reasons, must remain open. The request for FY 1978 is for the same number of civilians authorized by Congress for FY 1977.

Meeting our workload with this work force will require increased productivity of the labor force, contracting additional functions to the civilian sector, and minor realignment of the Department's base structure.

C. Manpower Cost Trends

DoD manpower costs have risen from $24 billion in the last pre-Vietnam year, FY 1964, to $62 billion in the President's budget for FY 1978. As a percentage of total Defense outlays, manpower costs have gone from 47 percent in FY 1964 to a high of 62 percent in FY 1973 and down to 56 percent in the proposed FY 1978 budget. The change in manpower costs over this period has had three distinct phases:

1. Vietnam Buildup. Strength increased during the late 1960s because of the Vietnam war. The Defense budget rose sharply and manpower costs rose with the budget.

2. Post-Vietnam Growth. In the early 1970s, there was an effort to restrain total Defense spending, while instituting an all-volunteer force. In spite of significant post-Vietnam reductions in both military and civilian strength, manpower costs climbed during this period. The key factors causing this climb included:

-- large increases in the number of military personnel retiring (a result of the World War II and Korean expansions);

-- the military retired pay system which increased pay in excess of rises in the Consumer Price Index (CPI). This has since been corrected;

-- comparability legislation in 1962 tying Civil Service pay levels to private sector pay levels;

-- legislation in 1967 tying military pay raises to general schedule pay raises;

-- FY 1972 increases in the pay of junior enlisted personnel (67 percent) and junior officers (9 percent) to make the pay for these grades more equitable and competitive; and

-- increases in average civilian wage board pay above the average pay for that skill in the private sector.

Reductions were necessary in order to keep the Defense budget within the prescribed ceilings.

3. Readjustment. During the last three years, there has been only modest growth in manpower costs, largely due to inflation; and manpower costs have represented a decreasing percentage of total Defense outlays each year. The number of people employed has remained essentially level.

The changes in the percentage result from efforts to curb unnecessary manpower expenditures and from the requirement to replenish war reserves and modernize weapons systems. Table VIII-2 shows the trends in manpower costs and the associated strengths for the key years of FY 1964 and FY 1968 and for each year since 1974.

TABLE VIII-2

Defense Manpower Costs 1/
(Outlays, $ Billion)

	FY 64	FY 68	FY 74	FY 75	FY 76	FY 77	FY 78
Defense Outlays	50.8	78.0	78.4	86.0	88.5	98.3	110.1
Manpower Outlays							
Military Personnel Appropriations	12.3	19.0	22.2	23.2	23.3	24.3	25.3
Def. Family Housing Appropriation 2/	.5	.4	.7	.9	1.0	1.2	1.3
Military Retired Pay Appropriation 3/	1.2	2.1	5.1	6.2	7.3	8.2	9.1
Reserve and Guard Personnel Approps.	.7	.9	1.6	1.7	1.8	1.9	2.1
Civilian Costs 4/	7.6	10.6	14.2	15.4	16.5	17.5	18.6
Subtotal 5/	22.3	33.0	43.8	47.5	49.8	53.1	56.4
Personnel Support Costs 6/	1.7	2.8	3.2	3.5	3.8	3.9	4.1
Total Manpower Costs	24.0	35.8	46.9	51.0	53.6	57.1	60.4
Percent of Defense Outlays	47%	46%	60%	59%	61%	58%	55%
End Strengths (000s) Regular Employees							
Active Military	2,687	3,547	2,161	2,127	2,081	2,088	2,090
Civilians 4/							
Direct Hire	1,035	1,274	1,014	989	960	948	944
Indirect Hire	140	119	95	89	87	88	87
Total	1,176	1,393	1,109	1,078	1,047	1,036	1,031
TOTAL	3,863	4,940	3,270	3,205	3,128	3,124	3,121
Others							
Reserve Paid Drill 7/	953	922	925	896	823	856	881
Retired	435	651	1,012	1,073	1,132	1,199	1,244

Note: Detail may not add to totals due to rounding.

1/ Data excludes civil functions.
2/ Excludes civilian pay portion of this appropriation which is included under civilian costs.
3/ For those already retired. Future retirement costs for current members are not reflected in the budget.
4/ The cost of civilians is budgeted under the functional appropriations -- e.g., operations and maintenance, family housing, RDT&E. Often indirect hire civilians are excluded from manpower cost and strength data.
5/ Referred to last year as "payroll costs."
6/ Preliminary data for FY 77 and FY 78. Excludes the direct costs of military and civilian personnel, since they are accounted for separately. Includes costs of individual training, medical support, recruiting and examining, overseas dependent education, half of base operating support, and a miscellaneous category.
7/ Includes about 78,500 National Guard and Reserve technicians who are also counted as civilian employees.

Defense manpower strengths have stabilized. In recent years, through considerable effort, we have been able to meet these manpower requirements. But we have no long lines of young people waiting to enlist. This leads us to conclude: (1) the military compensation is about right in the present market, and (2) that future cost trends should continue to reflect growth to adjust for inflation.

D. Military Personnel Issues

1. Personnel Management

If we are to attract and retain quality people within a force, U.S. military personnel management efforts must be carefully balanced between maintaining the attractiveness of Service life and minimizing costs.

a. Enlisted Personnel

The primary goal in the enlisted force has been to attract and retain quality manpower. To reduce attrition and cut training and replacement costs, we have established high quality standards for first term military personnel. However, we recognize that the special demands of military service require a balance of youth and experience. We further recognize that the retirement costs for a career member of the active force exceed his recruitment and training costs. Therefore, only highly qualified personnel are allowed to reenlist upon the expiration of their initial enlistment. This restriction on the total number who enter the career force maintains a proper ratio of career/first term service members and ensures an attractive career progression in terms of assignments and promotion opportunity.

The management of the present force along the lines of these plans should provide benefits to the taxpayer while not degrading the enlisted force. For example, the top-six enlisted grade structure will have been reduced from 66.1 percent of the enlisted force in 1972 to 60.1 percent by the end of FY 1977. We are now approaching the objective grade structures contained in the long-range plans and do not foresee further reductions in the top enlisted grades. Reduction below these levels would undermine plans in enlisted management and upset the balance which must be struck between all personnel variables in order to achieve both economies and attractive career patterns. More important, further reductions in the grade structure could hurt retention of highly skilled people who are needed in our technologically complex armed forces.

b. Officer Personnel

In 1973 the Department proposed the most comprehensive legislation since 1947 to update the laws that govern the management of the officer corps within the armed forces. The Defense Officer Personnel Management Act (DOPMA) will eliminate many inconsistencies in existing law which

create inequities in the way officers are managed by the respective Services and between male and female officers. It will also enable us to conduct the long-range planning which is so essential to providing our officers with careers that are competitive with civilian opportunities and which help to attract and retain the high quality officer force needed for our national security. DOPMA was passed by the House of Representatives in the 94th Congress, but not taken up by the Senate. The Department will resubmit the DOPMA proposal for consideration by the 95th Congress.

During the period FY 1973-1978, the size of the officer force will have decreased approximately 14 percent, as compared to a total active duty military strength reduction of about 7 percent. The Department of Defense has taken several steps to reduce the senior officer grade structure. The latest programmed effort, to be achieved by end FY 1978, will further reduce generals/admirals and colonels/Navy captains 4 percent and 3 percent, respectively, from the FY 1976 end strengths in these grades. A summary of the Department's successful record in reducing both the size of the officer corps as well as the percentage of senior officers over the five-year period FY 1973 - FY 1978 is shown below:

	Actual End FY73	Planned End FY78	% Reduction FY 1973-1978
Generals/Admirals*	1,291	1,141	12%
Colonels/Navy Captains*	16,200	13,900	14%
Total Officers*	321,000	275,000	14%
Total Active Military Manpower	2,252,810	2,090,000	7%

* Includes physicians, dentists and officers paid from Reserve Components and Civil Functions appropriations.

The following chart depicts trends in active military strengths from FY 1960 to FY 1979. The chart also shows trends in the number of enlisted personnel per officer and the number of general and flag officers per 10,000 active military personnel. Supporting figures are displayed in Appendix These trends show that:

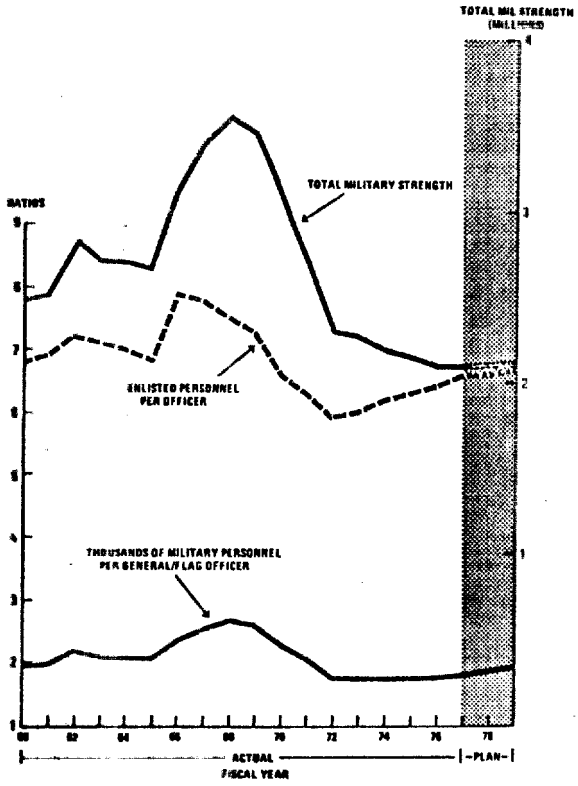
-- active military manpower strengths declined rapidly following the Vietnam war and have now stabilized;

-- following the Vietnam war, the number of enlisted personnel dropped more quickly than officers, reducing the ratio of enlisted personnel per officer. However, management actions since 1972 have enabled the Department to return to about the same ratio which existed in 1960; and

-- the ratio of general and flag officers to total military personnel declined slightly as the force expanded for Vietnam and has now returned to a level slightly higher than in 1960.

CHART VIII-1

TRENDS IN MILITARY STRENGTH



c. Personnel Turbulence

We continue to seek ways to minimize personnel turbulence and its attendant costs in resources and readiness. Some of the major policy changes that have been made for active forces are:

-- The minimum initial term of service for all active duty military personnel has been designated as 36 months.

-- A limitation on the number of changes of station has been established for personnel serving initial terms of service, thereby stabilizing assignments in CONUS and overseas.

-- Policy has been established providing for a limited "home-basing" concept wherein individuals assigned to unaccompanied short tours overseas are returned to their previous U.S. installations whenever feasible. For those personnel departing on short tours who will not return to their "home-base", the Services provide advanced assignments to the next long-tour station, thus making it possible to avoid two family moves.

-- Goals have been established to reduce the attrition of trained enlisted members during their first three years of service.

2. Military Compensation

The Department believes that certain changes are required in the military compensation system in FY 1978. These changes will provide for more effective use of military compensation funds.

In an effort to redress imbalances in the military quarters allowance system, the President reallocated 25 percent of the October 1976 military basic pay raise into basic allowance for quarters (BAQ) and authorized a partial BAQ payment to certain bachelor personnel living in government quarters. These steps bring the BAQ closer to parity with housing costs and reduce inequities in housing charges for bachelors. Estimated budget savings are about $74 million in FY 1977 and $89 million in FY 1978. It is tentatively planned to reallocate 25 percent of the 1978 basic pay increase for all military personnel to BAQ. Estimated FY 1978 budget savings from these initiatives are $100 million.

Service academy cadets and midshipmen currently receive one-half the pay of officers in pay grade O-1. The Department is again proposing legislation which would provide lower compensation for cadets and midshipmen. The proposed level of pay will also apply to Senior ROTC cadets and midshipmen while attending field training or practice cruises. This action will save about $4.5 million in FY 1978.

The Department of Defense will also seek authorization for increased rates of sea pay for cumulative service on sea duty during a career. Such a sea pay can be established at no increase in cost to the Department of Defense.

3. Other Issues

a. Commissary Stores

We propose to continue the appropriated fund support to the commissary stores. Some cost reductions will be achieved as a result of certain management actions, e.g., centralizing the management of Army and Air Force commissary stores. In addition, we are examining other techniques that

have the potential for achieving further reductions, such as the increased use of part-time and intermittent employees and the combining of administrative functions for two or more stores in one geographic area. As a result of management improvements we expect to reduce the cost of this support while simultaneously maintaining a reasonable savings for commissary patrons.

b. Health Care

The Defense health care system is composed of the military direct care system and CHAMPUS. It maintains a healthy peacetime active military force and provides a nucleus around which we could expand rapidly to achieve a wartime medical force. Furthermore, it provides an economical health care benefit to dependents and retired members.

The required size of the peacetime military direct health care system is currently under review. Present policy is to base the direct care system on the needs of the active force unless:

-- adequate health care facilities for dependents and other beneficiaries are not available locally;

-- the marginal cost of treating dependents and other beneficiaries in-house is less than local CHAMPUS costs;

-- a valid teaching or training requirement exists.

Since full mobilization requirements call for a force much larger than that now on active duty, the Department plans to rely heavily on the Reserve Components and the civilian sector to meet wartime health care requirements.

4. Military Retirement System

The Department of Defense will again propose a revision to the non-disability retirement system to correct existing management inefficiencies and to ensure the equitable treatment of retiring military personnel. The Retirement Modernization Act (RMA) proposal has the following major features:

-- an increased retired pay for retirement at 30 years of service and reduced pay for retirement earlier than 30 years;

-- the use of the high one year averaging rather than terminal basic pay;

-- vesting of a pro rata share of retirement benefits for voluntary and involuntary separation before retirement eligibility at 20 years of service; and

-- the integration of military retired pay and social security benefits, which reduces the retired pay by one-half the social security payment attributable to military service.

The proposal includes save-pay provisions for members already at retirement eligibility and transition features to apportion application of the new system to current members relative to pre-enactment service. The proposal also provides readjustment pay for those with more than five years of service who may be involuntarily separated before retirement eligibility. The RMA is anticipated to generate increased costs for about the first seven years after passage. After that point, the savings will increase substantially and by the year 2000 will amount to over $1.8 billion annually.

The Department of Defense will resubmit legislation to provide cost-of-living adjustments for Retired Servicemen's Family Protection Plan annuitants and reinstate Survivor Benefit Plan (SBP) annuities to eligible widows who were receiving Dependents Indemnity Compensation payments but lost them when they remarried after age 60. These provisions were previously considered by the 94th Congress, but were not enacted. We will also propose to reduce the social security offset, now deducted from the SBP annuity after age 62, from 100% to 50%.

We believe that going to a full accrual system for both military and civilian retirement funding is the best course of action for the Department and the federal government. Under this system we would budget annually for the future retirement cost of the military people now on active duty, and for the full annual liability for the future retirement cost of current civil service employees. The current payment for military people now retired would be shifted out of the national defense function in the federal budget. We plan to hold appropriate consultations with Congress this year and to incorporate the reform in the FY 1979 program.

5. Recruiting Activities

Military recruiting activities are critical to the all-volunteer force. Excluding those who cannot meet Service qualification standards and those who will enter college and complete their baccalaureate degree, the active and reserve forces must now recruit two out of every five male high school graduates in each graduating class between their 18th and 21st birthdays. Service needs in future years may decline as a result of programs to reduce first-term attrition, but a corresponding decline in the youth population will offset any gain. Therefore, the proportion required to volunteer for military service will remain high.

In FY 1978, the active and reserve forces project a need for recruiting about 700,000 men and women to attain their authorized strength levels. The active force requirement of 454,000 is somewhat lower than that for FY 1977 and should be attainable. The FY 1978 reserve forces requirement is about the same as FY 1977. Attainment of this level will depend upon the success of the recruiting initiatives. A summary of active and reserve forces recruiting programs is shown in the following table.

TABLE VIII-3
Military Manpower Procurement Programs
(000s)

	FY 76 Access.	FY TQ Access.	FY 77 Plan	FY 78 Plan
Total Active and Reserve	634	182	729	702
Active	422	126	480	454
Non-Prior Service	398	120	422	404
Male	367	111	391	370
Female	31	9	31	34
Prior Service	24	7	58	50
Reserve	212	56	249	248
Non-Prior Service	74	23	101	114
Prior Service	138	33	148	134

All the Services continue to emphasize recruitment of quality enlistees as measured in terms of high school graduates. We have found that high school graduates are far more likely to complete their first term of service successfully than those who do not finish their formal high school education. The number of active force male accessions with a high school diploma has risen from 67% in 1975 to 68% in 1976, and to 70% in the transition quarter. However, if unemployment among young people is reduced, we anticipate that the difficulty of recruiting high school graduates could increase. The Department therefore plans to examine alternative approaches to achieve high quality accession goals.

Initiatives to achieve FY 1978 active military accession objectives include increases in the number of production recruiters and in advertising funds, use of additional recruiter assistants, and continuation of enlistment and reenlistment bonuses. In order to improve the reserve forces, particularly the Army components, actions are underway to strengthen and expand training capability, and to increase advertising funds.

E. Military Compensation Reform

Just as we must provide the Armed Forces with the right equipment and the proper training to use it, we must also be concerned with their morale and well-being. Toward this end, the Department has been working on the Third Quadrennial Review of Military Compensation, attempting to design a modern military compensation system to meet Defense manpower and personnel management needs, and be explainable and fair to military personnel. It is essential that the men and women of the Armed Forces receive full equity for their service. The study is an important one for the future of our military personnel. Some preliminary indications for final decision are worth noting here.

First, military compensation should be both set and adjusted on the basis of total compensation. One of the most difficult aspects of the military compensation system is that it is composed of a number of pieces that have never been truly integrated and displayed in one place. The consolidation of pay and major benefits into a single "package" is called total compensation.

Total compensation for this purpose includes basic pay; housing and subsistence allowances, plus the tax advantage that the military member gets from the fact that the two allowances are not taxable; leave, holidays, medical absence, life insurance, health care; and retirement and survivor benefits. These elements embrace over 95 percent of military, as well as Civil Service, compensation costs and their identification would enable the military man, as well as others, to have a far more accurate picture of actual compensation.

Two of these elements require explanation. The Department is endorsing a move toward a true accrual system for both military and civilian retirement for the entire Federal Government. The accrued retirement costs for military personnel currently on active duty would be shown in the Department of Defense budget. This accrual amount would be that included in the total compensation calculation.

The Review would include in total compensation the portion of health care that the Department estimates is provided as a benefit for the individual, excluding the portion that is being provided to control more closely and maintain at a higher level the health of personnel than do other occupations. For example, normally a 20 or 22 year old would not buy such complete, comprehensive health care coverage were he employed in the private sector, whereas the military system does provide that to him. Therefore, it would be unfair to tell the E-4 or O-1, the very junior member, that he has as part of his total compensation a substantial amount of health care which he would not be interested in purchasing were it to be his choice.

Second, the Department of Defense is providing DoD education media with new compensation information. The Services plan individualized compensation statements. We are planning a pilot program, to cover about 20,000 military personnel, to develop an individualized pamphlet which would explain to the military person and his/her dependents the compensation package they receive. This pilot program is being run by a nationally known firm that has developed similar information booklets for a wide variety of private firms and governmental agencies, such as AT&T, American Airlines, and the State of California. We believe that a complete explanation of total compensation will significantly alleviate misconceptions among military personnel regarding compensation.

Third, the QRMC is recommending that total compensation be set on a comparability basis. This is the same principle that the Federal Pay Panel on Civilian Compensation recommended be retained for the civilian federal

system. It recommends that the military pay standard be based on comparability with the pay of the General Schedule Civil Service. Therefore, job standards and job analysis should be used to develop work level linkage points between grades in the military and Civil Service. This will enable pay lines to be established that will directly link military total compensation to Civil Service total compensation.

There are several means of developing this linkage and the QRMC report indicates one proposed set of linkage points, although others could be established. At the same time, the QRMC suggests that the system of bonuses and special pay be retained and used when a differential is needed to meet requirements for more critical skills. For example, a bonus may still be required to encourage the required number of people to become infantrymen.

Fourth, the QRMC recommends continuation of the pay and allowances system as the form of compensation which will best meet the needs of a military organization. However, it recommends a modernized pay and allowances system in which basic pay would be set in relation to civilian salaries and the quarters and subsistence allowances would be retained as tax free reimbursements based on the actual housing and food expenses borne by military personnel.

As a final feature, the compensation system recommended in the QRMC explicitly recognizes that military life is different from civilian life. There are substantial differences based on the demands placed upon military members and their families. These include the obvious one of a member being called upon to engage in combat, as well as those that are common to both wartime and peacetime, such as long and irregular work and duty hours, dislocation, forced family separations, minimum control over one's career, with retirement required at a younger age than civilian norms, and existence within a system of relatively tight discipline under federal law. We have concluded that these aspects of military service, which have often been labeled as the "military factor," require two forms of recognition:

(1) The general military factor involves the prior commitment to long and irregular hours, family separation, substantial loss of personal freedom, a forced cut-off in career after only 20 to 30 years in the job, for most members, and a potential requirement to engage in combat. This general military factor applies to essentially all members. It is most appropriately recognized through the use of the traditional military institutional benefits, such as the portion of health care system not included in the total compensation comparison, the commissary system, and the exchange system. The military morale, welfare, and recreation system may also be included. One way to recognize this factor would be to protect these elements from changes between Quadrennial Reviews of Military Compensation. In other words, both the Administration and Congress might agree not to modify these benefits unless a recommendation is made by or the issues arise out of discussion of a Quadrennial Review of Military Compensation.

(2) The individual military factor comes about when an individual is assigned to situations characterized by a particular risk or hazard to which all members are not liable. Examples would be assignments to demolition duty or submarine duty. This factor should be recognized through the current system of special and incentive pay.

The tentative program outlined above could, if implemented, result in a more efficient as well as a more equitable and stable military compensation system.

F. Unionization

Unions and the labor movement have played an historic role in the economic and social development of our nation. Within the Department of Defense, there are labor agreements covering hundreds of thousands of civilian personnel. These people contribute to the operation of the Department. It does not follow, however, that the processes of negotiation and bargaining can or should be applied to U.S. military forces.

Members of the U.S. armed forces are prepared to fight -- and if necessary to die -- to preserve our liberty and security. The key to effective operation of the uniformed services depends on proper functioning of the chain of command. Control, discipline, and prompt obedience to the lawful orders of one's superiors are the time-honored elements of our American military tradition. From the earliest Articles of War -- adopted as we fought for our freedom in the Revolution -- to the present Uniform Code of Military Justice (UCMJ) -- U.S. military laws and regulations have proscribed conduct that would undermine the chain of command.

Laws governing both the civilian and military communities make it clear that strikes, slowdowns, or similar job actions have no place in the armed forces. The UCMJ, for example, prohibits desertion, mutiny, or misbehavior before the enemy. A soldier may be punished for disrespect toward a superior officer or NCO. Likewise, failure to obey a lawful order or regulation may be punished under the Code. Similar laws apply criminal sanctions to certain actions by civilians which undermine military discipline or the chain of command.

The Department recognizes the importance of providing channels for Service members to present problems to the chain of command. Such procedures currently include the Inspector General System and complaints under Article 138 of the UCMJ. The development by individual commanders of open door policies, enlisted and junior officers councils, and similar programs attests to the flexibility of the chain of command in providing appropriate means for communicating complaints. There is no place in the chain of command, however, for organizations that would rely on bargaining and negotiation.

C. Civilian Personnel Issues

Despite substantial reductions in the level of civilian employment in the Department of Defense over the past few years, the annual cost of civilian personnel salaries continues to increase. This reflects the statutory increases in salary levels and underlines the continuing need for improved management of civilian employees.

The Department is supporting legislation proposed by the Civil Service Commission to reform the federal wage system for blue collar employees. We believe that federal employees should be paid wages comparable with those in the nonfederal sector. Current law, however, requires in some instances that the Government pay wages greater than those paid for comparable jobs in private industry. This is not a sound use of scarce defense dollars.

Three elements of the proposed legislation are of special interest to the Department. The first would allow matching of the average federal wage to the average local prevailing wage, instead of matching the local wage to step 2 of the federal system, then paying most federal blue collar workers, who are at step 4 or step 5, up to 12 percent more. Second, the legislation would repeal the Monroney Amendment, which requires the Government in certain cases to pay wage board employees much more than their local counterparts, because wage rates in some communities are based upon the higher rates "imported" from a large urban area. The third would propose elimination of the uniform night shift differential pay rate (which requires the Government to pay more than competitive wages) in favor of locally established differentials. Passage of the requested legislation will reduce the Defense spending by $200 million in FY 1978 and about $700 million annually by FY 1982. Failure of Congress to pass the proposed legislation would result in the wasteful expenditure of scarce funds urgently needed for defense and will contribute to inflation by driving up labor costs throughout the economy.

In 1976 changes were made in the mechanics of determining comparability pay raises for general schedule employees. These changes, which were recommended by the President's Panel on Federal Compensation, will save over $2 billion per year in the Defense military and civilian payroll, starting in FY 1977. Further economies in the general schedule are planned through better position management of the civilian workforce. While total DoD civilian employment has decreased by nearly 350,000 from FY 1968 to FY 1976, the number of high grade positions (GS-13 and above) has not declined commensurately. To correct this situation, we have established strict controls on the number of high grade positions authorized within the Department. These controls will reduce the number of high grade civilians by 2,100 from FY 1976 to FY 1978.

The Department is again proposing legislation to end dual compensation for federal employees who are also reservists. Our proposal would adopt the practice of paving the military salary plus the differential

between the military and civilian salaries, if the civilian salary is higher. This follows the most common practice of civilian firms, which is to make up the loss in salary occasioned by the reserve duty of their employees.

The Department of Defense is concerned over the negative impact that pay compression and retired pay inversion are having on civilian executives. Executives at GS-15 (step 7), GS-16, GS-17, GS-18, and PL 313 levels receive the same salaries because section 5308 of Title V of the U.S. Code limits salary rates to that of Executive Level V. This phenomenon also causes a retired pay inversion in which the pay of retirees increases according to changes in the Consumer Price Index while the pay of active civilian executives remains unchanged. This inhibits good personnel management and causes early retirement of some executives at the time of their greatest productivity.

H. Equal Opportunity Program

The Department of Defense Equal Opportunity Program is currently focused on the development of management tools to identify, assess, and eliminate policies and practices that can accommodate institutional, or systemic, discrimination. In support of this goal, the Department has strengthened both military and civilian equal opportunity programs. This effort embraces all DoD programs and activities, requires review and approval of Military Department plans by the Office of the Secretary of Defense, and requires an annual report by the military departments and Defense Agencies regarding their progress toward achieving the goals.

A substantial increase in the numbers of both minority and female officers and enlisted personnel has occurred in each of the military departments.

-- During FY 1976 and the Transition Quarter, the percentage of black officers increased for all Services, with blacks now representing 3.4 percent of all officers in the Department.

-- The number of black officers holding flag rank increased from 17 to 21, and the number of those holding the rank of colonel/Navy captain increased from 237 to 277.

-- The Navy gained its first black vice admiral.

-- A woman was appointed Assistant Secretary of the Air Force; this was the first time a woman held this position in a military service.

-- For the first time a black officer was named President of a General Officer Promotion Board.

-- The first woman Navy line officer was selected for flag rank.

-- Despite an overall reduction of 1,700 in the number of enlisted personnel holding E9-E8 ratings, the number of blacks holding these ranks increased from 4,600 to 5,000.

-- During this period, the number of women in the active forces increased, reaching 5.2 percent of the total force by the end of the Transition Quarter.

-- The number of ROTC scholarships awarded to women increased by 94 percent, as women began to compete equally with men for two and four year scholarships.

-- Another significant step was the admission of women to the Service academies; this will provide for a major increase in the procurement of regular women non-combatant line officers for the military services.

Another equal opportunity initiative impacting on military personnel has been the change in the Administrative Discharge Directive which provides minority representation on boards considering the case of a minority member. In addition, the Department has initiated a comprehensive review to improve the scope and direction of its pioneering Race Relations Education Program.

c. Reserve Components

The Department continues to recognize the essential contribution of the Reserve Components to the total force posture of the United States. With active force levels at their lowest point since before the Korean War, the Department must take positive steps to improve the capabilities of the Reserve Components. Major actions underway or completed include:

-- Improvement of the readiness of Reserve Component units. Since many reserve units must deploy early, their readiness condition must be approximately equal to that of their active counterparts. To ensure this early deployment capability, the Army has assigned some Reserve Component units a higher priority for equipment fill than similar active units. Additionally, Reserve Component readiness for deployment is tested during Reforger exercises.

-- The Army is examining ways to associate Reserve Components units in peacetime with their wartime chain of command. This would improve training, readiness, and wartime operational planning for Reserve Components units.

-- The Army is cautiously pursuing a variable manning concept for its Reserve and National Guard units. This concept assumes that their manning should be at the minimum levels necessary to ensure accomplishment

of the units' peacetime and wartime missions. Within a given paid-drill strength, this may allow for increased manning in units which deploy earlier and decreased manning for later-deploying units.

-- The Individual Ready Reserve (IRR) provides trained manpower for deployment in the first several months of full mobilization. The Department has taken steps to improve the peacetime management of the IRR and to identify the manpower required for full mobilization, given the projected level of wartime attrition. The Army has initiated a system of preassignment of selected IRR members to certain Selected Reserve units to enhance early availability. Additionally, the Department is addressing ways to solve a projected critical shortfall in IRR strength in the outyears.

-- The Department is conducting a study of the Navy's Selected Reserve. This study will identify new missions for the Naval Reserve, recommend changes in force structure, and develop an appropriate mix of active and reserve manpower structure within the Navy's total force. The estimated date of completion of the study is 1 February 1977.

-- The Department's Total Force Study, completed in June 1975, directed the Navy to test the concept of maintaining one reserve air wing at an operational readiness level sufficient to allow it to deploy on a carrier within 14 days. One reserve air wing has been involved in a test and preliminary results are favorable.

-- The Marine Corps has identified units and personnel it will need first for sustained combat. These aviation, artillery, tank, antitank, missile, and supporting units will receive additional joint training with regular units and special logistic priority to ensure rapid availability. Readiness goals have been established for a capability for combat in one week for flying squadrons and within 30 days for designated ground units."

-- The Air Force is extending the integration of active and reserve forces by placing jet tanker aircraft in the reserves, and by providing first-line tactical fighters and tactical airlift to the reserves. It is also testing the augmentation of active fighter units by individual reservists.

-- The Department of Defense is conducting a study of the reserve compensation system. This will provide a comprehensive review of the current compensation system for reservists and an evaluation of its effectiveness in meeting reserve manpower requirements. Direct compensation, deferred compensation, and other benefits are being examined and the estimated completion date is 30 September 1977.

IX. MANAGEMENT

A. Introduction

Our efforts in the management area this year have been directed toward improving the efficiency and effectiveness of the operations of the Department as well as upgrading our capabilities to coordinate and control its activities. The main efforts in the past year have taken the form of initiatives in the areas of planning, organization, execution, and coordination and control.

B. Planning

1. Management By Objectives (MBO) and Presidential Initiatives

The MBO program has been utilized to focus the sustained attention of management on specific opportunities for improving the efficiency and effectiveness of Defense efforts. The program this past year listed among its successes the standardization of numerous management systems throughout the Office of the Secretary of Defense, the reduction of budgeted travel expenditures by some 19%, and the establishment of a systematic program of internal audits explicitly designed to identify opportunities for resource savings.

The list of management objectives has been reduced this year, as many previous objectives were completed. Included within this year's objectives are several items required by the Presidential Management Initiatives program, such as the "Reduction of the Burden of Federal Reporting and Regulations."

2. Planning Process

During the past year, the Department has been engaged in a two-level review of its planning processes. One level of the review has concentrated on the DoD planning system in general, while the other has focused on the Planning, Programming, and Budgeting System (PPBS). The objective of each review is to improve the structure of the overall decision-making process within the entire department.

The Planning System review has concentrated on four areas: mobilization and deployment plans and tests of these plans; the connection between and the assumptions used in PPBS and operational planning; the overall planning cycle and ways to simplify, improve and shorten it; and actions needed to meet the requirements of the Congressional Budget Act. The review has already identified and implemented a number of initiatives in the first area. For example, this year's mobilization and deployment study was placed in the larger context of U.S. conventional reinforcements for NATO. The remaining three areas of the Planning System study and the entire PPBS process are still under active review.

C. Organization

1. DoD Reorganization

The Department has instituted several changes in its structure, designed to improve the ability of its top executives to control its activities and to improve the efficiency of its operations. Several areas merit specific comment.

First, the position of the Second Deputy Secretary of Defense was filled temporarily to assure top level responsibility for coordinating and overseeing the intelligence activities of the department during a period of major change. The changes have included the establishment of the position of the Inspector General for Intelligence and transfer of control of the Defense Intelligence Agency (DIA) to the Office of the Secretary of Defense (OSD).

Second, consolidations were made in the Office of the Secretary of Defense (OSD) and the Organization of the Joint Chiefs of Staff (OJCS). These consolidations have realigned functions in both organizations, eliminating unwarranted duplication in related functional areas, and should make it easier for top management to fix responsibilities for certain specific activities within these organizations.

Within OSD, six specific consolidations were effected:

-- The Office of Safety, formerly within OASD (M&RA), and the Office of Environmental Quality, formerly within OASD (H&E), were consolidated and placed under OASD (I&L).

-- The Logistics Division and the Manpower Resources Division of OASD (PA&E) were absorbed within OASD (I&L) and OASD (M&RA) respectively.

-- The Assistant Secretary of Defense (Program Analysis and Evaluation) was re-designated the Director, Planning and Evaluation and placed in a staff capacity to the Secretary of Defense.

-- The Weapon Systems Evaluation Group has been disestablished.

-- The functions of the Office of Information of the Armed Forces have been transferred from OASD (M&RA) to OASD (Public Affairs).

-- Eighty-four billets were transferred from OASD (Comptroller) to the Defense Internal Audit Service.

As a result of these reorganization actions and reduced hiring of new personnel, the most far reaching in a period of years, the staff size of OSD has been reduced to about 2,000 individuals for the first time in many years. Since 1969 OSD has been reduced in size by approximately 30 percent.

Within the OJCS, three significant changes were made:

-- J-1 (Personnel) was merged into J-5 (Plans and Policy);

-- J-6 (Communications and Electronics) was merged into J-3 (Operations);

-- the region-oriented offices in J-3 and J-5 were consolidated under J-5.

These three changes have allowed a reduction in the size of the OJCS by 15 percent within the past year and a 37 percent reduction from the peak manpower levels of the Vietnam era (1969).

2. Education

The Department of Defense Committee on Excellence in Education continues in operation. During the past year the Committee's efforts were focused in two areas.

-- It made initial evaluations of the post baccalaureate education programs of the Services and the intermediate level staff colleges operated by the Department of Defense.

-- It monitored the progress of the Service academies and the senior Service colleges in implementing the changes recommended by the committee in the previous year.

In regard to post baccalaureate education, the committee has taken three steps.

-- It has developed a Department of Defense policy which places this type of education in the context of career development and establishes a relationship to the other defense educational programs.

-- The committee has standardized the management and cost accounting systems of each of the Services in this area.

-- It coordinated the activities of the two degree-granting institutions (Naval Post-Graduate School and the Air Force Institute of Technology) operated within the Department of Defense.

In examining the programs of the five Staff colleges operating

within the Department, the committee has recommended certain changes to ensure that these colleges meet the needs of the armed services for high quality officers at the O-4 and O-5 levels with a sound basic understanding of command doctrine and staff operational procedures. These changes are currently being implemented by the intermediate level colleges.

In monitoring the progress of Service academies and senior Service colleges, the committee has been pleased to note that these institutions have made substantial progress toward implementing the changes previously mandated. These institutions have now developed uniform methodologies for determining manning costs, total program costs, and costs per graduate. They have upgraded the quality of their faculties and student bodies and have introduced curricula balanced between core and mission specific areas. Finally, the consolidation of the National War College and the Industrial College of the Armed Forces into the National Defense University has been completed.

3. Standardization of Management

Standardization of management systems continues to receive emphasis. At the beginning of FY 1976, the program consisted of thirty-nine candidate projects. During the year, five projects were completed and twelve projects were deleted or incorporated into other programs. The major completed projects involved standardized procedures for handling inter-service financial transactions, better enlisted personnel management, and a standardized suggestion program.

Twenty-two projects still remain active in the program. They involve areas such as the issuance of standardized policy for retail inventory stockage and depot maintenance support programming and the development of standard DoD systems in areas such as civilian payroll operations, management of commissary stores, and health care delivery.

4. Personnel Policies and Standards of Conduct

Many significant procedural changes have been made within DoD to enforce more effectively the prohibitions against the acceptance of gratuities by DoD personnel from Defense contractors. These procedures and prohibitions have been and are currently being publicized to all DoD personnel. Most violations in this area arise from activities which occurred prior to my April 1976 statement on the subject. However, all violations, regardless of when they occurred, are processed vigorously.

Regarding conflict of interest matters, I have tightened the procedures concerning financial interest statements to assure that all appropriate DoD personnel file statements and that those statements are appropriately reviewed. Most senior level OSD personnel have had their financial interests reviewed by the Office of the General Counsel. Furthermore, all financial interest statements are being reviewed by the individual's

supervisor, and each individual is being required to file a financial interest statement, and at the minimum, to disqualify himself from any official duties involving any Defense contractor with whom he has a financial interest.

In regard to employment both before and after working for DoD, periodic notices are now given to all appropriate present and former DoD personnel reminding them of their statutory obligation to report to this Department certain prior or present employment with a Defense contractor.

Finally, a proposed revision of the Standards of Conduct Directive, which embodies the most comprehensive changes since 1967, was published in the Federal Register on December 8, 1976. Emphasis is on better enforcement through more rigorous procedures and information dissemination, including:

-- a more comprehensive and precise financial interest statement;

-- review by supervisors of the financial interest statements submitted by their subordinates to determine whether the subordinates' duties involve matters likely to create a conflict of interest between those duties and their private financial interests; and

-- thorough briefing on Standards of Conduct provisions for all DoD personnel; acknowledgement of the provisions prior to being hired.

D. Execution

In executing weapon acquisition decisions, the Department is cognizant of its responsibility to utilize efficiently its limited financial resources. The Department makes extensive use of several instruments to achieve this objective, such as the Decision Coordinating Paper (DCP) the Defense Systems Acquisition Review Council (DSARC), the Cost Analysis Improvement Group (CAIG), as well as Production Readiness Reviews, Design to Cost, and Life Cycle Costing programs. Each has proved to be an effective management tool. Furthermore, DoD has made numerous additional decisions this past year regarding the improvement of the overall process of efficiently acquiring and maintaining weapons systems and managing the total defense effort. The following section examines the specific endeavors.

1. AAG Report Implementation

In April 1975, an Acquisition Advisory Group was appointed; it was composed of industry executives and former DoD officials. The group's purpose was to make recommendations on acquisition policies, the Secretary of Defense's control of the DSARC process, identification of mission needs and requirements, as well as analysis and control of costs, and management of Foreign Military Sales (FMS).

The group recommended decentralization of the management and surveillance of systems acquisition from OSD to the military departments and the establishment of a revised review mechanism for assuring OSD control. Accordingly, OSD has given the military departments more latitude in preliminary responses to new threats or technological breakthroughs. A new program initiation point, termed "Milestone 0", was designated, which allows the military departments to identify a mission need, submit it to the Secretary of Defense for approval and obtain authorization to conduct necessary mission concept studies and other exploratory efforts in order to meet the need with current capability. AAG report actions are taken in consonance with OMB Circular A-109 "Major Systems Acquisition," April 1976, which is applicable to all executive branch agencies of the government.

2. Commercial Off-the-Shelf Products

A new DoD initiative to satisfy Defense requirements through the acquisition of commercial off-the-shelf products got underway in January 1976. A pilor program testing the concept across a broad range of products is already underway. Expected benefits include R&D cost and time avoidance, lower unit production cost, lower Operation and Support (O&S) cost, increased reliability, increased competition, an improvement in the industrial base in various commodity areas, and earlier availability of the product to the user.

3. Contract Administration

During the past 15 months, the DoD has conducted a formal review of the Defense Contract Administration process, entitled "Forward Look." Administration of DoD contracts is a major task in which over 27,000 civilian and military personnel are currently involved. The study's policy changes, organizational realignments and manpower adjustments are substantial and will produce a distinct shift toward more reliance on Defense contractors for basic product integrity, and less direct government involvement in their management procedures. Over 32 policy changes are now being implemented to streamline the existing process and several DoD contract administration organizations are being realigned. These actions should result in a more direct and positive management structure.

4. Energy

During FY 1976, DoD energy conservation programs achieved a 7 percent reduction in the overall consumption of energy compared to FY 1975.

In energy Research Development Test and Evaluation (RDT&E), we are continuing to pursue the goals set forth in last year's Report within mission and resource constraints.

The Naval Petroleum Reserves Production Act of 1976 (P.L. 94-258) was enacted on 5 April 1976. The Act directed production for six years at maximum efficient rates unless extended by joint action of the legislative and executive branches of the government.

Management of the Energy Conservation Investment Program saved substantial funds by identifying projects which will amortize in six years or less while conserving the equivalent of well over a million barrels of fuel oil.

5. FMS Procurements

In recognition of the growth of Foreign Military Sales (FMS) procurements by DoD and changes in authority spelled out in P.L. 94-329, the Armed Services Procurement Regulation (ASPR) has been rewritten to consolidate and incorporate the procurement policy applicable to FMS. The revised DoD policy in this area makes the ASPR applicable to all FMS procurements regardless of fund citation. Provisions are also made for recovering a fair share of the cost for use of government production and research property. In addition, detailed instructions are provided on the allocability and allowability of sales commissions for frees; on notification to contractors when FMS options are contained in contracts; on limitations in liability where the purchasing country either self insures or pays insurance premiums; and on the policy, procedures, and special clauses which relate to offset provisions. This consolidation and simplification should improve the FMS contracting process, which it clearly needs.

6. Implementing Profit '76

Preliminary analyses of corporate level data by DoD indicated that the lack of investment on the part of defense contractors may have been traceable to the DoD profit policy. Accordingly, in May 1975, Deputy Secretary of Defense Clements directed that a study, entitled "Profit 76," be conducted to examine the present policy and develop revisions to motivate contractors to make the necessary investments to bring about greater productivity and thus reduce Defense Department acquisition costs.

As a result of this study, a new profit policy was promulgated. This policy provides that the imputed cost of capital for facility investment will be considered allowable on most negotiated DoD contracts, which are priced on the basis of cost analysis. In addition, the level of facility investment will be recognized by DoD contracting officers in reaching a prenegotiation profit figure. The net effect of these initiatives is to shift the DoD profit policy from one based on cost to one based on a combination of effort, risk, and investment.

7. Investment Policy Study Group

During the formulative stage for Profit '76, it became apparent that a number of factors (in addition to profit) affected DoD contractor

investment decisions. As a result, in December 1975, the DoD Investment Policy Study Group was formed to examine four questions:

(1) What opportunities or needs exist for capital investment in plant and equipment in order to lower acquisition costs for DoD weapon systems and materiel?

(2) What, in addition to profit, motivates capital investment by Defense industries?

(3) What resources are required and what are the sources of capital for investment?

(4) What changes in policy are required to foster investment?

In its December 1976 report, the group established investment incentive techniques which can be tailored to the requirements of individual programs in order to encourage more capital investment. Accordingly, appropriate policy guidance is being proposed.

8. Manufacturing Technology

The Department of Defense has undertaken a manufacturing technology program to improve the productivity of Defense contractors. This program has improved manufacturing techniques, processes, materials and equipment in order to provide for the timely, reliable and economical production of Defense materiel.

9. Outyear O&S Cost Reduction

OSD now requires that priority attention be given to the management and control of Operation and Support (O&S) costs during the weapons development process. Decisions on new programs now take into consideration O&S costs and focus on tradeoffs in such areas as logistics, reliability, and maintenance manning to support the objective of outyear O&S cost reduction. Whenever possible, new systems, particularly those introduced for modernization purposes, must be designed to cost less to operate and support than those being replaced.

O&S cost management objectives for major weapon systems in development are being achieved by setting specific program goals which have a major impact on O&S costs, such as reduction of manpower. Also, contractors are becoming involved through contractual approaches such as warranties and incentives based on measurements of logistic supportability.

Systems in operation are also being reviewed for O&S cost reduction opportunities. For example, the Air Force has established a Productivity, Reliability, Availability and Maintainability (PRAM) program office chartered to search for and implement such opportunities. During its first year of operation, four projects were completed in which an investment of $6.6 thousand resulted in an estimated $20.1 million cost savings over a five-year period in the O&S cost area.

10. Production Management

The Department of Defense is placing new emphasis on production management, particularly for major systems. A new directive has been developed which enumerates top level policy regarding the evaluating of manufacturing technology requirements, the requirements for early initiation of production, engineering and planning, and the criteria for assessing the producibility of designs prior to full-scale development. The military departments are already establishing organizational focal points for production management matters. As a result, a system's production management status should be more fully evaluated at each DSARC milestone. Service-conducted production readiness reviews prior to production milestone decisions should also be a useful feature.

11. Productivity

In response to a Presidential Management Initiative, a 2 percent improvement goal in productivity-measured support functions has been established. Management refinement efforts are being stressed through method improvements and labor standards development, training, motivation and capital investments. For example, separate capital investment funding for productivity enhancing projects which have a two-year or less payback period has been established.

12. Shipbuilding Claims

Shipbuilding claims are a complex and longstanding issue. A ship-building deficit of $600-700 million was identified in 1969 by Secretary of Defense Laird in his first appearance before Congress. In the intervening eight years the shipbuilding program has not lacked oversight, review, studies in detail by the Congress, the GAO, Commission on American Shipbuilding, the Navy, and the industry itself among others. Nevertheless, the claims problem worsened. Claims in shipbuilding grew to a level of approximately $2 billion.

The worsening of this problem can be ascribed to several factors, among them unusual economic conditions of the past six years and the nature of the contracts signed in the period of the late 1960s and early 1970s.

When faced with the prospect of an unprofitable situation in the performance of a contract, shipbuilders have looked to the Government for relief. Although the Government has been responsible for some of the cost growth, exclusive of inflation, much of the growth is caused by poor management, poor estimates and buying-in on large programs by industry. Unfortunately, there have been generally long delays in the settlement of these shipbuilding claims once presented. The delays have been mainly the result of the voluminous quantity of evidence required to be gathered and analyzed to justify the validity of a claim. The problem is exacerbated when litigation is involved because of the procedures involved in preparing for trial.

On 30 March, 1976, Deputy Secretary Clements appointed a Shipbuilding Executive Committee to examine the problem and assist in reaching a solution. On 30 April, he notified Congress that the Department intended to invoke Public Law 85-804 in an attempt to resolve the problem. However, despite intensive efforts by Government negotiators and the shipbuilder's representatives, they were unable to reach agreement. Consequently, on 9 June we withdrew formal notification to the two Armed Services Committees of intent to invoke P.L. 85-804. The Navy was then directed to process expeditiously the shipbuilders' claims on hand. A special three-man claims settlement board was formed for the purpose of processing the nearly one billion dollars in claims submitted by Newport News Shipbuilding and Drydock Co. This board has been delegated the authority to determine the validity of these claims, subject to the contractor's rights to appeal to the Armed Services Board of Contract Appeals.

13. Weapons Standardization

Standardization of weapon systems with our NATO allies is an important objective of Defense policy. Price increases in energy and various pressures on national economies and defense budgets have made the improvement of combat capability for NATO dependent on the efficient use of resources. Lack of standardization also has been a serious handicap to NATO's military effectiveness.

Although the NATO nations are a diverse group, they are motivated toward standardization by their desire to have an uninterrupted flow of defense equipment from a single logistics supply system during a period of conflict. The process of standardization is difficult, especially when perceived national needs and development efforts differ. This has recently been exemplified by the U.S. XM-1 and FRG Leopard II tank discussions. However, successful conclusion of a project of this nature can provide a strong precedent for establishing future weapon standardization efforts.

14. Specifications and Standards

A concerted management effort is underway both to improve military and federal specifications and standards documents, particularly their application to the defense procurement process, and to incorporate defense needs into an orderly system of industry standardization documents.

In the area of materiel standardization, the program for utilization of common reliable existing components below the system level is receiving increased emphasis. Major anticipated benefits in these areas are future cost avoidance -- especially in reducing contractor compliance costs, greater reliance on the industrial market place, and an improved readiness posture.

E. Coordination and Control

The coordination of national security activities was enhanced during the past year by the creation of the Defense Review Panel. Control over operations has been increased by the opening of the newly modified National Military Command Center (NMCC).

The Defense Review Panel (DRP) replaced the Defense Program Review Committee as the NSC sub-group with responsibility for reviewing major defense policy and program issues of interest to the President and NSC. The Secretary of Defense is the chairman. The charter and membership of the DRP should ensure effective support of Presidential decision-making on defense issues by providing a ready mechanism for high level interagency working review of national security policies and by highlighting any diverse opinions on these matters. During the past year this panel completed studies and policy reviews of U.S. naval force requirements, civil defense posture, and defense strategy and force structure.

The new NMCC, which became operational in February 1976, is the center of the worldwide command and control system and is discussed in detail in Chapter V. It provides the National Command Authorities with real-time information from the field and offers advanced automatic data processing technology to interpret that information. The Command Center provides secure communication links between the Department and both the operational commanders and the National Security Council.

X. THE DEFENSE BUDGET AND THE ECONOMY

A. Summary

Department of Defense funding requirements for the programs previously discussed are as follows:

TABLE X-1
($ Millions)

	FY 1976	FY 19TQ	FY 1977	FY 1978
Total Obligational Authority (TOA)	97,511	22,545	110,190	123,150
Budget Authority (BA)	102,233	21,741	106,643	120,487
Outlays	88,537	22,110	98,300	110,100

Total obligational authority (TOA) refers to the value of the direct defense program for each year. The direct program for a particular year is financed in part from prior year balances of budget authority. TOA does not reflect certain transactions, such as trust fund sales, but does include the proceeds of off-the-shelf sales to other nations which are used to acquire new items.

Budget authority (BA) represents the legal authority to incur obligations, that is, authority to hire personnel or enter into contracts involving expenditures of funds from the Treasury within a specified period of time. Budget authority, in most cases, is provided by the appropriations process, but there are some exceptions. The most significant exceptions involve the transactions of the trust fund for foreign military sales and sales from the stockpile.

Outlays represent expenditures or net checks issued. About three-quarters of FY 1978 outlays will result from FY 1978 budget authority; the remainder will come from budget authority provided in FY 1977 and earlier years.

As shown in the table above, TOA rose by $12.6 billion from FY 1976 to FY 1977. After adjustments are made to TOA in FY 1976 and FY 1977 for price changes and for those factors which do not contribute directly to US military capability, the real increase in baseline resources was $5.8 billion.

Total TOA is projected to rise by $13.0 billion from FY 1977 to FY 1978 in current dollars. Of that amount, about $5.9 billion is necessary to cover the effects of inflation while the remaining $7.1 billion is needed to provide:

-- Real program growth in the investment accounts for force modernization necessary to reverse the adverse trends in relative U.S./Soviet force capabilities.

CHART X-1

DEPARTMENT OF DEFENSE BUDGET TRENDS

(BILLIONS OF CURRENT $)

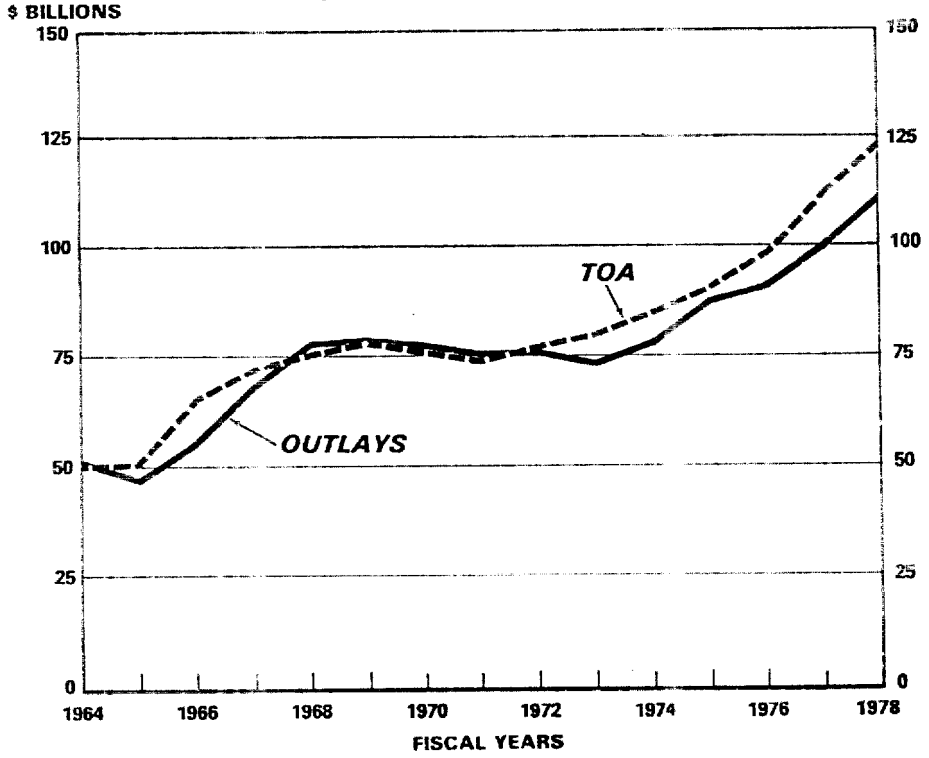


CHART X-2

DEPARTMENT OF DEFENSE BUDGET TRENDS

(BILLIONS OF CONSTANT FY 1978 $)

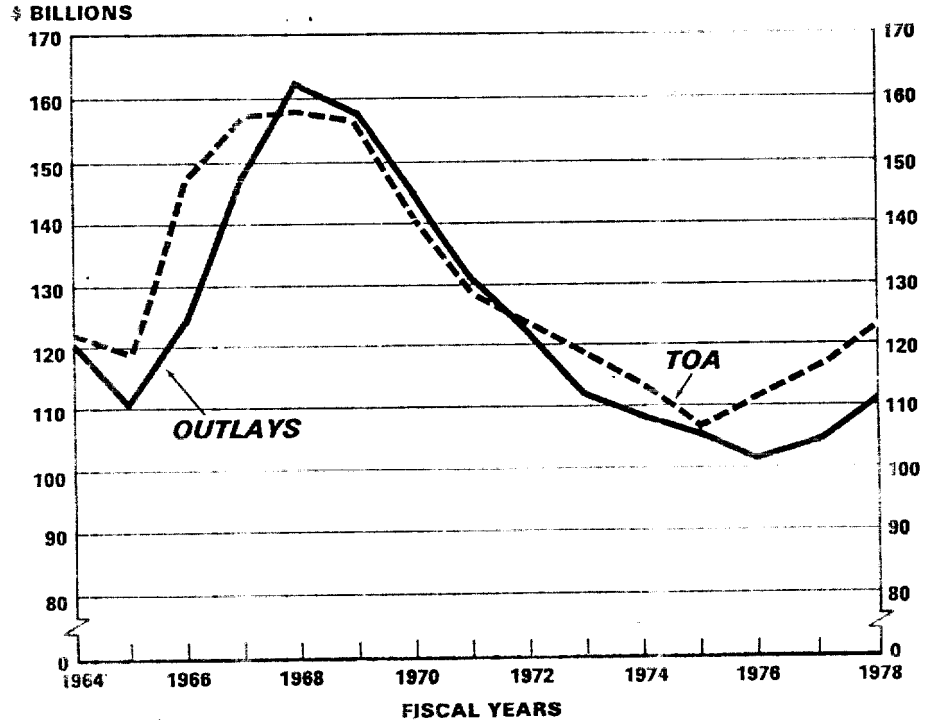


TABLE X-2

Total and Baseline Programs
($ Millions)

Current Prices	1973	1974	1975	1976	1977	1978
TOA	80,158	85,075	87,902	97,511	110,190	123,150
Prior-Year shipbuilding	125	608	1,216	-1,377	-1,623	- 566
Comparable TOA	80,283	85,683	89,118	96,134	108,507	122,584
Retired pay	4,392	5,137	6,239	7,326	8,238	9,058
MAP	1,123	3,310	1,550	1,355	1,066	1,030
Military Functions, SEA	5,172	1,290	270	-	-	-
Naval Petroleum Reserves	-	-	68	119	-	-
Total, nonbaseline	10,687	9,737	8,127	8,800	9,304	10,088
Baseline TOA, DoD/MAP	69,596	75,946	80,991	87,334	99,263	112,496
Constant (FY 1978 Prices)						
TOA	117,036	113,039	106,615	110,848	116,862	123,150
Prior-Year shipbuilding	125	608	1,216	-1,377	-1,623	- 566
Comparable TOA	117,161	113,647	107,831	104,471	115,234	122,584
Retired pay	6,857	7,314	7,784	8,232	8,746	9,058
MAP	1,611	4,529	1,873	1,518	1,120	1,030
Military Functions, SEA	7,910	1,769	319	-	-	-
Naval Petroleum Reserves	-	-	84	136	-	-
Total, nonbaseline	16,378	13,612	10,060	9,886	4,866	10,088
Baseline TOA, DoD/MAP	100,783	100,035	97,771	99,585	105,373	112,496

-- Improvement in the day-to-day readiness of U.S. forces through the procurement of critical equipment and the enhancement of airlift capability.

-- Increased sustainability for U.S. forces through the replenishment of depleted prepositioned and war reserve materials and ammunition.

B. Comparison with Past Years

The increase in real purchasing power projected for FY 1978, if approved, will continue the path of real growth necessary to reverse the trend of the previous nine years. Charts X-1 and X-2 summarize these trends in current and constant dollars respectively for both TOA and outlays. Total and baseline budget trends for FY 1973 through FY 1978 are summarized in Table X-2.

C. Assumptions and Projections

The proposed FY 1978 Defense Budget and the FY 1979-82 projections make a number of assumptions about economic performance and Congressional action. The most critical economic assumption underlying these projections is that the rate of inflation will be substantially lower in the FY 1978-82 period than it has been in the past few years.

Through December 1976, purchase price increases were determined on the basis of an index maintained by the Department of Commerce. The present deflator consists of indexes which are applicable principally to the private sector; they may not represent actual Department of Defense price experience. However, the Commerce Department's Bureau of Economic Analysis (BEA) and the Office of the Secretary of Defense (Comptroller) are currently developing a price deflator specifically for Defense purchases. The development phase of this project should be completed in time for use in the projection of the FY 1979 budget. In the interim, projections of purchase price increases for defense were developed by using economic factors furnished for this purpose by the Office of Management and Budget. On this basis, the trend in the prices of the goods and services purchased from industry is projected to be:

TABLE X-3

FY	Percent Increase
1977-78	6.7
1978-79	5.3
1979-80	4.6
1980-81	4.3
1981-82	4.3

The pay increases for active duty military and civilians employed by DoD and the cost-of-living adjustments for retired military personnel are shown in the following table. These projections are also based upon guidance furnished by the Office of Management and Budget.

TABLE X-4

Pay Raise Assumptions, FY 1977-82

General Schedule and Military Personnel

October 1, 1976 (in effect)	4.83
October 1, 1977	6.50
October 1, 1978	6.25
October 1, 1979	6.00
October 1, 1980	5.75
October 1, 1981	5.25

Wage Board Blue Collar Increases

FY 1977	8.86
FY 1978	3.40
FY 1979	3.40
FY 1980	4.50
FY 1981	5.75
FY 1982	5.25

Military Retired Pay CPI's

3/1/77	4.8	3/1/80	2.3
9/1/77	2.7	9/1/80	2.3
3/1/78	2.6	3/1/81	2.0
9/1/78	2.7	9/1/81	1.8
3/1/79	2.4	3/1/82	1.5
9/1/79	2.5	9/1/82	1.4

D. Outyear Projections

Using these assumptions we project that the Defense budget projections from FY 1978 through FY 1982 will be as follows:

TABLE X-5

DoD/MAP, $Billions (Current Prices)

	TOA	Budget Authority	Outlays
FY 1978	123.1	120.5	110.1
FY 1979	135.4	133.1	121.3
FY 1980	145.8	143.5	133.8
FY 1981	156.7	154.4	145.6
FY 1982	166.8	164.6	156.4

E. Analysis by Mission Area

The following table provides a financial summary of the ten major military programs:

TABLE X-6

DEPARTMENT OF DEFENSE BUDGET
FINANCING SUMMARY BY MAJOR PROGRAM
(Billions of $)

Military Program	Current Dollars Total Obligational Authority FY 1975	FY 1976	FY 1977	FY 1978
Strategic Forces	7.2	7.3	9.8	11.0
General Purpose Forces	28.1	33.0	38.2	44.3
Intelligence and Communications	6.3	6.7	7.5	8.2
Airlift and Sealift	.9	1.4	1.5	1.7
Guard and Reserve Forces	4.8	5.4	6.0	7.2
Research and Development	7.7	8.7	10.1	11.1
Central Supply and Maintenance	9.1	9.8	11.1	11.8
Training, Medical, Other General Personnel Activities	20.0	21.6	22.7	24.3
Administration and Associated Activities	2.0	2.1	2.1	2.3
Support of Other Nations	1.8	1.6	1.3	1.3
Total	87.9	97.5	110.2	123.1

	Constant FY 1978 Dollars Total Obligational Authority FY 1975	FY 1976	FY 1977	FY 1978
Strategic Forces	8.8	8.3	10.4	11.0
General Purpose Forces	33.8	37.5	40.5	44.3
Intelligence and Communications	7.7	7.7	8.0	8.2
Airlift and Sealift	1.1	1.6	1.6	1.7
Guard and Reserve Forces	5.9	6.1	6.4	7.2
Research and Development	9.3	9.8	10.7	11.1
Central Supply and Maintenance	11.1	11.2	11.8	11.8
Training, Medical, Other General Personnel Activities	24.3	24.4	24.1	24.3
Administrative and Associated Activities	2.4	2.4	2.2	2.3
Support of Other Nations	2.2	1.8	1.3	1.3
Total	106.6	110.8	116.9	123.1

1. Strategic Forces

A real baseline growth of $6 billion is projected for strategic forces from FY 1977 to FY 1978. The FY 1978 budget provides funds for modernization to account for Soviet momentum in strategic forces and to reverse strategic force aging trends. The increases will enhance strategic stability and deterrence by improved flexibility and operational capabilities. These programs are consistent with current SALT agreements. Research and development efforts will be continued as a hedge against future uncertainties.

2. General Purpose Forces and Other Program Missions

Real baseline growth of $3.8 billion is projected for general purpose forces. Of the remaining $1.8 billion increase, $.4 billion of the growth will be for Research and Development, while $1.4 billion will be spent on the major programs themselves. The FY 1978 budget request includes funds to strengthen land, naval, air, and mobility forces. This budget will emphasize more armored and armor support forces, larger and more modern naval forces and more strike aircraft. It will also enhance the mobility of U.S. forces through a combination of airlift and equipment prepositioning. Manpower strength will be maintained at about 2.1 million active military personnel.

Excessively austere defense budgets in past years have resulted in "backlogs" of overhauls and real property maintenance, depleted war reserve stocks, and large spare-parts shortages. The budget plan lays the groundwork for achieving 100 percent funding of the 90-day war reserve stock requirements and for reducing the backlog of overhauls and property maintenance.

F. The Budget By Appropriation Category

The following table provides a financial summary of the FY 1978 defense budget by appropriation category.

TABLE X-7

DEPARTMENT OF DEFENSE BUDGET
FINANCIAL SUMMARY BY APPROPRIATION CATEGORY
(Billions of $)

Current Dollars
Total Obligational Authority

Appropriation Title	FY 1975	FY 1976	FY 1977	FY 1978
Military Personnel	24.9	25.4	26.2	27.7
Retired Pay	6.2	7.3	8.2	9.1
Operation and Maintenance	26.2	28.8	32.2	35.0
Procurement	17.4	21.3	27.9	35.1
RDT&E	8.6	9.5	10.6	12.1
Military Construction	1.8	2.2	2.4	1.5
Family Housing	1.2	1.3	1.3	1.4
Civil Defense	.1	.1	.1	.1
Revolving and Management Funds	-	.1	.2	.2
Military Assistance	1.6	1.4	1.1	1.0
Total	87.9	97.5	110.2	123.1

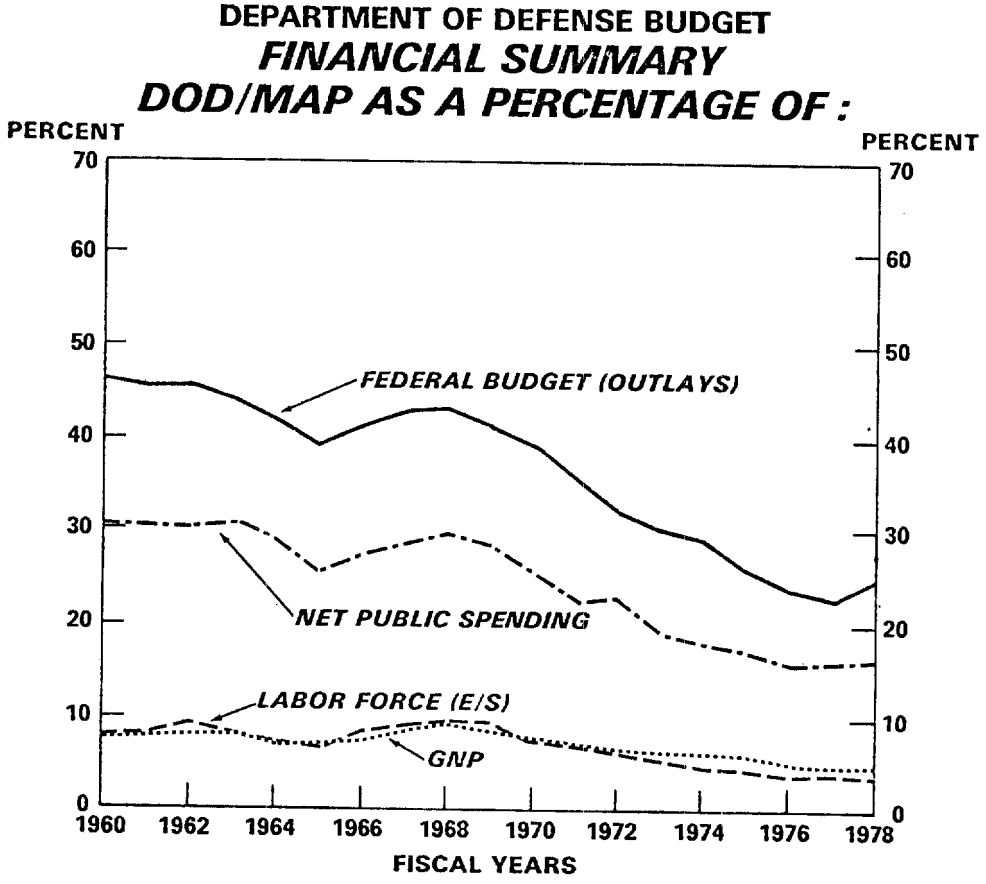
Constant FY 1978 Dollars
Total Obligational Authority

	FY 1975	FY 1976	FY 1977	FY 1978
Military Personnel	29.3	28.5	27.8	27.7
Retired Pay	7.8	8.2	8.7	9.1
Operation and Maintenance	32.3	33.2	34.2	35.0
Procurement	21.3	24.4	29.6	35.1
RDT&E	10.4	10.8	11.2	12.1
Military Construction	2.1	2.5	2.5	1.5
Family Housing	1.4	1.5	1.3	1.4
Civil Defense	.1	.1	.1	.1
Revolving and Management Funds	-	.2	.2	.2
Military Assistance	1.9	1.5	1.1	1.0
Total	106.6	110.8	116.9	123.1

G. Defense and the Economy

There are some serious misconceptions about the defense budget and its impact upon the economy. Some people claim that defense spending dominates the economy; others maintain that military expenditures, compared with other forms of government outlays, provide fewer jobs and, thus, are a drag on the economy. The fact is defense outlays now account for less than 25 percent of the entire federal budget and less than 17 percent of all public expenditures. Appendix C, page 10 displays net total U.S. public spending since 1939 in detail. The trend has been strong and persistent, with Defense spending falling steadily behind spending growth for social and economic programs. Since 1971, social and economic spending has grown about 4 1/2 times faster than defense spending.

CHART X-3



At the minimum, the impact of the defense budget on the economy is no more inflationary or deflationary than any other form of public spending, nor does money paid for defense work create fewer jobs than other government spending. This is indicated by comparing the ratio between the defense budget and the economy with the ratio between defense employment and total U.S. employment. DoD/MAP spending (excluding retired pay) is projected at 5.0 percent of the FY 1978 Gross National Product while DoD/MAP employment is projected at 5.3 percent of total U.S. employment. Further, a change in defense spending impacts on government or industry payrolls immediately and directly; changes in non-defense spending may take a considerable time to move through various levels of government.

II. FMS Transactions and Projections

Budgetary treatment of foreign military sales (FMS), which are financed through a trust fund, has proved particularly troublesome in recent years. FMS orders from foreign governments have been included in regular DoD budget authority. As these orders have been passed from the trust fund to the military departments which do the actual contracting, they have been treated as unobligated balances in the various appropriation accounts of the department. Because of the large volume of these orders, the unpredictable nature of the arms transfer process, and the fact that FMS deals with material budget over several years, considerable distortion has resulted in the balances being projected. Unobligated balances appear to have been rising rapidly, and projections have been considerably off the mark.

Changes were necessary to provide a clearer picture of defense trends, and to distinguish clearly between FMS transactions and balances and those financed by Congressional appropriations. Two major changes have been made in budgetary and accounting treatment of FMS transactions. First, FMS transactions will be treated as budget authority only as obligations are incurred -- not when orders are accepted. Second, FMS orders will be transferred to DoD appropriations accounts shortly before the time it is necessary to execute contracts.

1. Obligation Shortfall Below Estimates

Actual obligations under Defense budget authority in FY 1976 and the transition quarter were lower than projected in January 1976; unobligated balances at September 30, 1976 were $13.3 billion higher than the January projection. Most of the variances stemmed from the difficulties in the FMS area just described. Of the $13.3 billion variation from estimated balances, $6.4 billion is directly involved in FMS transactions. Of the remainder, about $3.3 billion results from secondary effects of the statistical model used to project balances from the FMS figures earlier entered into the data base. After allowing for direct and indirect FMS effects, unobligated balances for U.S. defense activities as of the end

of the transition quarter were about $3.6 billion higher than they might reasonably have been expected to be, including: about $1.7 billion in the shipbuilding program; $.5 billion in military construction; and $1.4 billion in various other procurement programs (e.g., Trident missile, EA-6B, A-6E, A-10, F-15, etc.).

In the estimates now being presented, it is hoped the FMS-related problems have been corrected, as noted. We have reassessed the direct U.S. defense programs involved and have found that, in most instances, the requirements continue to be valid and that the delays warrant no change in long-run cost estimates. Where re-estimates of costs and schedules are in order, these are reflected in the revised FY 1977 and FY 1978 estimates now being submitted.

J. Mission Oriented Budget Presentation

Section 601 of the Congressional Budget Act requires that FY 1979 budget submissions be broken down by agency missions. The Department of Defense continues to implement and support all aspects of the Congressional Budget Act. However, it is important that this particular provision of law be approached with care and understanding on all sides.

It should be recognized that ultimate implementation of Section 601 will require the Office of Management and Budget to prescribe uniform procedures for the presentation of mission budgets by all agencies of the federal government. We, in turn, must recognize that the Congressional Budget Office, the House and Senate Budget Committees, and the several Congressional Oversight Committees also have a responsibility for and interest in mission budgets.

We have received preliminary communications on mission budgets from the Office of Management and Budget, the Congressional Budget Office and both Budget Committees. The Senate Budget Committee has requested the Department to provide a specific mission oriented budget for FY 1978. This request puts the Department in a difficult position, since other organizations have an active interest in the data provided. For example, the House Budget Committee has expressed an intention to examine the subject during the coming year as a preliminary step to implementation of "any mission oriented presentation."

It is the Department's view that the requirements of Section 601 should be satisfied through the instrument of the Five Year Defense Program (FYDP). The Department has recognized that the appropriation structure specified by the Congress is input oriented. The FYDP structure has attempted to convert these input oriented resources to output oriented displays. This structure has been evolving for fifteen years and at the present time consists of both force-related and support-related missions. Efforts are continuing to associate the maximum resources practicable with the force-oriented mission programs, consistent with our management needs.

However, individual training, central supply, logistics, and medical organizations support more than a single force mission and it is not possible to program, budget, execute, and account for these programs in terms of force related missions without an arbitrary allocation of resources.

As a practical matter it is probably true that no single budget structure will satisfy the objectives of all reviewing authorities. Within the Department, programs are frequently aggregated in different ways for analytical purposes. We recognize that similar actions will be taken within the legislative branch. The DoD FYDP (through the budget year) has been provided to the Congressional staffs in program element detail for that reason. This provides a common data base for a wide variety of selected analyses, and, as indicated by the Congressional Budget Office, should materially assist the Congress to look at the defense budget in terms of major missions and their costs.

APPENDICES

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APPENDIX A

TABLE 1
Department of Defense
FINANCIAL SUMMARY
(In Millions of Dollars)

	FY 1964	FY 1968	FY 1972	FY 1976	FY 1977	FY 1978
Summary by Budget Title						
Military Personnel	12,983	19,961	23,147	25,430	26,210	27,662
Retired Pay	1,211	2,093	3,889	7,326	8,238	9,058
Operation and Maintenance	11,693	20,950	21,242	28,848	32,214	34,951
Procurement	15,028	22,528	18,528	21,299	27,947	35,143
Research, Development, Test, and Evaluation	7,053	7,263	7,584	9,520	10,596	12,137
Special Foreign Currency Program	-	-	12	3	4	2
Military Construction	977	1,557	1,234	2,223	2,356	1,494
Family Housing & Homeowners Asst. Prog.	602	612	845	1,286	1,257	1,411
Civil Defense	111	86	78	86	83	91
Revolving and Management Funds	-	-	-	135	220	171
Military Assistance Program	989	576	928	1,355	1,066	1,030
Total - Direct Program (TOA)	50,647	75,627	77,487	97,511	110,190	123,150
Summary by Program						
Strategic Forces	8,501	7,225	7,259	7,275	9,771	11,015
General Purpose Forces	16,400	30,511	25,511	33,050	38,182	44,348
Intelligence and Communications	4,380	5,542	5,456	6,678	7,491	8,239
Airlift and Sealift	1,040	1,747	1,114	1,365	1,506	1,674
Guard and Reserve Forces	1,768	2,177	3,257	5,396	5,997	7,162
Research and Development	4,812	4,270	5,750	8,661	10,076	11,067
Central Supply and Maintenance	4,642	8,381	8,657	9,781	11,088	11,790
Training, Medical, Other Gen. Pers. Activ.	6,959	12,186	15,230	21,589	22,702	24,335
Administration and Assoc. Activities	1,078	1,236	1,689	2,129	2,102	2,260
Support of Other Nations	1,066	2,352	3,564	1,587	1,275	1,259
Total - Direct Program (TOA)	50,647	75,627	77,487	97,511	110,190	123,150
Summary by Component						
Department of the Army	12,275	24,962	22,074	23,966	26,928	30,175
Department of the Navy	14,450	20,781	24,037	31,480	36,449	41,085
Department of the Air Force	19,958	24,974	23,834	28,443	32,257	35,958
Defense Agencies/OSD/JCS	1,007	1,498	1,742	3,492	3,822	4,250
Defense-wide	1,857	2,749	4,794	8,689	9,585	10,561
Civil Defense (DCPA)	111	86	78	86	83	91
Military Assistance Program	989	576	928	1,355	1,066	1,030
Total - Direct Program (TOA)	50,647	75,627	77,487	97,511	110,190	123,150
Financing Adjustments	22	1,113	-6,457	4,722	-3,547	-2,663
Budget Authority (NOA)	50,669	76,740	71,030	102,233	106,643	120,487
Outlays	50,786	78,027	75,957	88,537	98,300	110,100

Note: In the FY 1978 column, amounts for military and civilian pay increases and other proposed legislation are distributed. Details may not add to totals due to rounding.

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TABLE 2 - U.S. STRATEGIC FORCES a/

	FY 64	FY 68	FY 72	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81	FY 82
STRATEGIC OFFENSIVE FORCES										
Ballistic Missile Launchers										
ICBM Launchers On-Line										
Titan	108	54	54	54	54	54	54	54	54	54
Minuteman I	600	570	250	-	-	-	-	-	-	-
Minuteman II	-	394	494	444	444	394	444	444	444	444
Minuteman III b/	-	-	210	500	500	550	550	550	550	550
Subtotal ICBM Launchers On-Line	708	1018	1008	998	998	998	1048	1048	1048	1048
ICBM Launchers in Conversion/ Upgrade/494L	-	36	46	56	56	56	6	6	6	6
Total ICBM Launchers	708	1054	1054	1054	1054	1054	1054	1054	1054	1054
SLBM Launchers On-Line										
Polaris A-1	64	-	-	-	-	-	-	-	-	-
Polaris A-2	160	80	128	-	-	-	-	-	-	-
Polaris A-3	-	432	160	128	112	160	128	144	112	112
Poseidon C-3	-	-	192	400	416	400	400	384	320	288
Poseidon C-4	-	-	-	-	-	-	-	48	80	112
Trident C-4	-	-	-	-	-	-	24	48	72	120
Subtotal SLBM Launchers On-Line	224	512	480	528	528	560	552	624	584	632
SLBM Launchers in Conversion/ Overhaul/Shakedown c/	112	144	176	128	128	120	152	104	192	168
Total SLBM Launchers	336	656	656	656	656	680	704	728	776	800
Total Ballistic Missile Launchers d/	1152 e/	1710	1710	1710	1710	1734	1758	1782	1830	1854
Bombers										
(Squadrons/TAI) f/										
B-52 C-F	25/413	17/281	11/177	5/151	5/150	5/149	5/79	5/79	5/79	5/79
B-52 G-H	17/281	17/251	17/272	17/270	15/269	15/269	15/268	15/266	15/266	15/265
FB-111A	-/-	-/-	4/68	4/69	4/69	4/68	4/68	4/68	4/68	4/68
B-1	-/-	-/-	-/-	/3	-/3	-/3	-/4	-/12	2/36	4/83
Total Bombers g/	78/1277	40/643	32/517	26/493	24/491	24/489	24/419	24/425	26/449	28/495
Tankers										
(Squadrons/TAI)										
ACTIVE										
KC-97	12/241	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
KC-135	38/661	41/677	40/677	35/621	32/584	30/547	30/547	30/547	30/547	30/547
RESERVE										
KC-135 (ANG)	-/-	-/-	-/-	4/32	10/80	13/104	13/104	13/104	13/104	13/104
KC-135 (RES)	-/-	-/-	-/-	-/-	2/16	3/24	3/24	3/24	3/24	3/24
Air Launched Missiles (UE)										
Hound Dog A and B	580	340	44	-	-	-	-	-	-	-
SRAM	-	-	-	1140	1140	1140	1140	1140	1172	1356
Quail (unarmed Decoy)	392	390	323	284	284	284	284	284	180	50
Cruise Missile	-	-	-	-	-	-	-	20	220	550
Total Force Load h/										
Weapons	6816	4548	5728	8330	8402	8402	8612	9108	9324	10452
Megatons	9206	6066	4348	3191	3124	3120	3172	3308	3607	4177
One Megaton Equivalents i/	7576	5094	4093	3498	3438	3467	3524	3722	4024	4670
Alert Force Loading j/										
Weapons	5000	2400	3601	5387	5458	5492	5662	6002	6081	6729
Megatons	4500	3300	2638	1875	1854	1843	1897	1997	2201	2571
One Megaton Equivalents i/	3500	2700	2414	2025	2007	2026	2084	2228	2426	2835

TABLE 2 - U.S. STRATEGIC FORCES a/ (Cont'd)

	FY 64	FY 68	FY 72	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81	FY 82
STRATEGIC DEFENSIVE FORCES										
Air Defense, Surveillance, and Warning/Forces										
Interceptors (CONUS Squadrons/TAI)										
Active										
F-101	16/398	13/273	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
F-102	9/224	1/29	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
F-104	2/50	1/26	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
F-106 k/	13/280	11/251	9/192	7/141	7/141	7/136	7/133	6/123	5/103	3/87
FOI k/	-/-	-/-	-/-	-/-	-/-	-/-	-/-	1/18	2/36	4/87
Air National Guard										
F-4	-/-	-/-	-/-	-/-	1/20	1/20	1/20	2/39	4/76	4/76
F-86	5/110	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
F-89	12/248	2/40	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
F-100	2/42	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
F-101	-/-	-/-	6/141	5/88	3/59	3/58	3/57	2/39	-/-	-/-
F-102	10/191	20/404	9/189	2/44	-/-	-/-	-/-	-/-	-/-	-/-
F-106	-/-	-/-	2/38	6/90	6/90	6/91	6/91	6/97	6/113	6/124
Total Interceptors	69/1543	48/1023	26/560	20/363	17/310	17/305	17/301	17/316	17/328	17/374
Surface-to-Air Missiles (Batteries/Launchers)										
Nike-Hercules										
Active and Reserve 1/	147/1366	123/1122	40/340	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Command and Control Centers (CONUS)										
Nike-Hercules Fire Coordination Centers	26	17	10	-	-	-	-	-	-	-
Regional Control Center										
(CONUS)	-	-	8	6	6	6	6	2	-	-
(ALASKA)	-	-	1	1	1	1	1	1	-	-
BUIC Control Centers	-	13	14	1	1	1	1	1	-	-
Manual Control Centers										
(CONUS)	-	-	-	2	1	1	1	-	-	-
(ALASKA)	-	-	3	2	2	2	2	2	-	-
Regional Operations Control Centers (CONUS)	-	-	-	-	-	-	-	3	4	4
(ALASKA)	-	-	-	-	-	-	-	-	1	1
Surveillance and Warning Systems										
Ground Based Radars (Sites)										
DEW Line	39	39	31	31	31	31	31	31	31	31
CONUS Surveillance Radars										
Military m/	144	111	100	51	49	49	38	5	5	5
Military/FAA Joint Use m/	-	-	-	-	8	8	29	43	43	43
ALASKA n/	-	-	13	13	13	13	13	13	14	14
ICELAND	-	4	2	2	2	2	2	2	2	2
Airborne Radars EC-121s (AAI)										
Active	85	80	18	9	-	-	-	-	-	-
Air Force Reserve	-	-	-	7	10	10	10	10	-	-
Mission Evaluation (EW) o/										
EB-57 (Active)	2/38	2/38	2/44	1/21	1/21	1/21	1/21	1/21	-/-	-/-
EB-57 (ANG)	-/-	-/-	-/-	2/22	2/20	2/20	2/20	2/20	2/20	-/-
Ballistic Missile Defense, Surveillance and Warning Forces										
Interceptors										
Spartan (Opn'l/Standby)	-	-	-	30	-	-	-	-	-	-
Sprint (Opn'l/Standby)	-	-	-	70	-	-	-	-	-	-
ABM Radars (Opn'l/Standby)	-	-	-	2	1	1	1	1	1	1
Surveillance and Warning Systems										
Defense Support Program										
Satellites p/										
Eastern Hemisphere	-	-	1	1	1	1	1	1	1	1
Western Hemisphere	-	-	2	2	2	2	2	2	2	2

TABLE A - U.S. STRATEGIC FORCES a/ (Cont'd)

	FY 66	FY 68	FY 72	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81	FY 82
STRATEGIC DEFENSIVE FORCES										
Ground Stations										
Overseas	-	-	1	1	1	1	1	1	1	1
CONUS	-	-	2	2	2	2	2	2	2	2
Simplified Processing Station	-	-	-	-	1	1	3	4	4	4
Ground Based Radars (Sites)	5	3	3	3	3	3	3	3	3	3
BMEWS q/	-	8	9	-	-	-	-	-	-	-
440L OTH OTH Radars r/	-	-	7	6	6	6	3	-	-	-
474 SLBM "Dish" Radars s/	-	-	-	-	-	-	1	2	2	2
SLBM Phased Array Radars										
Space Defense and Surveillance Forces										
Ground Based Radars (Sites) t/	-	-	1	1	1	1	1	1	1	1
Phased Array Radars	-	3	2	2	2	2	2	3	3	3
"Dish" Radars	-	-	-	9	9	9	9	9	9	9
Space Surveillance Fence										
Ground Based Optical Sensors (Sites) u/	-	4	4	4	4	4	5	9	9	7
Interceptors	-	4	4	-	-	-	-	-	2	5
Strategic Reconnaissance										
SR-71 (UE)	-	25	9	8	8	8	8	8	8	8
STRATEGIC COMMAND AND CONTROL										
National Level Command Centers										
National Military Command Center (NMCC), Pentagon	1	1	1	1	1	1	1	1	1	1
Alt. NMCC	1	1	1	1	1	1	1	1	1	1
National Emergency Airborne Command Post (Stations/UE)	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/2
National Emergency Command Post Afloat (Stations/Ships)	1/2	1/2	-	-	-	-	-	-	-	-
Major Subordinate Level Command Posts										
CINCSAC Command Post (CP)	1	1	1	1	1	1	1	1	1	1
SAC Alt. CP	1	1	2	2	2	2	2	2	2	2
SAC Airborne Command Post (Stns/UE)	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/5
CINCLANT CP	1	1	1	1	1	1	1	1	1	1
LANT Alt. CP	1	1	1	1	1	1	1	1	1	1
LANT Airborne Command Post (Stns/UE)	-	-	-	1/3	1/3	1/3	1/3	1/3	1/3	1/3
CINCPAC CP	1	1	-	1	1	1	1	1	1	1
PAC Alt. CP	1	1	1	1	1	1	1	1	1	1
PAC Airborne Command Post (Stns/UE)	-	1/5	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
CINCEUR CP	1	1	1	1	1	1	1	1	1	1
EUR Alt. CP	1	1	1	1	1	1	1	1	1	1
EUR Airborne Command Post (Stns/UE)	1/5	1/5	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
CINCNORAD CP	-	1	1	1	1	1	1	1	1	1
Cheyenne Mt. Complex	1	1	1	1	1	1	1	1	1	1
NORAD Alt. CP										
Major Communication Systems										
Post Attack Command Control System (PACCS) (Stns/UE)	12/36	8/32	8/29	8/23	7/22	7/21	7/22	7/22	7/20	7/25
LANT and PAC TACAMO (Stns/UE) v/	1/4	1/5	2/12	2/12	2/12	2/12	2/12	2/12	2/12	2/12
SEAFARER ELF Radio Site	-	-	-	-	-	-	-	-	-	-
AFSATCOM Satellites	-	-	-	2	8	10	10	10	11	13

a/ Forces conform to the provisions of the ABM treaty and the Interim Agreement which ends in 1977. Planned force levels may change as future agreements are negotiated during SALT II.
b/ Subsequent to FY 78 all Minuteman III missiles will be equipped with the improved NS-20 guidance package resulting in an improved CEP.
c/ In FY 78 one Trident SSBN (24 launchers) is included in the off-line category. It will be ready for deployment in FY 79.
d/ ICBM/SLBM force level tradeoffs subsequent to FY 77 will have to be reviewed in light of developments in on-going SAL negotiations.
e/ FY 64 total also includes 108 Atlas missiles.
f/ Does not include bombers in permanent storage. TAI figures, except for FY 64, include aircraft available from UE + CCT + RDT&E + Command Support and B-52 D/F bombers in special storage. Planned attrition is also included.
g/ FY 64 total also includes 495 B-47/EB-47 and 88 B-58s not shown on stub, FY 68 total includes 86 B-58s.
h/ Total force loadings reflect only those independently-targetable weapons associated with on-line ICBMs/SLBMs and UE aircraft. Weapons reserved for restrike and weapons on inactive status are not included.
i/ Equivalent yield is calculated by taking yield to the one-half power for weapons greater than one MT and to the two-thirds power for weapons less than one MT. It provides a crude measure of effectiveness against large area soft targets such as urban complexes.
j/ The U.S. forces on day-to-day alert include: (1) ICBMs, with a reaction time from normal readiness of 5 minutes or less; (2) SLBMs carried by submarines at sea; and (3) bombers on ground alert with a reaction time of 15 minutes or less.
k/ Includes one Air Defense Training Squadron (F-106 FY 76 to FY 81, FOI FY 82 and on).
l/ Excludes General Purpose Nike-Hercules units in Florida and Alaska.
m/ In FY 80 the National Airspace Systems consisting of 113 long-range FAA radars will be operational. Forty-three of these radars around the CONUS perimeter will be utilized in joint use for both the air defense mission and air traffic control.
n/ Includes two JSS Radars in FY 81 & 82.
o/ In wartime these aircraft are committed to NATO.
p/ Excludes Augmentation Program.
q/ Ballistic Missile Early Warning System sites in Alaska, Greenland, and England.
r/ Transmitters in Phillippine Islands, Okinawa, and Japan (2). Receivers in Cyprus, Italy (2), Germany, and England.
s/ FY 76 Force level reflects deletion of the FPS 49 radar at Morrestown, N.J.
t/ Current "dish" radars in Alaska and Turkey. Does not include contributing sensors.
u/ Baker-Nunn tracking cameras in CONUS, New Zealand, Korea, and Italy; excludes a contributing camera in Canada.
v/ Includes NEACP and CINCEUR.

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TABLE 3 - GENERAL PURPOSE FORCES: LAND

	FY64	FY68	FY72	FY75	FY76	FY77	FY78	FY79	FY80	FY81	FY82
Army Forces											
Divisions (Brigades)											
Active Div											
Airborne	2(6)	2(6)	1(3)	1(3)	1(3)	1(3)	1(3)	1(3)	1(3)	1(3)	1(3)
Air Assault	-	1(3)	1(3)	1(3)	1(3)	1(3)	1(3)	1(3)	1(3)	1(3)	1(3)
Infantry	6(15)	8(24)	3(9)	4(10)	5(11)	5(12)	5(12)	4(10)	3(7)	3(7)	3(7)
Mechanized	4(12)	4(12)	4(12)	4(13)	5(14)	5(15)	5(15)	6(17)	7(20)	7(20)	7(20)
Armored	4(12)	4(12)	4(12)	4(13)b/	4(13)b/	4(13)	4(13)	4(13)	4(13)	4(13)	4(13)
Subtotal	16(45)	19(57)	13(39)	14(42)	16(44)	16(46)	16(46)	16(46)	16(46)	16(46)	16(46)
Reserve Component Div											
Infantry	23a/(69)	5(15)	5(15)	5(15)	5(15)	5(15)	5(15)	5(15)	5(15)	5(15)	5(15)
Mechanized	-	9(3)	1(3)	1(3)	1(3)	1(3)	1(3)	1(3)	1(3)	1(3)	1(3)
Armored	6 (18)	2(6)	2(6)	2(6)	2(6)	2(6)	2(6)	2(6)	2(6)	2(6)	2(6)
Subtotal	29 (87)	8(24)	8(24)	8(24)	8(24)	8(24)	8(24)	8(24)	8(24)	8(24)	8(24)
Separate Brigades											
Active											
Infantry	3	3	4	4	4	4	4	4	4	4	4
Mechanized	2	2	-	-	-	-	-	0	0	0	0
Armored	1	1	-	1	1	1	1	1	1	1	1
Airborne	1	1	1	-	-	-	-	-	-	-	-
Subtotal	7	7	5	5	5	5	5	5	5	5	5
Reserve Component											
Airborne	-	1	1	-	-	-	-	-	-	-	-
Infantry	7	15	14	11	11	13	12	12	12	12	12
Mechanized	2	2	5	7	7	7	8	8	8	8	8
Armored	2	1	1	3	3	3	3	3	3	3	3
Subtotal	11	19	21	21	21	23	23	23	23	23	23
Cavalry Units											
Active											
ACCB	-	-	-	1	1	1	1	1	1	1	1
ACR	4	5	4	3	3	3	3	3	3	3	3
Reserve											
ACR	3	4	4	4	3	3	3	3	3	3	3
Special Forces Groups											
Active	7	7	4	4	3	3	3	3	3	3	3
Reserve	7	4	4	4	4	4	3	3	3	3	3
Surface-to-Surface Missile Bns											
Active											
Honest John/Little John/ Sergeant	33	30	18	4	2	1	1	1	1	1	1
Pershing	5	5	4	3	3	3	3	3	3	3	3
Lance	-	-	1	6	8	8	8	8	8	8	8
Reserve											
Honest John	8	8	8	5	3	3	-	-	-	-	-
Air Defense Batteries											
Active											
Hercules	52	50	52	29	29	23	23	23	23	23	23
Hawk	84	96	63	56	58	58	61	67	70	70	70
40mm Self-Propelled	2	16	-	-	-	-	-	-	-	-	-
Chaparral	-	-	22	24	26	26	30	30	30	30	30
Vulcan	-	-	32	32	37	37	37	37	37	38	38
Chaparral/Vulcan	-	-	4	6	6	6	6	6	6	6	6
Subtotal	138	162	173	147	156	150	157	163	166	167	167
Reserve Component											
40mm Self-Propelled	104	56	32	32	32	32	32	32	32	32	32
Chaparral	-	-	-	-	-	-	-	-	-	-	-
Vulcan	-	-	-	-	-	-	-	-	-	-	-
Subtotal	104	56	32	32	32	32	32	32	32	32	32
Aerial Fire Support Units											
Active	-	10	13	14	14	14	14	17	17	17	17
Reserve	-	-	-	3	3	3	4	5	5	5	5

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	FY64	FY68	FY72	FY75	FY76	FY77	FY78	FY79	FY80	FY81	FY82
Marine Corps Forces											
Divisions											
Active	3	4	3	3	3	3	3	3	3	3	3
Reserve	1	1	1	1	1	1	1	1	1	1	1
Total	4	5	4	4	4	4	4	4	4	4	4
Infantry Battalions											
Active c/	27	36	27	27	27	27	27	27	27	27	27
Reserve	9	9	9	9	9	9	9	9	9	9	9
Tank Battalions											
Active	3	4	3	3	3	3	3	3	3	3	3
Reserve	1	1	2	2	2	2	2	2	2	2	2
Artillery Battalions e/											
Active d/	12	16	12	9	9	9	9	9	9	9	9
Reserve e/	4	4	4	4	4 f/	4	4	4	4	4	4
Assault Amphibian Battalions											
Active	3	4	3	3	2	2	2	2	2	2	2
Reserve	1	1	1	1	1	1	1	1	1	1	1
Tracked Vehicle Battalions g/											
Active	0	0	0	0	1	1	1	1	1	1	1
Reserve	0	0	0	0	0	0	0	0	0	0	0
Aviation Squadrons h/											
Active	19	25	25	25	25	24	25	25	25	25	25
Reserve	5	6	8	8	8	8	9	9	9	9	9
Air Defense Batteries											
Active (HAWK)	16	16	6i/	6	6	6	6	6	6	6	6
Reserve (HAWK)	4	4	3i/	3	3	3	3	3	3	3	3

a/ 23 divisions were "non-priority" divisions that were manned at generally 50 percent strength and were in poor overall readiness conditions (based on manning, training, and equipment fill).
b/ The TRICAP Division was converted to an Armored Division in FY 1975. The Air Cavalry Combat Brigade (ACCB) was separated from the TRICAP division.
c/ One rifle company in 18 of these battalions is cadred at zero strength for FY 78-82.
d/ Marine Corps artillery battalions contain four firing batteries. In addition to the number of artillery battalions shown, there are 10 non-divisional, separate general support batteries in the Force Troops organizations.
e/ Marine Corps Reserve Artillery consists of three battalions of three batteries (105mm) each and one battalion of three batteries of 155mm self propelled howitzers. Additionally, there are three separate general support batteries.
f/ A 155mm towed battery added to one battalion of 105mm howitzers, giving it a total of four batteries.
g/ Includes H&S company, two tank companies, and two assault amphibian companies.
h/ Does not include fixed-wing aircraft squadrons except Light Observation Squadrons equipped with OV-10s.
i/ Two other active batteries and one reserve battery were in cadre status at zero strength.

GENERAL PURPOSE FORCES: NAVAL

	FY 68	FY 72	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81	FY 82
Aircraft Platforms									
Attack/Multi-purpose	15	14	13	13	13	13	12	12	12
NIMITZ, ENTERPRISE (CVAN/CVN)	1	1	2	2	3	3	4	4	4
FORRESTAL (CVA/CV-59) a/	7	8	8	8	8	8	7	7	7
MIDWAY (CVA-41) b/	2	3	3	3	2	2	1	1	1
HANCOCK (CVA-19)	5	2	–	–	–	–	–	–	–
ASW Carriers (CVS-9)	8	3	–	–	–	–	–	–	
Major Surface Combatants	339	260	189	187	194	203	200	208	214
Active Fleet	279	304c/ 225	159	157	166	175	176	184	190
Cruisers	33	28	26	27	28	28	30	30	30
Guided Missile Destroyers	37	37	38	39	39	39	33	33	30
Gun Destroyers	184	93	31	27	34	43	43	43	43
Guided Missile Frigates	–	6	6	6	7	7	12	19	29
Frigates	44	60	58	58	58	58	58	58	58
Naval Reserve Force	40	35	30	30	28	28	24	24	24
Gun Destroyers	16	31	30	30	28	28	24	24	24
Frigates	24	4	–	–	–	–	–	–	–
Patrol Combatants c/	15	16	13	5	1	1	5	6	6
Active Fleet	6	16	8	5	1	1	5	6	6
Naval Reserve Force	9	6	–	5	–	–	–	–	–
ASW Aircraft: Squadrons/AAI e/	82/1207	66/738	66/783	70/824	70/794	70/791	71/813	71/804	71/799
Active Ship-Based Fixed Wing									
S-3A (10)	-/-	-/-	-/-	9/122	12/160	12/170	12/170	12/163	12/160
A-7 (10; 7 FY 73-74)	18/254	16/226	12/117	1/8	-/1	-/-	-/-	-/-	-/-
Active Ship-based Helicopters									
SH-3H (8; 6 after FY 77)	-/-	-/-	-/-	3/35	4/52	6/66	9/79	11/98	12/106
SH-2A/D/F (8; 6 after FY 77) f/	8/165	8/101	8/87	7/76	7/66	5/30	2/10	1/6	-/-
LAMPS MK III g/	-/-	-/-	-/-	6/96	6/94	6/94	6/91	6/89	6/84
Active Land-Based Patrol Aircraft									
P-3C (9)	-/-	-/-	-/-	12/138	13/149	14/159	15/171	16/184	17/198
P-3A/B (9)	6/76	20/244	24/301	12/141	11/133	10/124	9/113	8/100	7/87
P-2 (12)	18/296	10/167	-/-	-/-	-/-	-/-	-/-	-/-	-/-
S-2 (12)	4/61	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Total Active ASW Aircraft	55/861	54/818	44/527	50/616	53/655	53/643	53/634	54/647	54/638
Total Reserve ASW Aircraft	27/346	22/308	22/211	16/149	17/154	17/136	17/142	17/149	17/149
Undersea Surveillance Systems									
NOSUS Facilities	19	20	22	22	22	20	20	20	20
Ship Surveillance Systems	–	–	2	2	2	2	2	7	10
Attack Submarines	112	114	92	73	76	77	80	85	90
SSN	79	83	54	63	67	72	76	81	86
SS	33	22	38	10	9	5	4	4	4
SSG	20	9	–	–	–	–	–	–	–
Amphibious Ship Forces	133	127	77	65	66	66	68	69	69
Active									
General Purpose Assault Ships (LHA)	–	–	–	1	2	2	4	5	5
Helicopter Assault Ships (LPH)	6	8	7	7	7	7	7	7	7
Other	127	109	70	54	54	54	54	54	54
Naval Reserve Force									
Other	–	–	3	3	3	3	3	3	3
Mine Countermeasures Force									
Ships	89	49	25	25	25	25	25	25	26
Active Fleet									
Ocean Minesweepers (MSO)	64	31	3	3	3	3	3	3	4
Other	21	21	–	–	–	–	–	–	–
Naval Reserve Force									
Ocean Minesweepers (MSO)	–	6	22	22	22	22	22	22	22
Other	13	12	–	–	–	–	–	–	–
Helicopters (MH)									
Active Fleet									
RH-53D	–	–	21	21	21	21	21	21	21

	FY 64	FY 68	FY 72	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81	FY 82
Underway Replenishment Ships	72	75	60	48	48	48	48	48	49	51
Active Fleet	72	75	59	40	39	39	39	39	40	42
Military Sealift Command (MSC)	-	-	1	8	9	9	9	9	9	9
Support Ships	138	137	82	73	70	56	57	61	62	66
Major Fleet Support Ships	41	35	22	20	20	19	20	20	20	20
Minor Fleet Support Ships h/										
Active Fleet	96	99	57	44	37	23	19	20	20	20
Naval Reserve Force	-	-	-	-	4	4	6	6	6	6
MSC	1	3	3	9	9	10	12	15	16	20
Active Ship Total (Program 2)	841	900	596	422	413	404	415	426	441	454
NRF Ship Total	62	53	53	60	59	57	59	55	55	55
MSC Ship Total (Program 2)	1	3	4	17	18	19	21	24	25	29
Navy Total (Active + NRF)	903	953	649	482	472	461	474	481	496	509

a/ Beginning in FY80, the decommissioning of CV-59 class carriers to undergo a major Service Life Extension Program (SLEP) will reduce the active force level by one carrier at the end of each fiscal year for the duration of the SLEP period.

b/ A third MIDWAY class ship, MIDWAY (CVA-41), was not included during FY66-70 while out of commission during modernization. FY78 and FY79 figures include one MIDWAY-class carrier without an active air wing.

c/ Includes the battleship NEW JERSEY.

d/ Includes only commissioned ships. Smaller vessels are not shown, such as the Naval Reserve Force Costal/ Riverine Squadron/Division forces.

e/ The number of Unit Equipment (UE) aircraft per squadron is shown in parentheses. Authorized Active Inventory (AAI) shown here is the inventory obejctive used for procurement planning (includes all combat mission, fleet support squadron, readiness air group, "pipeline" aircraft, but not attrition filler or inactive aircraft). In most cases, Total Active Inventory (TAI) exceeds AAI because of the attrition aircraft procured to offset estimated future losses.

f/ SH-3A/D/G/H ASW helicopters deploy in 6 UE squadrons to carrier task forces. The SH-3 data includes only aircraft in ASW squadrons and does not include fleet support squadrons and other support aircraft.

g/ Deployed singly or in pairs aboard surface combatants as LAMPS aircraft.

h/ Ships include all support ships not included as "Major Fleet Support Ships," some from amphibious support and mine force program elements.

TABLE 5 - GENERAL PURPOSE FORCES: TACTICAL AIR
(SQDNS/AAI) a/

	FY 64	FY 68	FY 72	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81	FY 82
AIR FORCE ACTIVE FORCE										
Attack/Fighter										
A-7	-/-	-/2	6/205	8/275	6/209	4/143	4/135	3/110	3/110	-/11
A-10	-/-	-/-	-/-	-/15	1/64	3/144	6/223	8/315	12/435	15/527
F-105	24/634	11/192	5/120	2/49	2/45	1/20	-/-	-/-	-/-	-/-
F-4 b/	3/117	48/1271	49/1366	50/1480	49/1455	48/1415	42/1263	37/1161	27/889	22/722
F-15	-/-	-/-	-/-	2/122	6/236	9/334	14/440	16/540	19/612	19/612
F-16	-/-	-/-	-/-	-/2	-/5	-/10	-/46	3/158	8/309	13/475
F-111	-/-	1/67	10/310	12/412	13/405	13/402	13/391	13/391	13/391	13/387
Other	59/1571	43/1239	3/79	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Subtotal	86/2322	103/2771	73/2080	74/2355	77/2429	78/2468	79/2498	80/2675	82/2746	82/2734
Electronic Warfare										
FB-66	-/-	2/54	2/54	-/-	-/-	-/-	-/-	-/-	-/-	-/-
EF-111A	-/-	-/-	-/-	-/2	-/2	-/2	-/2	-/2	1/20	2/40
DC-130 Tac Drone	-/-	-/-	-/-	1/6	1/6	1/6	1/10	1/10	1/10	1/10
Airborne Early Warning										
E-3A	-/-	-/-	-/-	-/-	2/10	3/18	3/24	3/30	3/34	3/34
Tanker										
ATCA	-/-	-/-	-/-	-/-	-/-	-/-	-/-	1/6	1/11	2/26
Reconnaissance										
RF-4	-/-	14/277	13/290	9/230	9/230	9/229	9/229	9/229	9/229	9/229
RF-101	8/141	7/139	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
DC-130 Recon Drone	-/-	-/-	-/2	1/7	1/4	1/4	1/4	1/3	1/2	1/2
Other	6/119	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Special Operations Forces										
C-130E/H	-/-	3/12	3/12	3/13	3/13	3/13	3/13	3/13	3/13	3/13
AC-130A/H	-/-	1/5	1/23	1/10	1/11	1/11	1/11	1/11	1/11	1/11
CH-53	-/-	-/-	1/11	-/-	-/-	-/-	-/-	-/-	-/-	-/-
CH-3/UH-1	-/-	2/27	2/28	1/11	1/15	1/15	1/15	1/15	1/15	1/15
AIR NATIONAL GUARD FORCE										
Attack/Fighter										
A-37	-/-	-/-	2/53	2/53	2/53	2/53	2/53	-/-	-/-	-/-
A-7	-/-	-/-	-/-	6/125	10/204	12/264	14/304	14/304	14/304	17/363
A-10	-/-	-/-	-/-	-/-	-/-	-/-	2/40	4/79	4/79	4/79
F-100	7/220	1/22	18/470	17/411	13/313	10/244	-/-	-/-	-/-	-/-
F-105	1/21	1/28	4/125	4/98	4/96	4/94	3/72	2/53	-/-	-/-
F-4 b/	-/-	-/-	1/20	2/40	2/40	2/40	9/178	10/212	13/271	13/270
Other	14/295	11/294	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Subtotal	22/536	13/344	25/668	31/727	31/706	30/675	30/647	30/648	31/654	34/712
Electronics Countermeasures										
EC-121S	-/-	-/4	1/9	1/9	1/9	1/9	-/-	-/-	-/-	-/-
Tanker										
KC-97	3/62	5/55	7/70	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Reconnaissance										
RF-4	-/-	-/-	3/54	7/139	7/139	7/139	7/139	7/139	7/139	7/139
RF-101	-/-	-/-	5/90	1/20	1/20	1/20	1/20	1/20	-/-	-/-
Other	13/224	9/165	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
AIR FORCE RESERVE FORCE										
Attack/Fighter										
A-37	-/-	-/-	4/90	4/100	4/100	4/100	4/100	3/66	-/-	-/-
A-10	-/-	-/-	-/-	-/-	-/-	-/-	-/-	1/20	4/79	4/79
F-105	-/-	-/-	1/24	3/72	3/72	3/72	3/72	-/-	-/-	-/-
F-4 b/	-/-	-/-	-/-	-/-	-/-	-/-	-/-	3/59	3/59	4/79
Subtotal	-/-	-/-	5/114	7/172	7/172	7/172	7/172	7/145	7/138	8/158
Special Operations Forces										
AC-130A	-/-	-/-	-/-	1/11	1/11	1/11	1/11	1/11	1/11	1/11
CH-3	-/-	-/-	-/-	1/7	1/7	1/7	1/7	1/7	1/7	1/7

TABLE 5 - GENERAL PURPOSE FORCES: TACTICAL AIR (Continued)
(SQDNS/AAI) a/

	FY 64	FY 68	FY 72	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81	FY 82
NAVY ACTIVE FORCE										
Attack/Fighter										
A-4	317655	28/590	3/162	-/56	-/51	-/39	-/41	-/32	-/25	-/11
A-6	2/51	10/141	12/197	12/204	12/195	12/182	12/185	12/188	12/188	12/188
A-7	-/-	13/270	27/434	27/492	27/465	25/418	24/395	24/417	24/414	24/414
A-18	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
F-4	13/271	19/373	22/429	15/282	14/265	10/191	8/152	8/148	6/113	4/78
F-8	15/448	10/274	4/102	-/-	-/-	-/-	-/-	-/-	-/-	-/-
F-14	-/-	-/-	-/-	11/181	12/254	14/291	16/300	16/304	18/342	20/378
F-18	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/3	-/4	-/8
Other	24/482	-/82	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Subtotal	85/1907	80/1730	68/1374	65/1215	65/1230	61/1121	60/1073	60/1092	60/1086	60/1077
Electronic Countermeasures										
EA-6	-	-	20	51	50	49	51	51	53	53
EA-3	23	21	17	14	17	17	17	17	17	17
EKA-3	-	28	34	-	-	-	-	-	-	-
ERA-3	-	-	-	4	5	5	5	5	5	5
EA-4F	-	-	-	4	4	3	2	-	-	-
Airborne Early Warning										
E-1	82	73	45	3	3	-	-	-	-	-
E-2	17	52	49	67	75	74	73	76	77	79
Tanker										
KA-6	-	-	41	59	61	61	61	61	60	56
KA-3	-	50	5	-	-	-	-	-	-	-
KC-130	2	1	1	1	1	1	1	1	1	1
Reconnaissance										
RF-9	3	-	-	-	-	-	-	-	-	-
RF-8	59	47	18	21	27	23	23	-	-	-
RF-4	-	1	-	-	-	-	-	-	-	-
RA-3	24	18	12	1	1	1	1	1	-	-
RA-5	24	66	65	26	18	18	18	18	-	-
RF-14	-	-	-	-	-	4	11	35	43	43
NAVY RESERVE FORCE										
Attack/Fighter										
A-4	12/239	14/269	4/58	1/34	1/34	-/18	-/18	-/18	-/18	-/18
A-7	-/-	-/-	2/27	5/61	5/69	6/82	6/82	6/82	6/82	6/82
F-4	-/-	-/-	-	4/45	4/56	4/56	4/55	4/54	4/54	4/54
F-8	1/12	5/86	4/42	-	-	-	-	-	-	-
Other	9/145	-/-	2/10	-	-	-	-	-	-	-
Subtotal	22/396 c/	19/355 c/	12/137	10/140	10/159	10/156	10/155	10/154	10/154	10/154
Electronic Countermeasures										
EA-6	-/-	-/-	-	-/-	-/-	1/5	1/5	2/9	2/9	2/9
Airborne Early Warning										
E-1	-/-	-/-	4/14	2/8	1/5	-/-	-/-	-/-	-/-	-/-
E-2	-/-	-/-	-/-	-/-	1/5	2/10	2/10	2/10	2/10	2/10
Tanker										
KA-3	-/-	-/-	2/8	2/14	2/14	2/10	2/10	1/10	1/5	1/5
Reconnaissance										
RF-8	-/-	6	2/8	2/10	2/10	2/10	2/10	2/10	2/10	2/10
RF-9	7	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Riverine 9/										
H-1 e/	-/-	-/-	-/-	-/-	2/16	2/16	2/16	2/16	2/16	2/16
Combat Support d/										
H-3 f/	-/-	-/-	-/-	1/7	1/7	1/7	1/7	1/7	1/7	1/7

SECRET

TABLE 5 - GENERAL PURPOSE FORCES: TACTICAL AIR (Continued)
(SQDNS/AAI) a/

	FY 64	FY 68	FY 72	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81	FY 82
MARINE ACTIVE FORCE										
Attack/Fighter										
A-4	12/288	7/173	6/142	5/107	5/108	5/108	5/108	5/108	5/108	5/108
A-6	1/5	5/83	6/99	5/85	5/85	5/86	5/87	5/89	5/89	5/88
AV-8A	-/-	-/-	1/13	3/77	3/77	3/80	3/72	3/70	3/68	3/63
F-4	6/110	15/323	12/248	12/205	12/207	12/207	12/202	12/201	12/193	10/161
F-18	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/5	2/30
Other	9/198	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Subtotal	26/601	27/579	26/502	25/473	25/477	25/481	25/469	25/468	25/463	25/445
Electronic Countermeasures										
EA-6	-	9	24	21	17	17	18	18	18	18
EF-10	26	18	-	-	-	-	-	-	-	-
Tanker										
KC-130	42	42	43	43	43	43	43	43	43	43
Reconnaissance										
RF-8	32	-	-	-	-	-	-	-	-	-
RF-4	-	28	24	24	24	24	24	24	24	24
MARINE RESERVE FORCE										
Attack/Fighter										
A-4 c/	**	**	5/81	5/81	5/82	5/82	5/82	5/82	5/82	5/76
F-8 c/	**	**	2/31	-/-	-/-	-/-	-/-	-/-	-/-	-/-
F-4 c/	**	**	-/-	2/31	2/28	2/28	2/27	2/27	2/27	2/27
Other c/	**	**	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Subtotal	**	**	7/117	7/112	7/110	7/110	7/109	7/109	7/109	7/103
Tanker										
KC-130	-	-	-	7	7	7	7	7	7	7
TOTALS										
Active Attack/Fighter	199/4830	210/5098	167/3956	164/4043	167/4126	164/4070	164/4040	165/4235	167/4295	167/4256
Reserve Attack/Fighter	44/932	32/699	49/1036	55/1151	55/1147	54/1113	54/1083	54/1056	55/1055	59/1127
Active/Reserve Attack/ Fighter	243/5762	242/5797	216/4992	219/5194	222/5273	218/5183	218/5123	219/5291	222/5350	226/5383

a/ AAI (Authorized Active Inventory) is the inventory objective used for procurement planning and does not include attrition filler and inactive aircraft.
b/ Includes F-4s controlled by the Aerospace Defense Command, but which are part of tactical air units.
c/ During FY 64 and FY 68, the Navy and Marine Reserves shared a common inventory of aircraft.
d/ Operationally assigned to reserve helicopter wing (ASW Forces)
e/ H-1 mission is support of Riverine Forces (Surface Forces)
f/ H-3 mission is essentially combat SAR (Support of Tactical Air Wings)

SECRET

TABLE 6 - GENERAL PURPOSE FORCES: MOBILITY
(Squadrons/AAI) a/

	FY 64	FY 68	FY 72	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81	FY 82
Strategic Airlift a/										
Active Air Force										
C-5A	-/-	-/-	4/62	4/77	4/77	4/76	4/76	4/76	4/76	4/76
C-141	-/6	14/266	13/274	13/280	13/277	13/279	13/279	13/279	13/279	13/279
Air Force Reserve										
C-5A Assoc. Units	-/-	-/-	2/-	4/-	4/-	4/-	4/-	4/-	4/-	4/-
C-141 Assoc. Units	-/-	-/-	13/-	13/-	13/-	13/-	13/-	13/-	13/-	13/-
Sealift Force b/										
Ships, Active, in Comm										
Tankers	25	26	24	7	7	7	7	7	7	7
Cargo & Stores Ships c/	38	41	33	6	6	6	6	6	6	6
Other	38	63	20	-	-	-	-	-	-	-
Controlled Fleet Charters										
Tanker d/	-	-	1	14	14	14	14	14	14	14
Cargo	-	-	1	21	21	21	21	21	21	21
National Defense Reserve										
Fleet e/	255	490	100	139	139	139	139	139	139	139
Tactical Airlift										
Active Air Force										
C-130	28/506	27/502	17/342	15/282	15/282	15/283	15/283	15/283	15/283	15/283
Other	39/684	17/352	2/25	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Air Force Reserve										
C-130	-/-	1/8	17/125	14/142	12/125	11/117	11/117	11/117	11/117	11/117
C-123	3/53	-/-	2/17	4/70	4/70	4/70	4/70	4/70	4/70	4/70
C-7A	-/-	-/-	-/-	2/35	2/35	2/35	2/35	2/35	2/35	2/35
Other	42/673	37/422	6/54	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Air National Guard										
C-130	-/-	-/-	11/84	16/148	17/157	18/168	18/168	18/168	18/168	18/168
C-7A	-/-	-/-	-/-	1/18	1/18	1/18	1/18	1/18	1/18	1/18
Other	26/129	24/216	8/71	-/-	-/-	-/-	-/-	-/-	-/-	-/-
Active Navy Flt Tac Sup	-/86	-/86	-/74	6/64	6/64	5/62	5/61	5/61	5/52	5/34
Active Marine Corps Tac Sup	-/34	-/30	-/60	-/23	-/23	-/-	-/-	-/-	-/-	-/-
Navy & Marine Corps Res. Tac Sup	-/72	-/72	-/48	5/33	6/36	2/6	2/6	2/6	2/6	2/6
Logistical Helicopter Airlift										
Active Army (CH-47/CH-54) f/	**	**	-/341	-/388	-/388	-/388	-/388	-/388	-/388	-/388
Active Marine Corps (CH-53)	-/2	-/10	-/196	-/142	-/142	-/142	-/142	-/142	-/142	-/142
Army Reserve/National Guard (CH-47/CH-54) f/	**	**	-/124	-/145	-/145	-/145	-/145	-/145	-/145	-/145
Marine Corps Reserve (CH-53)	-/-	-/-	-/18	-/18	-/18	-/18	-/18	-/18	-/18	-/18

a/ The aircraft force structure is depicted in the format, squadrons/AAI except for the C-5A aircraft figures which are TAI (Total Active Inventory). AAI is the inventory objective used for procurement planning and does not include attrition and inactive aircraft.
b/ Does not include amphibious assault ships which are depicted under Naval Forces.
c/ Excluded for FY 75 - 82 are 8 Landing Ships (Tank) and for FY 1976 six cargo ships (seven in FY 1977-82 in inactive reserve which could be activated in a contingency.
d/ Excludes 9 time/voyage charters.
e/ The useful NDRF ships as defined by the Navy and Department of Commerce.
f/ Information not available (**) for FY 1964 and FY 1968.

APPENDIX B

TABLE 1

Department of Defense

General and Flag Officer Strengths

Actual	General and Flag Officer Strengths	General and Flag Officer Per 10,000 Total Military
1960	1,260	5.1
1961	1,254	5.0
1962	1,303	4.6
1963	1,292	4.8
1964	1,294	4.8
1965	1,287	4.8
1966	1,320	4.3
1967	1,334	4.0
1968	1,352	3.8
1969	1,336	3.9
1970	1,339	4.4
1971	1,330	4.9
1972	1,324	5.7
1973	1,291	5.7
1974	1,249	5.8
1975	1,199	5.6
1976	1,184	5.7
TQ	1,174	5.7
Programmed*		
1977	1,165	5.6
1978	1,141	5.5
1979	1,141	5.4

* FY 1978 President's Budget

TABLE 2

Department of Defense

Officer and Enlisted Strength

	Officer Strength (000s) 1/	Enlisted to Officer Ratio
Actual		
1960	317	6.8
1961	315	6.9
1962	343	7.2
1963	334	7.1
1964	337	7.0
1965	339	6.8
1966	349	7.9
1967	384	7.8
1968	416	7.5
1969	419	7.3
1970	402	6.6
1971	371	6.3
1972	336	5.9
1973	321	6.0
1974	302	6.2
1975	292	6.3
1976	281	6.4
19TQ	279	6.5
Programmed 2/		
1977	277	6.6
1978	275	6.6
1979	274	6.7

1/ Includes all officers on extended active duty.
2/ FY 1978 President's Budget.

TABLE 3

Department of Defense

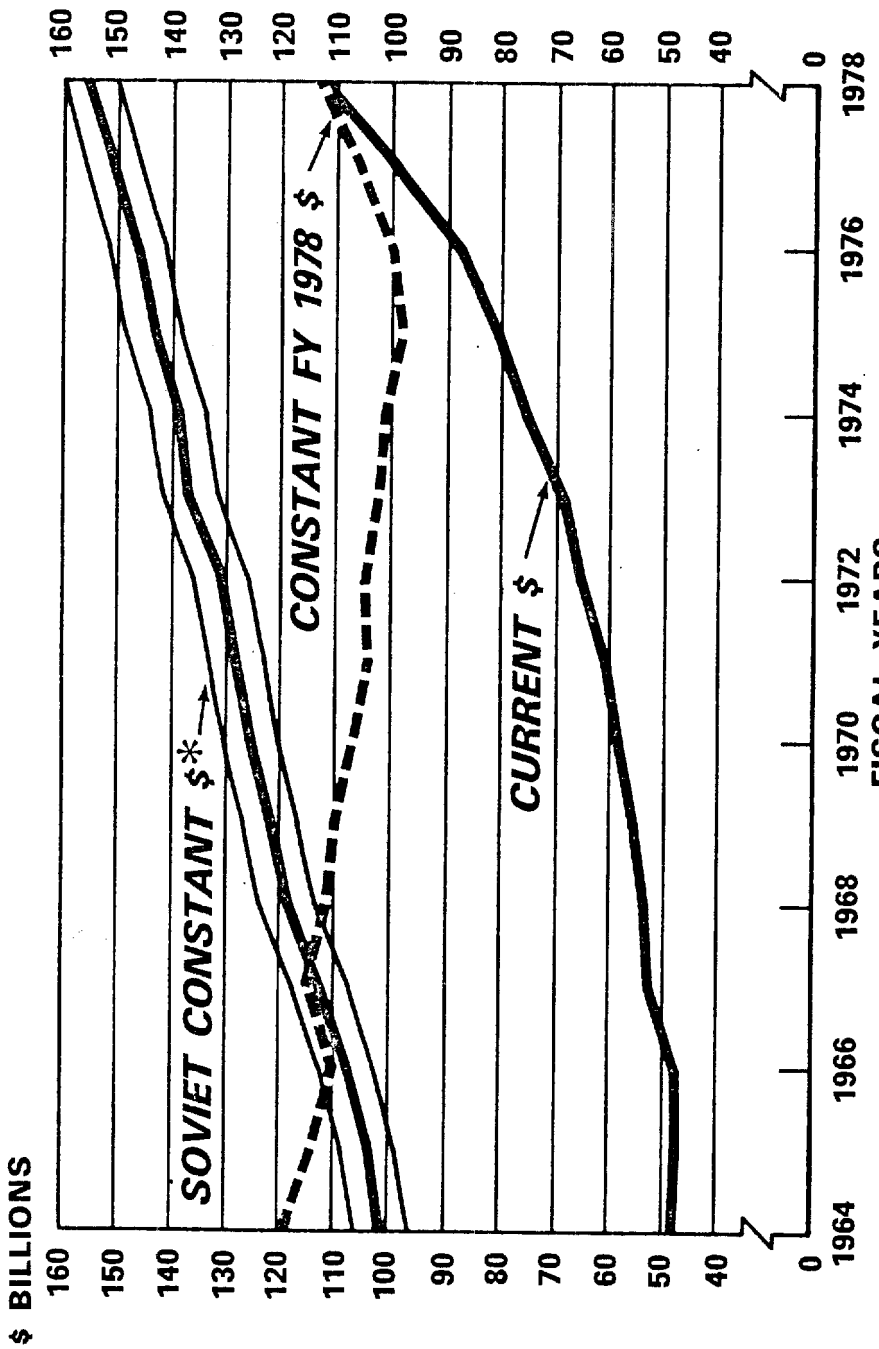
MANPOWER LEVELS

Actual	Active Military 1/	Civilian 2/	Total
1960	2,476	1,230*	3,706*
1961	2,494	1,215*	3,709*
1962	2,808	1,244	4,052
1963	2,700	1,226	3,926
1964	2,687	1,176	3,863
1965	2,655	1,155	3,810
1966	3,094	1,261	4,355
1967	3,377	1,398	4,775
1968	3,547	1,393	4,940
1969	3,460	1,391	4,851
1970	3,066	1,265	4,331
1971	2,714	1,190	3,904
1972	2,322	1,159	3,481
1973	2,252	1,100	3,352
1974	2,161	1,109	3,270
1975	2,127	1,078	3,205
1976	2,081	1,047	3,128
TQ	2,083	1,042	3,125
Programmed 3/			
1977	2,088	1,036	3,124
1978	2,090	1,031	3,121
1979	2,096	1,036	3,132

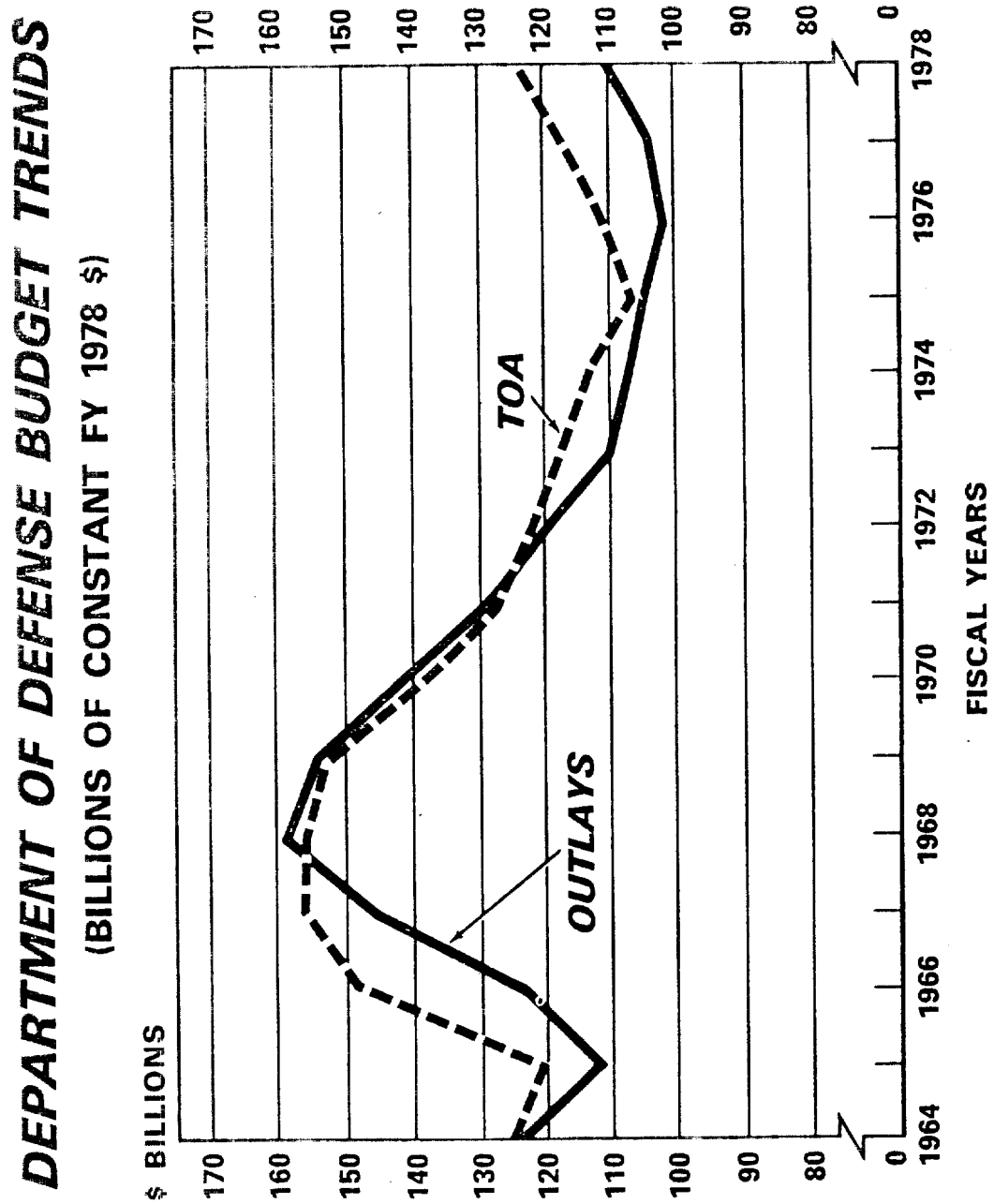
1/ Excludes military personnel on active duty who are paid from Civil Works and Reserve Components appropriations.
2/ Direct and indirect hire. Excludes Civil Functions, special youth employment programs, and NSA employees.
3/ FY 1978 President's Budget.

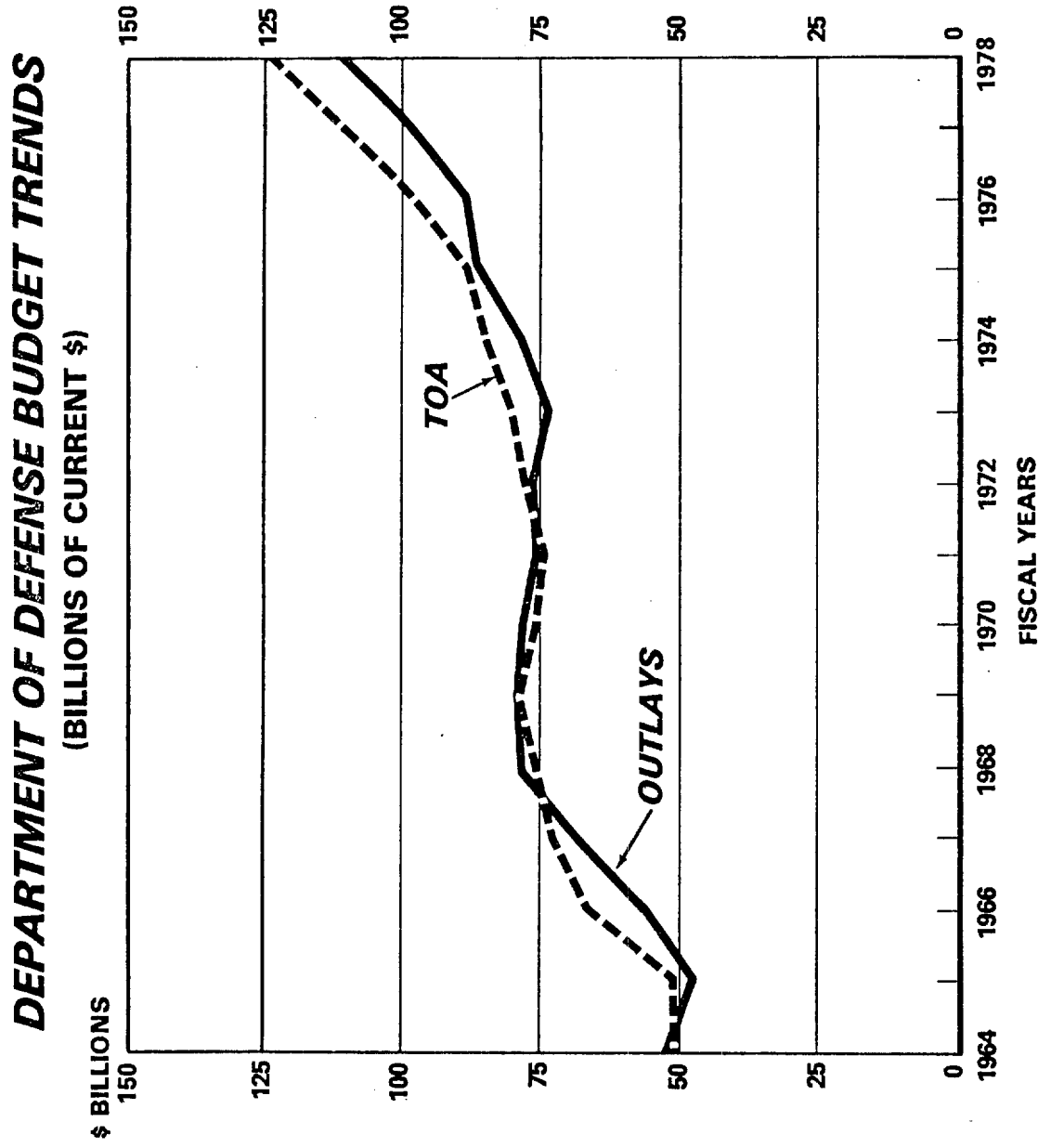
* Estimated

DEPARTMENT OF DEFENSE
BASELINE FORCES BUDGET TRENDS
(TOA — $ BILLIONS)



* SOURCE: BASED ON INTELLIGENCE DATA FOR SOVIET FORCES ESTIMATED IN CONSTANT U. S. DOLLARS.





TOTAL AND BASELINE PROGRAM TRENDS

($MILLIONS, CONSTANT FY 1978 PRICES)

TOA	1973	1974	1975	1976	1977	1978
Total Obligational Authority	$117,036	$113,039	$106,615	$110,848	$116,862	$123,150
Prior-year Shipbuilding Programs	125	608	1,216	-1,337	-1,623	-566
Comparable TOA	117,161	113,647	107,831	109,471	115,239	122,584
Non-baseline Items:						
Military Retired Pay	6,857	7,314	7,784	8,232	8,746	9,058
Military Assistance	1,611	4,529	1,873	1,518	1,120	1,030
Military Functions, SEA	7,910	1,769	319			
Naval Petroleum Reserves			84	136		
TOTAL,Non-baseline Items	16,378	13,612	10,060	9,886	9,866	10,088
Baseline TOA, Constant Prices	100,783	100,035	97,771	99,585	105,373	112,496

DEPARTMENT OF DEFENSE

SUMMARY OF SELECTED ACTIVE MILITARY FORCES

	ACTUAL JUNE 30, 1964	ACTUAL JUNE 30, 1976	ESTIMATED SEPT 30, 1977	ESTIMATED SEPT 30, 1978
STRATEGIC FORCES:				
Intercontinental Ballistic Missiles:				
MINUTEMAN	600	1000	1000	1000
TITAN II	108	54	54	54
POLARIS-POSEIDON MISSILES	336	656	656	656
Strategic Bomber Squadrons	78	26	24	24
Manned Fighter Interceptor Squadrons	40	6	6	6
Army Air Defense Firing Batteries	107	-0-	-0-	-0-
GENERAL PURPOSE FORCES				
Land Forces:				
Army Divisions	16 1/3	16	16	16
Marine Corps Divs.	3	3	3	3
Tactical Air Forces:				
Air Force Wings	21	26	26	26
Navy Attack Wings	15	13	13	12
Marine Corps Wings	3	3	3	3
Naval Forces:				
Attack & Antisubmarine Carriers	24	13	13	13
Nuclear Attack Submarines	19	63	67	72
Other Warships	370	177	171	172
Amphibious Assault Ships	133	62	63	63
AIRLIFT & SEALIFT FORCES:				
Strategic Airlift Sqdns:				
C-5A	-0-	4	4	4
C-141	-0-	13	13	13
Troopships, Cargo Ships and Tankers	100	48	48	48

DEPARTMENT OF DEFENSE BUDGET

DEFENSE EMPLOYMENT OUTLOOK

(END YEAR — IN THOUSANDS)

	FY 64	FY 68	FY 76	FY 77	FY 77	FY 78	CHANGE FY 77-78
DIRECT HIRE CIVILIANS							
Army	360	462	329	325	319	319	-
Navy/Marine Corps	332	419	311	308	309	306	-3
Air Force	305	331	248	246	242	241	-1
Def. Agencies	38	75	72	77	78	78	-
Total D.H. Civilians	1,035	1,287	960	956	948	944	-4
INDIRECT HIRE CIVILIANS							
Army	93	80	61	60	60	59	-1
Navy/Marine Corps	14	14	10	10	11	11	-
Air Force	33	26	14	14	15	15	-
Def. Agencies	-	-	1	1	2	2	-
Total I.H. Civilians	140	119	86	85	88	87	-1
TOTAL CIVILIANS	1,175	1,406	1,046	1,041	1,036	1,031	-5
MILITARY							
Army	972	1,570	779	782	789	790	+1
Navy	667	765	525	528	536	536	-
Marine Corps	190	307	192	190	192	192	-
Air Force	856	905	585	583	571	572	+1
Total Military	2,685	3,547	2,081	2,083	2,088	2,090	+2
TOTAL - MILITARY & CIVILIANS	3,860	4,953	3,127	3,124	3,124	3,121	-3
Defense Related Industry	2,280	3,173	1,690	1,710	1,845	2,062	+217
TOTAL DEFENSE MANPOWER	6,140	8,126	4,817	4,834	4,969	5,183	+214

DEPARTMENT OF DEFENSE BUDGET

DEFENSE BUDGET TOTALS

($ IN BILLIONS)

CURRENT DOLLARS	FY 1976 ACTUAL	FY 1977 ESTIMATE	FY 1978 ESTIMATE	INCREASE FY1977-78
Total Obligational Authority (TOA)	97.5	110.2	123.1	13.0
Budget Authority (BA)	102.2	106.6	120.5	13.8
Outlays	88.5	98.3	110.1	11.8
CONSTANT FY 1978 DOLLARS				
Total Obligational Authority (TOA)	110.8	116.9	123.1	6.3
Budget Authority (BA)	116.2	113.1	120.5	7.4
Outlays	101.0	104.6	110.1	5.5

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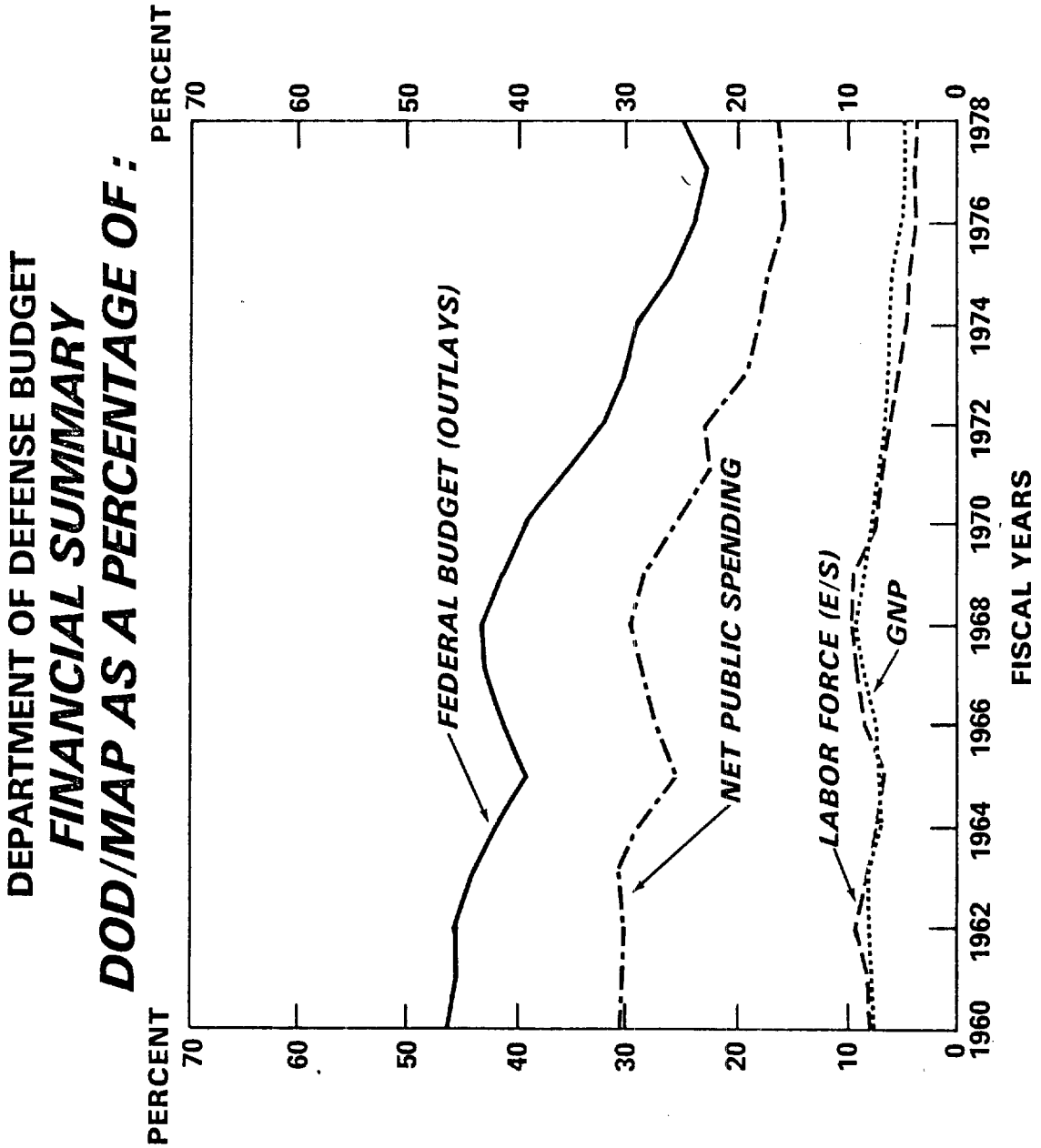
U.S. DEPARTMENT OF DEFENSE BUDGET

FINANCIAL SUMMARY

	FY 1964	FY 1968	FY 1975	FY 1977	FY 1978
DOD/MAP as Percentage:					
Federal Budget (Outlays)	42.9%	43.6%	24.1%	23.9%	25.0%
Gross National Product	8.2%	9.4%	5.5%	5.4%	5.4%
Labor Force	8.3%	9.9%	5.0%	5.0%	5.1%
Net Public Spending	28.6%	29.7%	15.9%	16.0%	16.5%


DEPARTMENT OF DEFENSE BUDGET
FINANCIAL SUMMARY
DOD/MAP AS A PERCENTAGE OF :
PERCENT
70
60
50
40
30
20
10
0
1960
1962
1964
1966
1968
1970
1972
1974
1976
1978
FISCAL YEARS
FEDERAL BUDGET (OUTLAYS)
NET PUBLIC SPENDING
LABOR FORCE (E/S)
GNP

U.S. Public Spending, $ Millions, Fiscal Years
(All Units of Government -- Federal, State and Local)

Fiscal Year	DoD/MAP	National Defense	Veterans, Space, International	Interest	Social & Economic	Agency Total	Federal Undistributed	Net Total	Federal Budget (Unified)	State & Local Government	Less Grants-In-Aid	Net Total US Public Spending
1939	(1,075)	1,075	582	950	14,334	16,941	-	16,941	8,841	9,000	-900	15,941
1940	(1,498)	1,490	630	1,037	14,881	18,038	-225	17,813	9,456	9,229	-872	17,813
1941	(6,006)	6,046	715	1,110	14,376	22,247	-260	21,987	13,634	9,200	-847	21,987
1942	(23,570)	24,937	1,483	1,259	16,043	43,722	-310	43,412	35,114	9,190	-892	43,412
1943	(62,660)	65,660	1,576	1,779	17,962	86,977	-358	86,619	78,533	9,000	-914	86,619
1944	(75,914)	78,080	1,375	2,544	17,739	99,734	-502	99,232	91,280	8,863	-911	99,232
1945	(80,356)	81,858	2,146	3,541	14,112	101,657	-626	101,031	92,690	9,200	-859	101,031
1946	(43,549)	41,553	4,450	4,678	15,525	66,206	-814	65,392	55,183	11,028	-819	65,392
1947	(12,499)	11,601	12,160	4,885	19,187	47,833	-904	46,929	34,532	14,000	-1,603	46,929
1948	(12,434)	7,845	11,042	5,087	22,865	46,839	-994	45,845	29,773	17,684	-1,612	45,845
1949	(12,159)	11,761	12,726	5,364	28,375	58,226	-1,068	57,158	38,834	20,200	-1,876	57,158
1950	(12,025)	12,405	13,586	5,692	32,632	64,315	-1,184	63,131	42,597	22,787	-2,253	63,131
1951	(20,667)	21,775	9,347	5,557	32,177	68,856	-1,197	67,659	45,546	24,400	-2,287	67,659
1952	(41,250)	43,261	8,254	5,985	35,183	92,683	-1,297	91,386	67,721	26,098	-2,433	91,386
1953	(47,512)	49,864	7,008	6,576	39,151	102,599	-1,417	101,182	76,107	27,910	-2,835	101,182
1954	(43,621)	46,304	6,376	6,406	40,686	99,772	-1,237	98,535	70,890	30,701	-3,056	98,535
1955	(37,386)	39,862	7,055	6,501	46,969	100,387	-1,361	99,026	68,509	33,724	-3,207	99,026
1956	(37,994)	39,754	7,525	6,818	50,853	104,950	-1,507	103,443	70,460	36,711	-3,728	103,443
1957	(40,188)	42,266	8,534	7,244	56,886	114,930	-1,859	113,071	76,741	40,375	-4,045	113,071
1958	(41,403)	43,821	8,898	7,561	64,151	124,431	-1,943	122,488	82,575	44,851	-4,938	122,488
1959	(43,703)	45,936	9,055	7,771	74,007	136,769	-2,241	134,528	92,104	48,887	-6,463	134,528
1960	(43,110)	45,219	9,112	9,048	76,226	139,605	-2,526	137,079	92,223	51,876	-7,020	137,079
1961	(44,643)	46,596	10,135	8,911	83,699	149,341	-2,456	146,885	97,795	56,201	-7,111	146,885
1962	(48,253)	50,376	11,742	9,177	90,341	161,636	-2,525	159,111	106,813	60,206	-7,908	159,111
1963	(49,549)	51,548	12,523	10,066	95,565	169,702	-3,011	166,691	111,311	63,977	-8,597	166,691
1964	(50,786)	52,738	14,370	10,588	102,942	180,638	-2,893	177,745	118,584	69,302	-10,141	177,745
1965	(47,098)	48,581	15,756	10,984	109,913	185,234	-3,162	182,072	118,430	74,546	-10,904	182,072
1966	(55,182)	55,856	17,281	11,724	123,287	208,148	-3,613	204,535	134,652	82,843	-12,960	204,535
1967	(68,315)	69,101	17,923	12,822	141,091	240,937	-4,573	236,364	158,254	93,350	-15,240	236,364
1968	(78,027)	79,409	17,135	13,881	157,680	268,105	-5,460	262,645	178,833	102,411	-18,599	262,645
1969	(78,661)	80,207	16,589	15,690	174,080	286,566	-5,545	281,021	184,548	116,728	-20,255	281,021
1970	(77,880)	79,284	16,937	17,960	196,288	310,469	-6,567	303,902	196,588	131,332	-24,018	303,902
1971	(75,545)	76,807	17,240	19,257	227,368	340,672	-8,427	332,245	211,425	150,674	-29,854	332,245
1972	(75,957)	77,356	18,823	20,225	254,542	370,946	-8,137	362,809	231,876	166,873	-35,940	362,809
1973	(73,828)	75,072	19,138	22,813	278,944	395,967	-12,318	383,649	246,526	181,086	-43,963	383,649
1974	(78,444)	78,569	21,133	28,072	322,629	450,403	-16,651	433,752	268,392	211,400	-46,040	433,752
1975	(86,019)	86,585	23,908	30,974	369,343	510,810	-14,076	496,734	324,601	221,856	-49,723	496,734
1976	(91,200)	92,759	27,890	34,835	416,672	572,156	-15,208	556,948	373,535	243,200	-59,787	556,948
1977	(100,100)	101,129	27,359	41,297	455,770	625,555	-18,841	606,714	394,237	273,000	-60,523	606,714

Source: The Budget of the United States Government - FY 197

DEPARTMENT OF DEFENSE BUDGET

FINANCIAL SUMMARY BY MAJOR PROGRAM

(BILLIONS OF $)

MILITARY PROGRAM	CURRENT DOLLARS TOTAL OBLIGATIONAL AUTHORITY FY 1976	FY 1977	FY 1978
Strategic Forces	$ 7.3	$ 9.8	$11.0
General Purpose Forces	33.0	38.2	44.3
Intelligence & Communications	6.7	7.5	8.2
Airlift & Sealift	1.4	1.5	1.7
Guard & Reserve Forces	5.4	6.0	7.2
Research & Development	8.7	10.1	11.1
Central Supply & Maintenance	9.8	11.1	11.8
Training, Medical, other Gen. Pers. Activ.	21.6	22.7	24.3
Administration & Assoc. Activities	2.1	2.1	2.3
Support of Other Nations	1.6	1.3	1.3
TOTAL	$97.5	$110.2	$123.1

DEPARTMENT OF DEFENSE BUDGET

FINANCIAL SUMMARY
BY MAJOR PROGRAM — CONSTANT PRICES
(BILLIONS OF $)

MILITARY PROGRAM	CONSTANT FY 1978 DOLLARS TOTAL OBLIGATIONAL AUTHORITY FY 1976	FY 1977	FY 1978
Strategic Forces	$8.3	$10.4	$11.0
General Purpose Forces	37.5	40.5	44.3
Intelligence &Communications	7.7	8.0	8.2
Airlift & Sealift	1.6	1.6	1.7
Guard &Reserve Forces	6.1	6.4	7.2
Research & Development	9.8	10.7	11.1
Central Supply & Maintenance	11.2	11.8	11.8
Training, Medical, other Gen. Pers. Activ.	24.4	24.1	24.3
Administration &Assoc. Activities	2.4	2.2	2.3
Support of Other Nations	1.8	1.3	1.3
TOTAL	$110.8	$116.9	$123.1

DEPARTMENT OF DEFENSE BUDGET

FINANCIAL SUMMARY BY APPROPRIATION CATEGORY

(BILLIONS OF $)

APPROPRIATION TITLE	CURRENT DOLLARS TOTAL OBLIGATIONAL AUTHORITY FY 1976	FY 1977	FY 1978
Military Personnel	$25.4	$26.2	$27.7
Retired Pay	7.3	8.2	9.1
Operation and Maintenance	28.8	32.2	35.0
Procurement	21.3	27.9	35.1
RDT&E	9.5	10.6	12.1
Military Construction	2.2	2.4	1.5
Family Housing	1.3	1.3	1.4
Civil Defense	.1	.1	.1
Revolving and Management Funds	.1	.2	.2
Military Assistance	1.4	1.1	1.0
TOTAL	$97.5	$110.2	$123.1

DEPARTMENT OF DEFENSE BUDGET
FINANCIAL SUMMARY
BY APPROPRIATION CATEGORY - CONSTANT PRICES
(BILLIONS OF $)

CONSTANT FY 1978 DOLLARS
TOTAL OBLIGATIONAL AUTHORITY

APPROPRIATION TITLE	FY 1976	FY 1977	FY 1978
Military Personnel	$28.5	$27.8	$27.7
Retired Pay	8.2	8.7	9.1
Operation & Maintenance	33.2	34.2	35.0
Procurement	24.4	29.6	35.1
RDT & E	10.8	11.2	12.1
Military Construction	2.5	2.5	1.5
Family Housing	1.5	1.3	1.4
Civil Defense	0.1	0.1	0.1
Revolving and Management Funds	0.2	0.2	0.2
Military Assistance	1.5	1.1	1.0
TOTAL	$110.8	$116.9	$123.1

ANNUAL INFLATION RATES

	CONSUMER PRICE INDEX	WHOLESALE PRICE INDEX	GNP DEFLATOR	INFLATION ON DEFENSE BUDGET: OUTLAYS	INFLATION ON DEFENSE BUDGET: TOA
FY 1973 TO FY 1974	9.0%	16.3%	8.0%	9.0%	9.9%
FY 1974 TO FY 1975	11.1%	16.9%	10.9%	11.7%	9.6%
FY 1975 TO FY 1976	7.1%	5.3%	6.6%	7.1%	6.7%
FY 1976 TO FY 1977 1/	6.4%	5.5%	6.6%	7.1%	7.2%
FY 1977 TO FY 1978	5.4%	5.4%	6.0%	6.4%	6.1%
COMPOUND ANNUAL AVERAGE, FY 1973-1978	7.4%	9.3%	7.2%	7.8%	7.4%

1/ 15 months

FY 1978 DEPARTMENT OF DEFENSE BUDGET

FY 1977 SUPPLEMENTALS

($ THOUSANDS)

PURPOSE	SUPPLEMENTALS
Civilian and Military Pay Raises October 1, 1976	1,167,401
Wage Board Pay Increases	306,537
Per Diem	113,900
TOTAL	**1,587,838**
TITLE	
Military Personnel	791,865
Operation and Maintenance	730,801
Research, Development, Test & Evaluation	43,706
Family Housing	5,512
Civil Preparedness, DCPA	954
Military Assistance Program	15,000
TOTAL	**1,587,838**
COMPONENT	
Army	622,903
Navy	383,223
Air Force	458,507
Defense Agencies	101,692
Defense-wide	5,559
Civil Preparedness, DCPA	954
Military Assistance Program	15,000
TOTAL	**1,587,838**

FY 1978 DEPARTMENT OF DEFENSE BUDGET

SCHEDULING OF BUDGET REQUESTS

(TOA, $ MILLIONS)

	DOD APPROPRIATIONS ACT	MIL CON/FAMILY HOUSING	CIVIL DEFENSE	MILITARY ASSISTANCE	GRAND TOTAL
FY 1977					
Appropriations (TOA) Requested with Budget Transmitted in January 1977	105,428	3,612	83	1,066	110,190
FY 1978					
Appropriations (TOA) Requested with Budget Transmitted in January 1977	116,757	2,888	90	1,030	120,766
Appropriations to be Requested at a later date, but included in Defense Budget Estimate:					
October 1, 1977 Civilian and Military Pay Raise	(2,050)	(6)	(1)		(2,057)
FY 1978 Wage Board Raises	(259)	(10)			(269)
Proposed Legislation:					
Retirement Modernization	(25)				(25)
Military Trailer Allowance	(8)				(8)
Family Separation Allowance	(29)				(29)
Retired Family Protection Plan	(7)				(7)
Quarters Allowance	(10)				(10)
Officer Pers Management Act	(13)				(13)
Dual Compensation	(-30)				(-30)
Cadet/Midshipmen Pay	(-4)				(-4)
Total Appropriations to be Requested Later	2,367	16	1		2,384
Total FY 1978 Budget Estimate	119,125	2,904	91	1,030	123,150

LONG-RANGE FORECASTS AND PAY/PRICE ASSUMPTIONS

	FY 1978	FY 1979	FY 1980	FY 1981	FY 1982
TOA($ BILLIONS):					
Military Assistance	$1.0	$1.0	$1.0	$1.0	$1.0
Military Retired Pay	9.1	9.8	10.6	11.3	12.1
Other Military Functions	113.0	124.6	134.2	144.4	153.7
Total, Current Prices	123.1	135.4	145.8	156.7	166.8
Total, Constant (FY 1978) Prices	123.1	128.8	132.3	135.7	138.6
Outlays ($ Billions)					
Military Assistance	$0.6	$0.5	$0.5	$0.4	$0.4
Military Retired Pay	9.1	9.8	10.6	11.3	12.1
Other Military Functions	100.4	111.0	122.7	133.9	143.9
Outlays, Current Prices	110.1	121.3	133.8	145.6	156.4
Outlays Constant (FY 1978) Prices	$110.1	$115.1	$120.9	$125.7	$129.2
Composite Pay/Price Assumptions (FY 1978=100):					
TOA	100.0	105.1	110.2	115.4	120.4
Outlays	100.0	105.4	110.6	115.9	121.1

SECRET

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