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WARSAW PACT FORCES FOR
OPERATIONS IN EURASIA

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WARSAW PACT FORCES FOR OPERATIONS IN EURASIA

SUMMARY

Soviet forces for operations in Eurasia have changed considerably in structure, weaponry, and strategic doctrine since 1945, when the army constituted the main element of Soviet military power. The Soviets have assimilated nuclear weapons and doctrine, expanded their navy, improved the military effectiveness of their allies in Eastern Europe, and built up a powerful military force along the border with China.

In constructing their forces, the Soviets have evidently worked on the principle that, if war came, they would fare best by having a strong capability to conduct offensive operations. Their current view of war in Europe seems to assume a brief period of conventional warfare followed by a nuclear campaign. This campaign would involve a massive nuclear attack on NATO forces, followed by the seizure of Western Europe within a few weeks. They maintain forces in forward areas immediately ready for combat; these are designed to blunt any NATO attack and then seize the initiative. They are backed up with a mobilization and reinforcement system which the Soviets believe will enable them rapidly to raise and deploy the forces necessary to defeat NATO in Europe.

Available to the Soviets for operations in Europe within 24 hours would be some 700 medium-range ballistic missiles, intermediate-range

ballistic missiles, submarine launched ballistic missiles, and intercontinental ballistic missiles (ICBMs) currently believed to be targeted against Europe, and about 600 medium bombers stationed in the western USSR.¹ There are now some 58 Warsaw Pact divisions in East Germany, Poland, and Czechoslovakia that would be available opposite the Central Region of NATO. Of these, 50 would be essentially combat ready within 24 hours from the start of M-day. Thirty-seven of these are garrisoned near enough to the West German border to form an initial force for use against NATO. On the flanks of NATO there are 7 Warsaw Pact divisions which would be available in 24 hours, and there are 2 airborne divisions capable of being immediately deployed. After about 3 weeks, some 70 more divisions would probably be available for operations against all of NATO, although we do not know whether they would or could be moved into forward combat areas within that time. Forces in all areas would be supported by tactical aircraft (a sizeable portion of which are nuclear-capable), and major ground force units would have a tactical nuclear capability. The Soviet Navy normally has about 20 submarines and 15 surface ships on station in the Mediterranean and North Atlantic; after 3 weeks these numbers could be increased by a factor of 5. For further details concerning availability of forces see Table I on page 12 and accompanying text.

Soviet doctrine calls for a strategic nuclear strike in Europe when NATO resorts to nuclear weapons at the tactical level. This doctrine has probably been adopted to prevent NATO from taking out Warsaw Pact aircraft and strategic missiles at a time of NATO's choosing, but it also presents problems on which Soviet military writings provide little guidance. We do not know, for example, whether the Soviets plan an intercontinental nuclear attack on the US coincidental with a massive nuclear attack in Europe. Some Soviet writers have considered waging nuclear war in Europe with tactical nuclear weapons in a way which did not lead to general nuclear war, but the Soviets do not have a variety of low-yield nuclears comparable to that possessed by NATO. Thus, the limited tactical nuclear option does not now seem very promising. The Soviets have not prepared for a sustained conventional war because they think it unlikely. If it should happen, they would have

¹ For the views of Maj. Gen. Phillip B. Davidson, Assistant Chief of Staff for Intelligence, Department of the Army; Rear Adm. Earl F. Rectanus, Director of Naval Intelligence, Department of the Navy; and Brig. Gen. Edward Ratkovich, Acting Assistant Chief of Staff, Intelligence, USAF, see their footnote 6 on page 13.

some problems, especially with logistics, though in time these could probably be overcome.

In 1965 the USSR began a military buildup along the Sino-Soviet border which continues to this day. The initial impetus was defensive, but geography and Soviet military doctrine have apparently led the Soviets to develop a force structured and deployed for offensive operations, and they are placing themselves in a position to initiate hostilities should they desire to do so. While there are some 43 divisions in the Military Districts bordering on China and in Mongolia, only about 36 of these are in the border area. These 36 have 6,500 tanks and 200 nuclear launchers. Frontal Aviation provides approximately 1,000 aircraft in support of these ground formations. If all existing divisions were filled out, and the same level of support furnished as found in forward areas opposite the Central Region of NATO, Soviet troop strength would reach about 650,000. Full strength Soviet forces on the order just described, supported by bombers and provided with good air cover, could probably advance several hundred miles into Chinese territory and occupy large portions of the border provinces of Manchuria, Inner Mongolia, and Sinkiang; they could probably do this without resort to nuclear weapons. But such operations would not destroy Chinese capabilities to wage war, and the Soviets would have to recognize the possibility of protracted hostilities.

There is no direct evidence concerning Soviet plans for the future composition and weaponry of forces. Some individual weapon systems can be projected confidently a few years into the future, but the farther into the future one goes the less helpful is knowledge of current production. The problem of estimating future forces involves not only a sense of the momentum and direction of on-going programs but also questions of possible changes in strategy and policy.

We expect Soviet ground forces to be modernized by movement into the forces of weapon systems currently in production and by new systems coming along in the mid-1970s. A new tank, more armored personnel carriers, and more of current models of tactical missiles will be deployed. There will be more sophisticated tactical aircraft and better surface-to-air missiles. Major surface ship construction will continue to emphasize multipurpose ships. The surface fleet could change significantly during the 1970s, with a much higher proportion being missile equipped. New submarines will be predominantly nuclear powered. In

the peripheral strategic attack forces, the new high-performance Back-fire bomber will enter the force, and the introduction of missiles of ICBM range will probably continue.²

There could be upward or downward revisions in the overall size and composition of the force depending upon the Soviet perception of the threat or changes in Soviet objectives and in international relationships. There is, of course, a floor below which forces are unlikely to go; this derives from geographical, historical, political, and ideological considerations such as the length of the Soviet borders, the traditional fear of invasion, the desire to maintain domination in Eastern Europe, the overriding necessity to protect the homeland. Constraints of time and resources also constitute a practical ceiling on upward development. For the kinds and variety of forces we deal with here, there are measurable limits to what can be done in enlarging and re-equipping within the next six to eight years.

There are an almost infinite number of possible Soviet force postures within those upper and lower limits. In the text, we have chosen four alternative ones for purposes of illustration. These are discussed in paragraphs 144 through 151 and accompanying Tables. Tabular renditions of force components are, of course, only a part of the picture; weaknesses or strengths in doctrine, tactics, training, command, and morale can modify the effects of numbers. We make no choice among the postures; this is partly because actual development of Soviet forces will depend upon policy choices made in the light of Soviet objectives and the developing world situation.

²For the views of Maj. Gen. Phillip B. Davidson, Assistant Chief of Staff for Intelligence, Department of the Army; Rear Adm. Earl F. Rectanus, Director of Naval Intelligence, Department of the Navy; and Brig. Gen. Edward Ratkovich, Acting Assistant Chief of Staff, Intelligence, USAF, see their footnote 6 on page 13.

DISCUSSION

I. EVOLUTION OF SOVIET FORCES AND STRATEGY FOR OPERATIONS IN EURASIA

A. Prenuclear Period (1945-1953)

1. In the years after World War II the massive Soviet Army was the main element of Soviet military power. It was deployed to defend the periphery of the USSR, but was concentrated primarily in the western USSR and eastern Europe. By its accepted capability to seize much of Western Europe by force, it provided a deterrent against use by the US of its superior strategic nuclear power. In addition, it served as the most obvious instrument of Soviet control in Eastern Europe. During the postwar years under Stalin, although the Soviets were rushing the development of a nuclear capability, their forces for operations in Eurasia were developed and deployed to fight a non-nuclear war. Their doctrine for the fighting of such a war was based on the lessons of World War II; it emphasized the use of massed infantry and artillery to break through enemy defenses, creating opportunities for exploitation by fast-

moving columns of armor. It appeared to ignore the nuclear threat.

B. Early Nuclear Period (1953-1965)

2. By 1953 the Soviets had tested and begun to stockpile atomic weapons, had tested a thermonuclear device, and were in need of a strategy and doctrine for nuclear war. The death of Stalin in that year permitted a more objective development of this strategy and doctrine. But it wasn't until 1955, when Khrushchev emerged as leader of the USSR, that nuclear doctrine came into its own. Promoted by Khrushchev as a means of building the image of Soviet power, nuclear weapons came to dominate all aspects of Soviet strategy by the late 1950s. War in Europe was seen as nuclear from the start.

3. The initial nuclear strikes, according to the evolving Soviet doctrine, were to be delivered by bombers and missiles against strategic targets in Eurasia. By the early 1960s, the Soviets had built a formidable capability for strategic nuclear attack on countries around

its periphery. An initial capability to attack with propeller-driven medium bombers carrying atomic bombs was followed by the rapid growth of a jet medium bomber force carrying thermonuclear bombs. Nuclear warheads were fitted to medium-range ballistic missiles (MRBMs) and to intermediate-range ballistic missiles (IRBMs). Areas of deployment indicated that the preponderant number of targets were in Europe, but substantial deployment was also made in the Far East.

4. During the early 1960s the Soviets began to build a tactical nuclear capability. They stockpiled nuclear bombs suitable for battlefield delivery by the tactical air forces. They deployed nuclear-capable free rockets over ground (FROGs) and short-range ballistic missiles under the control of the ground forces. With nuclear rocket and missile forces assuming responsibility for destroying stationary targets in the rear area, tactical nuclear bombers became primarily concerned with attacking nuclear delivery means and concentrations of enemy troops. The tactical air and artillery forces were reduced by more than 50 percent.

5. Concurrently with their assimilation of nuclear weapons and doctrine, the theater forces were restructured to enable them to advance more swiftly across Western Europe in the aftermath of initial nuclear strikes. Instead of massed artillery and tanks, nuclear strikes were to be used to create gaps in NATO's defenses and to destroy NATO reserves. Large tank forces were then to pass through these gaps, by-passing or encircling any remaining NATO forces. In general, the new structure favored mobility and survivability. Both infantry and support forces were streamlined, on the assumption that a quick war reduced the need for staying power and for logistic support.

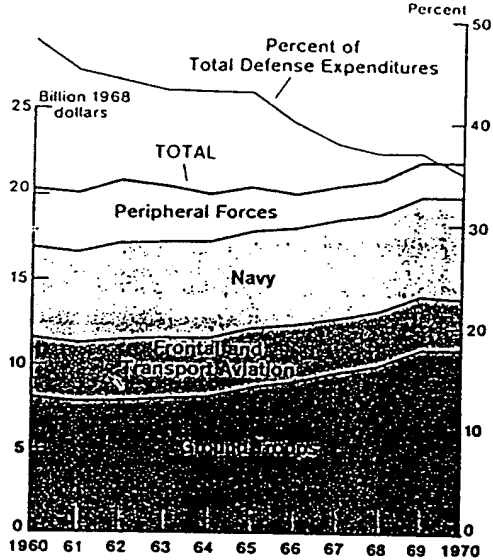
6. Beginning about 1960, the Soviets accelerated the conversion of their East European satellites into more effective military allies. The Warsaw Pact had been created in 1955 in reaction to West Germany's entrance into NATO. During its first five years, it served largely as an instrument of political control over Eastern Europe and as a propaganda counterweight to NATO. In the early 1960s, however, the East European armed forces—particularly those of Poland and Czechoslovakia—were reorganized and re-equipped to conduct semi-independent military operations. The primary aim of the Soviets probably was to build up the military potential of their allies. They were simultaneously realizing substantial economies by reducing the size of their own ground and air forces.

7. At the same time that the theater forces were being equipped to fight a nuclear war against NATO forces in Europe, Soviet naval strategy began to emphasize nuclear strikes on NATO carrier task forces in the open ocean in the initial stages of a nuclear war. The Soviets developed, and in the early 1960s deployed, antiship cruise missiles for launching from submarines, surface ships, and aircraft. They also began to deploy new long-range torpedo attack submarines—diesel-powered at first, then nuclear-powered—suitable for attacking Western naval forces and sea lines of communication.

8. These changes were made possible by technical advances in nuclear weapons and in means of delivery. But the ultimate drive for streamlining the various forces for operations on the periphery of the USSR came from Khrushchev's desire to pay for the new nuclear forces by cutting expenditures on conventional forces. Expenditures for forces for operations in Eurasia were reduced from two-thirds of total expenditures for defense and

Figure 1

Estimated Expenditures for Soviet Forces for Operations in Eurasia, 1960-1970



military space in 1952 to 43 percent in 1964. In the same period, expenditures for ground forces declined from less than 40 percent to about 15 percent. (See Figure 1.)

C. Recent Developments (1965-1971)

9. Since 1964, the Soviets have modified their earlier view that any hostilities in Europe would either begin with, or very quickly escalate to, general nuclear war. They have come to accept the possibility that at least the initial phases of a war between NATO and the Warsaw Pact might be conventional. Recognizing the need for additional conventional firepower to break through NATO's main defenses during the non-nuclear phase, the Soviets have strengthened their artillery. But they evidently do not expect that NATO would refrain from using nuclear weapons if the Pact succeeded in a conventional offensive,

and have also steadily increased their numbers of tactical nuclear weapons.

10. [] suggest that, once nuclear weapons have been introduced, the Soviets would employ them on whatever scale was necessary to achieve their military objectives. They evidently so far have not accepted the US concept embodied in NATO doctrine of a series of controlled and interacting transitional steps from conventional war through nuclear weapons of increasingly greater yields and numbers to general nuclear war. The Soviets believe that it would be very difficult, if not impossible, to limit or control nuclear war once it begins, and characterize war in Europe as most likely remaining non-nuclear or escalating to use of strategic nuclear weapons. One of the reasons they do not hold to a flexible tactical nuclear strategy may be that they do not have some of the weapons available to NATO at the lower end of the nuclear spectrum.

11. Undoubtedly a major concern to the Soviet planner over the past five years has been the need to defend 10,000 kilometers of border against the Chinese. The Chinese rebuffed the attempts of the new Soviet leadership in 1965 to patch up the quarrel between the two countries, as they had previously rejected Khrushchev's attempts to keep them a non-nuclear power. The Soviets have responded to Chinese hostility by steadily building up along the border forces designed to assure Soviet victory in either nuclear or conventional war, should one arise. The buildup has, thus far, been accomplished without appreciably drawing down the forces opposite NATO in Europe, although the border area has received preferential deployment of some new equipment.

12. Soviet naval capabilities in support of peripheral operations have also continued to

expand since 1965. After the Arab-Israeli war of 1967 the small Mediterranean squadron established in 1964 began to conduct regular anticarrier operations. In wartime the Mediterranean squadron would attempt to counter the threat from US strike forces and to hinder NATO maritime support of land operations in the Southern Region. After 1965 naval air reconnaissance of the sea approaches to the Soviet periphery grew with the addition of Bear aircraft to naval aviation. The deployment of the new C-class submarine substantially improved capabilities against carrier task forces and sea lines of communication.

13. The Czechoslovak crisis in 1968 increased concern over Soviet defenses on the Western periphery. The specter of Czechoslovak withdrawal from the Warsaw Pact, which would have created a gaping hole in the Pact defenses, was certainly a major consideration in the Soviet decision to invade Czechoslovakia and reverse the course of political developments in that country. By establishing a permanent garrison of five divisions in Czechoslovakia, the Soviets have at one and the same time improved Warsaw Pact forward capabilities against NATO and improved control over Czechoslovakia. They have also worked toward strengthening the Warsaw Pact military organization by integrating more East European officers into the combined headquarters in Moscow, by improving combined procedures, and by conducting multinational exercises.

14. We estimate that these various changes—increased deployments against China and in the Mediterranean, and increased conventional and nuclear firepower among others—were achieved with an increase in expenditures for forces for operations in Eurasia of only about \$2 billion, from \$20 billion in 1964 to \$22 billion in 1970. These expenditures have, however, declined from 43 to 35 per-

cent of total Soviet expenditures for defense and military space, largely because of rapidly growing expenditures for military research and development (R&D) and space in the total. (See Figure 1, page 7.)

15. Warsaw Pact forces for operations in Eurasia can best be described in terms of three major groupings by apparent role and geography.

- those in Eastern Europe and the western military districts (MDs) which appear to be earmarked for use against NATO;
- those in the military districts bordering China and in Mongolia, which appear to be earmarked for use against China.
- those in the interior regions of the USSR which could be used to reinforce either of the two main groupings, or to conduct operations on the flanks of NATO.

Pact forces in Europe are preponderantly Soviet; however, East Europeans make significant contributions. The Soviet Navy and Strategic Rocket Forces (SRF) also support operations in Europe. The forces in Asia are exclusively Soviet. They are supported by the Soviet Navy with its growing capabilities in the area. The Soviets have deactivated MRBM/IRBM sites in the Far East. Coverage of strategic targets in the Far East is probably now provided by other strategic weapons systems.

16. The following two sections describe Warsaw Pact capabilities in Europe and Soviet capabilities in Asia. Soviet theater force capabilities in the central part of the country are treated as possible reinforcements to the areas of primary interest. Discussions of Soviet general purpose ground, air, and naval forces and of strategic forces appropriate for attack on Eurasia are found in Annexes A, B, and C following the text. Other Annexes discuss specific problem areas: reinforcement opposite

NATO, the buildup along the Chinese border, logistics support, capabilities for biological and chemical warfare, and Warsaw Pact command relationships.

II. WARSAW PACT CAPABILITIES IN EUROPE

A. A Soviet View of the Initiation and Nature of War in Europe

17. Judging by the development of Soviet military forces for operations in Europe, the essential goal of Soviet military planners is to defend Soviet interests by developing and maintaining the capability to conduct offensive operations against NATO. Precisely how the Soviets would fight a war if it came cannot, of course, be predicted, but some guidance to Soviet thinking can be defined.

War in Europe begins with a NATO attack by conventional forces after a period of tension. Once the war begins, Soviet forces launch a counter-offensive and rapidly penetrate NATO's forward defensive positions. NATO then resorts to tactical nuclear weapons. This precipitates a massive widespread Pact nuclear attack on NATO forces, followed by an offensive that completes the seizure of Western Europe within a few weeks.

18. Neither the Soviet military posture nor plans appear to contemplate an attack by either side without at least some warning. Soviet [] presuppose a period of tension during which preparations would be made by both sides. In any event, Warsaw Pact forces, in terms of both readiness and position, could achieve only limited objectives without buildup of forces and supplies.

19. All of the above having been said, a number of important questions arise. Do the Soviet leaders really believe they could so easily turn back a NATO conventional assault? Do they believe they could respond to a NATO

initiation of nuclear warfare with a full-scale nuclear assault upon Europe, without at the same time engaging in full-scale intercontinental nuclear warfare? We do not know the answers; these are not subjects on which evidence is particularly helpful.

[] suggest that the Soviets believe themselves superior in conventional warfare, a prudent Soviet planner must also have some reservations about the reliability and effectiveness of his East European allies in all circumstances, especially since their support would be essential in the early stages of a conflict. Moreover, depending as he would have to upon reinforcing troops rapidly mobilized from reserve status, the Soviet planner might also have reservations about the effectiveness of his own forces in a situation involving rapid military movement against opposition and in which lines of communications are interdicted.

20. What is more important, however, is the question of responding to NATO's actions with a nuclear assault upon Europe. There is no conclusive evidence

[] USSR would automatically accompany a nuclear strike against Europe with a nuclear strike against the US. But how could the Soviet leaders be sure that the US, UK, or France would allow a massive nuclear strike anywhere in Western Europe without retaliating against the USSR itself? It would be clearly imprudent to plan on the Western Powers not doing so. This, then, is a strong inhibition against the deliberate initiation of hostilities in Europe by the USSR. It also militates against allowing a situation to develop in which large-scale hostilities become likely.

21. Indeed, Soviet behavior and Soviet statements have made it quite clear that the Soviet leaders believe general nuclear war would pose an extremely grave danger to the survival of the USSR itself and to civilized life on the entire planet. This is not to say that the Soviet leaders are prepared to abandon interests or

refrain from pressing policies simply from fear of military conflict or that they will not seek to use the size and existence of their military power for whatever advantage they can gain from it without too great risk. They almost certainly will continue to do what they have been doing in the past, that is, to probe for the amount of risk involved and to utilize force or the threat of force when they believe the risks are manageable.

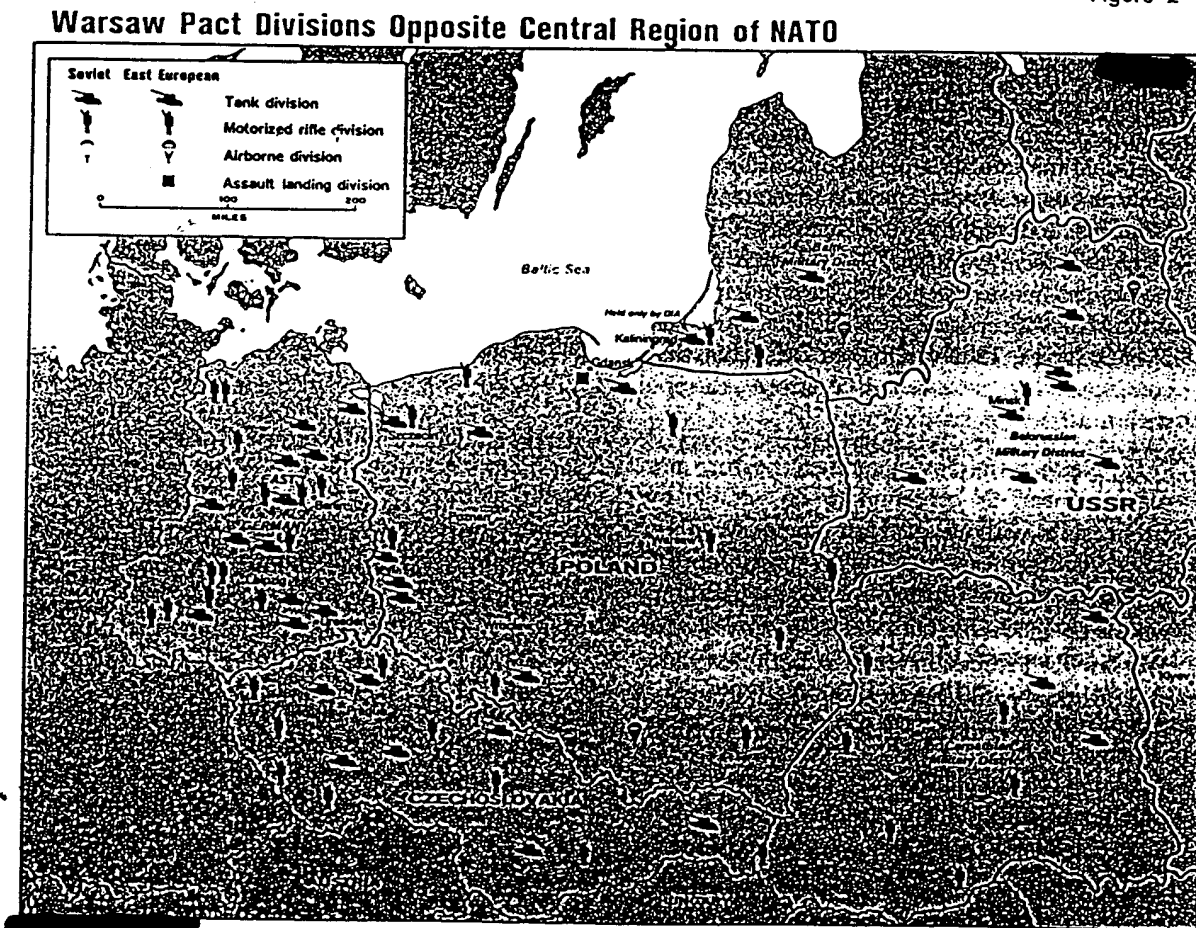
22. The Soviets recognize, of course, that they may miscalculate risks and that they cannot control the behavior of their adversaries.

Similarly, they recognize that the course of events in Europe might require them to initiate hostilities in order to secure their vital interests. In any case, they understand that events could get beyond their control and involve risks they would prefer not to accept. In short, they recognize that war in Europe is possible even though it is their policy to avoid it.

B. Warsaw Pact Forces Available for Use Opposite NATO in Europe

23. Given the possibility of war in Europe, Soviet military planners have taken steps with-

Figure 2



in the resources allowed them to prepare for it. They maintain in forward areas forces immediately ready for combat; these are designed to blunt a NATO attack and then to seize the initiative. They back up these forces with a mobilization and reinforcement system which, they believe, will permit them quickly to raise and deploy forces sufficient to defeat NATO in Europe. This section briefly describes the forces immediately available, the mobilization and reinforcement procedures and timing, and estimates the forces available after about three weeks of mobilization.

Forces Available Within 24 Hours^{3 4}

24. *Strategic Forces.*⁵ Strategic forces immediately available opposite NATO include some 700 MRBMs, IRBMs, submarine-launched bal-

³ See Table I for forces available at M + 24 hours and after about three weeks of mobilization and reinforcement.

⁴ The maps on pages 10 and 11 show the location of ground and air forces opposite the Central Region of NATO (Figures 2 and 3).

⁵ Annex C describes in greater detail the Soviet strategic missile and bomber forces for operations in Eurasia.

Figure 3

Warsaw Pact Frontal Aviation Regiments Opposite Central Region of NATO*

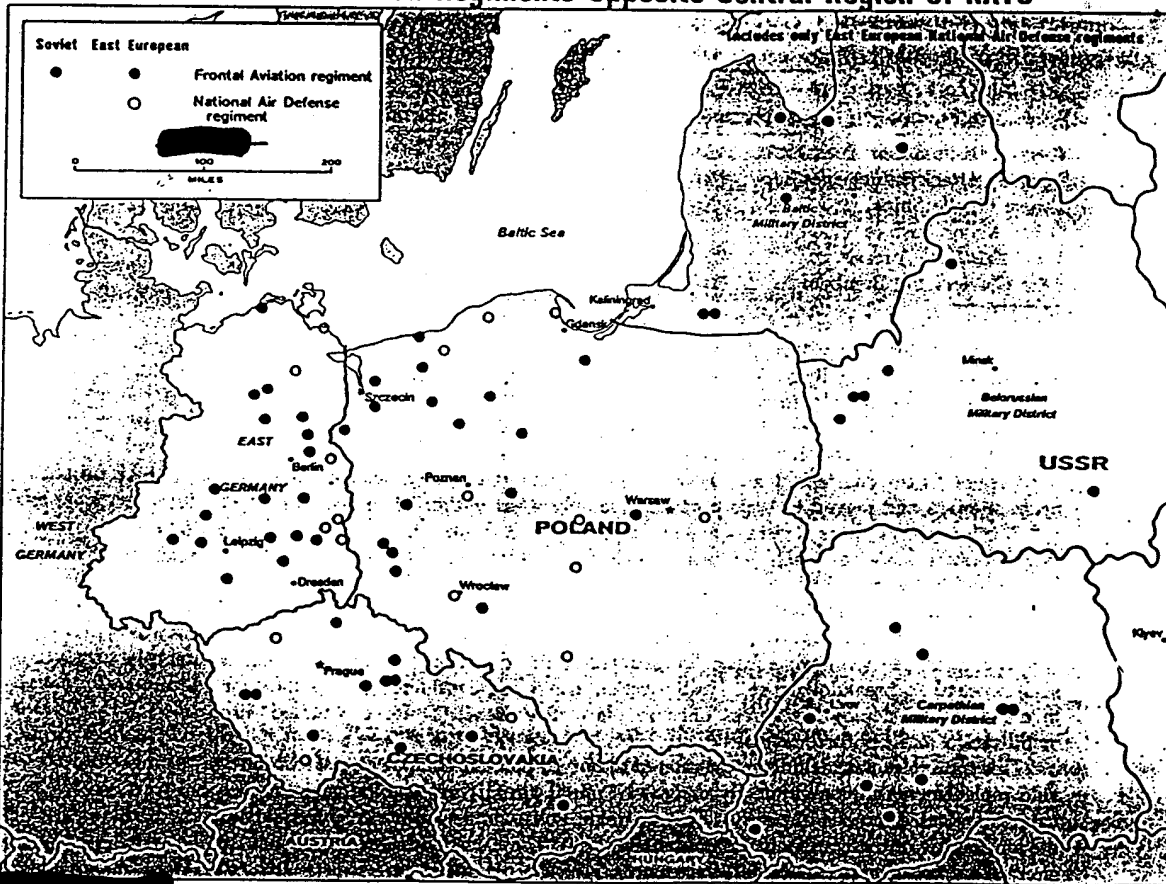


TABLE I
WARSAW PACT FORCES AGAINST NATO IN EUROPE

FORCES AVAILABLE	WITHIN 24 HOURS	IN ABOUT THREE WEEKS		
STRATEGIC FORCES				
Missile Launchers				
MRBMs	480	480		
IRBMs	71	71		
ICBMs	120 ^a	120 ^a		
SLBMs	30	30		
Medium Bombers				
Bombers	325	325		
ASM Carriers	275	275		
AIRBORNE DIVISIONS	2	8		
THEATER FORCES^b				
Opposite Central Region				
Divisions	50 ^c	82-83 ^d		
Men	750,000	1,300,000		
Tanks	12,000	20,000		
Aircraft	1,300-1,500	2,500-2,700 ^e		
Tactical Nuclear Launchers	300	560		
	FORCES NORMALLY ON STATION	AVAILABLE IN ABOUT THREE WEEKS		
NAVAL FORCES	MEDITERRANEAN^f	NORTH ATLANTIC^g	MEDITERRANEAN^f	NORTH ATLANTIC^g
Cruise Missile Submarines	2	2	4	19
Torpedo Attack Submarines	11	5	20	55
Cruise Missile Ships	5	1	14	9
Other Major Surface Combatants	6	4	31	43
Reconnaissance Aircraft	25	49	28	55
ASM Carriers and Bombers	90	170	100	192

^a For the views of Maj. Gen. Phillip B. Davidson, Assistant Chief of Staff for Intelligence, Department of the Army; Rear Adm. Earl F. Rectanus, Director of Naval Intelligence, Department of the Navy; and Brig. Gen. Edward Ratkovich, Acting Assistant Chief of Staff, Intelligence, USAF, see their footnote 6 on page 13.

^b Detailed studies of possible reinforcement scenarios against NATO's flanks, similar to those against the Central Region, have not been made.

^c Theater forces considered are those forces in the forward area which are assumed to be up to strength and moved to their wartime assembly areas within 24 hours.

^d Thirty-seven of these divisions are at full strength and are garrisoned near enough to the West German border to reach defensive positions and form an initial force to be used against NATO within the first 24 hours.

^e It is estimated that the theater forces listed could, under other optimized assumptions, move to their forward combat areas in as few as 16 days. We do not know Soviet plans for movement, nor do we have a basis for estimating the degrading influence of chance factors such as weather, breakdowns, etc. Hostile action also is not considered, nor is the time required to organize and deploy the forces once in place. See Annex D for a detailed discussion of mobilization and reinforcement.

^f This total does not include an overage of about 10 percent combat aircraft which are to provide replacements for operationally assigned Frontal aircraft undergoing maintenance or overhaul. Nor does it include about 700 East German, Polish, and Czechoslovak aircraft assigned to the air defense of their respective national territories. These East European National Air Defense aircraft are not a part of Frontal Aviation.

^g Based on normal force availabilities and transit times.

listic missiles (SLBMs), and intercontinental ballistic missiles (ICBMs) believed currently to be targeted against NATO in Europe.⁶ They also include some 600 medium bombers stationed in the western USSR. These forces are probably maintained in combat status in peacetime and are ready to react in a few hours. The medium bombers can carry either nuclear or non-nuclear weapons. The strategic missile forces do not have a conventional attack capability.

25. *Naval Forces.*⁷ The Soviet Navy would rely heavily upon a period of warning to get available ships to sea, and thus increase the number available. About 15 to 20 percent of Soviet ships are now routinely at sea, and about half of the ship inventory is ready for immediate deployment. The other half is being replenished, in overhaul, major repairs, or conversion, or is unavailable for some other

⁶ Maj. Gen. Phillip B. Davidson, Assistant Chief of Staff for Intelligence, Department of the Army; Rear Adm. Earl F. Rectanus, Director of Naval Intelligence, Department of the Navy; and Brig. Gen. Edward Ratkovich, Acting Assistant Chief of Staff, Intelligence, USAF, consider all SS-11 ICBMs to be primarily targeted against the US. The SS-11 has demonstrated the capability to be used for a wide range of Soviet targeting options to include both intercontinental and peripheral attack. However, evidence concerning the primary or secondary targets for specifically deployed SS-11s remains inconclusive. The US remains the most powerful strategic opponent of the USSR and is the only nation that could inflict severe damage upon the Soviets in a nuclear exchange. It is doubtful that the Soviets would elect to use a weapon system with intercontinental capabilities against peripheral targets that are already covered by existing Soviet peripheral weapon systems. On balance, the above named individuals believe the Soviets have targeted the SS-11 ICBMs at Derazhnya and Pervomaysk primarily against the US but retain the option to change to peripheral target areas should the contingency arise.

⁷ Annex B discusses the missions, forces, deployment and combat effectiveness of Soviet general purpose naval forces and the disposition of East European navies in more detail.

reason. Some 12 combatants are routinely at sea in the North Atlantic, and some 24 in the Mediterranean. These are augmented during turnovers and major exercises. Additional Soviet and East European forces are routinely at sea in the Baltic and Black Seas. The Soviet Navy also has an extensive air arm consisting of long-range reconnaissance aircraft and medium bombers equipped with air-to-surface missiles (ASMs) or bombs. Almost all of these would be ready for operations within a few hours. About three-fourths of Soviet naval sea and air forces are based in areas from which they could undertake operations against NATO in Western Europe and against seaborne support of NATO in Europe.

26. *Theater Forces.*⁸ Warsaw Pact theater forces intended for immediate operations—generally those located closest to the potential combat zones—are kept in relatively high states of readiness. Others, which are intended as reinforcements or reserves, are kept under-strength in peacetime and would require mobilization of additional men and vehicles before being moved to a combat zone.

27. There are now some 58 Warsaw Pact divisions in East Germany, Poland, and Czechoslovakia that would be available opposite the Central Region of NATO. Of these, 50 would be essentially combat ready within 24 hours from the start of M-day. Thirty-seven of these are, in turn, garrisoned near enough to the West German border to reach defensive positions and form an initial force to be used against NATO within 24 hours. Twenty-six divisions (20 Soviet and 6 East German), are opposite northern West Germany and would be supported by some 1,300 aircraft of Soviet and Polish tactical air forces in East Germany and Poland. Seven Czechoslovak and 4 Central Group of Forces (CGF) divisions are

⁸ Annex A describes Soviet theater forces in some detail and lists numbers of divisions and other forces, aircraft, and other weapons.

opposite southern West Germany. These divisions would be supported by some 400 aircraft of Soviet and Czechoslovak tactical air forces in Czechoslovakia, and possibly by the Soviet air army in Hungary.⁹

28. Twelve Polish divisions and 2 Soviet divisions in Poland and the remaining Soviet division in CCF would require several days to move into position. Four Soviet divisions in Hungary and 6 Hungarian divisions probably would not be part of Warsaw Pact forces committed against the NATO Central Region, but would more likely be used either to defend the southern flank of the Pact forces against possible attack from Austrian or Yugoslav territory or to conduct offensive operations through those countries. No large concentrations of Warsaw Pact forces are positioned directly on the NATO flanks in northern Norway. Five Bulgarian divisions and 5 tank brigades opposite Greece and European Turkey are available for immediate operations. (A high level Bulgarian defector has stated that a plan calls for one of these divisions and one of these brigades to mass on the Yugoslav border to insure Yugoslav neutrality in the event of war.)

29. *Airborne and Amphibious Forces.* In addition to the above theater ground and air forces, there are 7 airborne divisions in the USSR. Most of these probably would be employed against NATO in event of war. We believe they are either combat ready now or capable of being made combat ready within a day. The Soviets have sufficient transport aircraft to lift about 2 of these divisions in a single airborne operation. The Soviets also have 1 brigade of naval infantry in each of the Northern and Baltic Sea fleet areas, and 2 in the Black Sea area, along with supporting amphibious shipping. These units could probably be ready for operations as soon as the

⁹ See Annex D, "Readiness, Mobilization, and Reinforcement of Warsaw Pact Forces Opposite NATO."

logistic preparations could be made. The Poles also have the equivalent of a naval infantry brigade in the Baltic, but it would rely in part on Soviet sea lift.

*Mobilization*¹⁰

30. The Soviets apparently consider remote the likelihood of a sudden outbreak of hostilities requiring the Warsaw Pact to fight with the forces outlined above. They base their planning on the assumption of a period of pre-hostilities tension and mobilization, and maintain a large number of divisions in the border MDs of the USSR which can be mobilized and readied to move westward quickly. The East Europeans model their mobilization system after the Soviet example.

31. The general outline of Warsaw Pact ground force mobilization plans and procedures has been indicated by classified and unclassified writings and the testimony of defectors. Essentially, the system is based on universal military training, the prior designation of local reservists to fill vacancies in low strength units, and the maintenance of organized reserve motor transport units in the civilian transport industry to make up military truck shortages. There is a well-developed organization for maintaining Pact mobilization plans in peacetime, and an effective procedure for quickly alerting and assembling local reservists and drivers with their vehicles. The procedure emphasizes speed rather than quality. Mobilized units would have varying degrees of combat ability; some would certainly have serious shortcomings.

32. The Pact mobilization process has not been fully tested; a full test would be economically disruptive and militarily provocative. It has, however, been practiced in several partial mobilizations. The Czechoslovak intervention in 1968 involved what was almost cer-

¹⁰ Warsaw Pact mobilization and reinforcement procedures and capabilities are discussed in greater detail in Annex D.

tainly the most extensive test of Pact mobilization capabilities to date, but few details have become available. Some 20 divisions were mobilized, requiring the call up of at least 125,000 reservists and 20,000 civilian trucks. Some East European mobilization was also probably carried out.

33. Some 350,000 reservists and 90,000 civilian trucks would be required to fill out about 75 understrength Soviet divisions in the USSR which probably are intended for early use against both the Central Region and the flanks of NATO. We estimate that the great majority, and possibly all, of these reservists and trucks could be assembled with their units in from 1 to 3 days. Some 100,000 to 200,000 additional reservists and large numbers of additional trucks and engineering equipment would be needed to fill out army- and *front*-level support forces. Mobilization of these latter elements would probably be accomplished in much the same manner as for divisions. However, since many of these reservists probably would be specialists, they would almost certainly have to be drawn from larger regions than would be the case with divisions. This might stretch the time for assembling support units.

34. With a high proportion of reservists, many having no recent refresher training and lacking familiarity with their leaders, their fellow soldiers, or their equipment, most mobilized Soviet divisions are likely to have low initial combat effectiveness. Some of these mobilized from cadre status probably would have such limited combat value without at least a few weeks of training and shakedown that their early use in a Pact offensive would be improbable. The most effective mobilized divisions would be tank divisions, but, even in these divisions, the motorized rifle regiments and most of the combat and service support would have high proportions of reservists.

35. Naval forces would also have to be brought to increased states of readiness. Given

warning on the order of a week or two, the Soviets would probably aim at an initial deployment level on the order of 50 percent for regular surface ships. Because initial anticarrier operations would be a high priority, the Soviets might deploy about 70 percent of the cruise-missile force. Thus, the Soviet Northern Fleet might deploy as many as 50 long-range cruise-missile and torpedo attack submarines and 20 medium-range torpedo attack submarines in the Atlantic. About 30 major surface ships from the Northern Fleet probably could be deployed to the Norwegian Sea. Given warning of 2 to 3 months, the Soviets could achieve deployment of about 75 percent of long-range ships and submarines. Once achieved, this level of deployment probably could be sustained for about 2 months.

Forces Available after Mobilization and Reinforcement

36. Forces available after a mobilization of three weeks or so are outlined in Table I. Successful execution of the entire mobilization and reinforcement plan for the theater forces would bring Pact strength opposite the Central Region of NATO up to about 80 divisions with 1,300,000 men (60 percent Soviet), some 20,000 tanks, 10,000 to 11,000 artillery pieces (including heavy mortars and multiple-round rocket launchers), 2,500 to 2,700 combat aircraft (about 60 percent ground attack, light bomber, and reconnaissance aircraft and 40 percent air defense interceptors),¹¹ and almost 600 nuclear-capable tactical missile and rocket launchers. These forces probably would be organized in 5 *fronts* in 2 echelons on the

¹¹ This total does not include an overage of about 10 percent combat aircraft which are to provide replacements for operationally assigned frontal aircraft undergoing maintenance or overhaul. Nor does it include about 700 East German, Polish, and Czechoslovak aircraft assigned to the air defense of their respective national territories. These East European National Air Defense aircraft are not a part of Frontal Aviation.

main approaches to the Rhine River leading through Germany. Detailed studies of possible reinforcement scenarios against NATO's flanks, similar to those against the Central Region, have not been made. The theater forces opposite the Central Region and the flanks of NATO would be supported by the strategic forces immediately available, by the naval forces in the Mediterranean, Black, and Baltic Sea areas and in the North Atlantic, and by the airborne forces.

Strategic Reserves

37. In addition to the forces described above, virtually all of which probably are earmarked for contingencies in specific NATO or adjacent neutral areas, the Soviets have some 22 divisions in interior areas of the USSR west of the Ural Mountains. These forces—in the Kiev, Moscow, Ural, and Volga MDs—probably would be available to constitute strategic reserves in the initial stages of a conflict with NATO.

38. Some of these divisions could be ready in a few days. Thus, the Soviets could, if required, substitute some of these for some of those in the other regions which might take longer to become mobilized and effective. This procedure is not followed in exercises and would be counter to the practice of committing armies as a unit. But divisions were taken from different armies and MDs for the Czechoslovak invasion, and the Soviets do have the option of doing this in the future.

C. Initial Conventional Stage of War in Europe

Concept of Operations

39. Relying heavily upon a period of warning, the Soviets would expect to be in a position to strike heavy blows against NATO

forces almost at the outset of a non-nuclear war, utilizing large numbers of medium bombers, as well as tactical aviation and ground forces. Although these forces have been furnished or have available large numbers of nuclear munitions, their ability to fight a conventional war is also considerable, especially in the early stages of a conflict.

40. Soviet, and hence Pact, doctrine about combat operations in the initial stages of conflict have evolved largely in reaction to the Russian historical experience of defeats in the early stages of a conflict. It calls for Pact forces rapidly to seize or regain the initiative after a NATO attack, and to overwhelm the opposition in a brief land campaign. The Soviets recognize that, without the massive initial nuclear strikes integral to their concepts of the start of nuclear war, the penetration of NATO's main defenses would be more difficult. They nevertheless appear to base their planning upon breaking through and undertaking a high-speed campaign in Europe.

41. *The Course of the Campaign.* The Warsaw Pact ground forces' organization and tactics are intended to maximize their capabilities to achieve high rates of offensive speed. In a conventional offensive, large numbers of heavily armored units would attempt to achieve high ratios of local superiority over defending NATO forces, both in tanks and in fire support, in their efforts to breakthrough. If it succeeded in breaking through NATO's main defenses, the Pact would then launch tank columns in high-speed drives toward major objectives—probably on the Rhine River. According to the doctrine, these tank columns would receive the highest priority for available combat and logistical support. In such a situation, the Pact could pay little attention to flank security for the tank columns and probably could not maintain a continuous

line of advance across the *fronts*. They would have to rely mainly on the inherent firepower and mobility of the tank columns, and on available air cover, for security against their being cut off and defeated by NATO reserve forces. The alternative to such tactics would be to slow down the whole advance considerably and maintain a continuous front line.

Theater Warfare

42. *Ground Strike*. In all these operations Warsaw Pact forces tend to emphasize striking power more than staying power and logistic support, when compared to US forces. This is perhaps most noticeable in the case of Soviet ground forces. The Warsaw Pact maintains a much higher ratio of combat units to support units in its active forces than does the US or NATO in peacetime. Soviet writings, defectors, and exercises all indicate that in wartime the Soviets would continue to maintain a higher combat-to-support ratio and a higher weapon-to-man ratio than the US.¹²

¹² Soviet army ground force divisions contain some 900,000 men—or 60 percent of the estimated 1,500,000 men in the ground forces. In the US, on the other hand, divisional forces make up only about one-third of the total army manpower. Moreover, within a division, maneuver units make up about one-half of the manpower in Warsaw Pact forces, but only one-third in US forces.

With respect to men and equipment, combat-ready Soviet divisions have roughly the same number of tanks and artillery as the most comparable US divisions, but only about half as many men. For example, a Soviet tank division at combat strength has about 8,500 men, 310 medium tanks, 60 howitzers, and 18 multiple-round rocket launchers. A US armored division at full strength has around 17,000 men, 324 medium tanks, and 66 howitzers. A US division, however, receives much more non-divisional combat support than its Soviet counterpart. Armored cavalry regiments, corps-level artillery groups, and aviation and engineer brigades all augment the combat power of the US division to a degree not enjoyed by the Soviet division. (See Annex A for a description of the organization and equipment of Soviet and East European motorized rifle and tank divisions.)

43. For the initial breakthrough, Pact artillery would be most important. Probably in recognition of this requirement, Soviet division artillery has been increased by some 50 percent during the past few years. Now, after mobilization, Warsaw Pact forces would have about three times as many artillery pieces as NATO forces in the Central Region. This would include large numbers of multiple rocket launchers capable of delivering large amounts of fire in a short time, with less accuracy, than tube artillery. In fluid battle situations, the Soviets rely on large masses of tanks. Analysis of Soviet organization and tactics indicates that the Soviets might concentrate up to 1,400 tanks in a breakthrough zone no more than 40 kilometers wide.¹³

44. While capable of nuclear and chemical fire support, the four free rocket (FROG) launchers in each division also have available conventional and probably high fragmentation warheads for use against area targets up to about 30 n.m. in the enemy rear.

45. *Air Strikes*. Warsaw Pact Frontal Aviation¹⁴ would be responsible for carrying out attacks on targets up to about 250 n.m. from the forward position of the ground forces. Targets would include mobile missile, artillery, and anti-aircraft systems as well as airfields, supply areas, troop concentrations, and headquarters. The low payloads of the aircraft—fighters carry only about 1,000 pounds, fighter bombers up to 4,000 pounds, and light bombers up to 6,000 pounds—and the probable sortie rates of 2 to 3 per day would limit support to ground forces in a conventional situation.

¹³ See Annex A, Section II for discussion of Warsaw Pact artillery capabilities and differing interpretations of the effectiveness of Pact artillery.

¹⁴ Each *front* is supported by a tactical air army (TAA); these armies are called Frontal Aviation by the Soviets.

46. Deep-strike missions in support of overall theater operations would be the responsibility of medium bombers of Soviet Long Range Aviation (LRA) because of their payload and range capabilities. They could carry up to 12,000 pounds of bombs to a radius of 1,500 miles. In addition, Soviet Naval Aviation has medium bombers for use against targets primarily of naval interest. Although many of these medium bombers carry ASMs, some also carry bombs, and many ASMs have conventional warheads in addition to nuclear.

47. *Mobility.* The Soviets recognize that the mobility of pact maneuver elements is of crucial importance, and they have been steadily improving their forces to give them greater mobility. The high proportion of tanks supports the Pact concept of the requirement for mobile firepower. There are sufficient armored personnel carriers (APCs) and cargo trucks available to first-echelon forces to move troops in an offensive in Europe. Second-echelon forces would probably not have enough APCs and would also rely on vehicles mobilized from the civilian sector. A new infantry combat vehicle which can carry one squad is being issued to Soviet units. A new heavy transporter is being produced in large quantity for tank units and will not only take some of the load off the rail system in any future war, but will also be less vulnerable to interdiction.

48. The Soviets also utilize air support to increase mobility. The Czechoslovak invasion illustrated their ability to execute an extensive lift in a short space of time in an unopposed situation. The manner of utilization of helicopters in exercises provides an indication of how tactical air mobility will be used. In Exercise "Dnepr", for example, in September 1967 three battalions were landed by helicopter as part of the tactical operations. During the "Oder-Neisse" Exercise in September 1969, specially equipped helicopters were used

as antitank reserves, as support for ground force movements involving the securing of bridgeheads, and for vertical envelopment of enemy forces.

49. The emphasis in Soviet tactical doctrine on high-speed offensive operations and the prevalence of water obstacles across potential Pact attack routes in Europe have led Pact forces to stress the capability to overcome water obstacles in their organization, equipment, and training. These efforts have had considerable success. Pact engineer organizations, both at division and army level, are furnished with exceptionally well designed and effective bridging and ferrying equipment. Most Pact tanks are equipped for deep fording and can negotiate shallow water obstacles with only minor engineer support. Soviet forces in East Germany devote considerable training time to mobility training and achieve a generally high level of proficiency.

Theater Defense

50. *Ground Defense.* Although Warsaw Pact general purpose forces are structured for fast-moving offensive action, Soviet military planners are well aware that the defense cannot be ignored. They have developed a defensive doctrine which envisages allowing the enemy to spend himself against strong defenses and then striking him with a massive counter-attack. For slowing and canalizing the enemy, the Soviets rely heavily on mine fields and antitank defenses.

51. *Air Defense.* Defense of theater forces against hostile air attack is centered in *front* air defense, which coordinates early warning (EW) and ground-controlled intercept (GCI) radars, SAMs, and interceptor aircraft subordinate to the *front*. In recent years, the Soviets have been steadily improving their air defense capability in Eastern Europe. The late model, all-weather Mig-21 (Fishbed J) is becoming the standard Soviet interceptor.

The basic ground weapons system for air defense is still the SA-2, which provides medium-to high-altitude coverage. In addition, the SA-3 has been deployed in Eastern Europe to provide low-altitude point defense of Soviet tactical airfields in East Germany, Poland, and Hungary. The mobile SA-4 system, which was designed specifically to provide medium-to high-altitude coverage for ground forces, is now deployed in the USSR, East Germany, and Hungary. A new track-mounted system (SA-6) with a low-altitude capability is now operational in limited numbers, and the existence of a small, heat-seeking missile (SA-7) similar to the US Redeye is now confirmed. In addition to the various missile systems, the Soviets have deployed with their ground forces large numbers of radar-controlled anti-aircraft artillery. These weapons are particularly effective against slow flying aircraft at low altitudes, especially helicopters. The Soviets have also been constructing since 1967 revetments and hard shelters to protect their fixed air defense installations.

52. Coordination of Warsaw Pact defenses in wartime—despite these various improvements—would nevertheless be a complicated one, involving as it does EW and GCI radars, SAMs, and interceptor aircraft, several fronts, and the operational components of East European national air defense. On the technical level, overall effectiveness is also somewhat degraded by the vulnerability of acquisition radars to heavy use of electronic countermeasures. The defenses will remain susceptible to low-altitude penetration by high-performance aircraft at least until the full deployment of new weapons.

*Naval Warfare*¹⁵

53. In a war with NATO in Western Europe the missions of the Soviet general

¹⁵ See Annex B for a more detailed discussion of Warsaw Pact naval forces.

purpose naval forces would be to assure access to the open ocean by Soviet naval forces, to neutralize Western attack carriers, to keep reinforcements from reaching Europe by sea, to defend against close-in attack from the sea, to support ground operations, and to defend against ballistic missile submarines.¹⁶

54. *Assuring Access to Open Seas.* Most of the Soviet surface naval forces which could be used against NATO in the seas surrounding Europe are stationed in the Baltic or Black Seas. Access to the Mediterranean or North Atlantic from these areas is through narrow straits. One of the earliest Soviet naval operations in time of crisis might be to put their best ships through the straits before NATO forces could bottle them up. They might in wartime attempt to secure these straits by amphibious, and possibly airborne, assault, and to follow this up with land operations. Although the Northern Fleet is on the open ocean, the Soviets would require strong anti-submarine warfare (ASW) forces in the area to counter attack by NATO submarines, and they have based most of their nuclear attack submarines in the Northern Fleet.

55. *Attacking NATO Carrier Task Forces.* The primary Soviet naval concern in the initial stages of a conventional war, next to assuring access to open seas, would be the destruction of NATO carrier task forces. The Soviets have adequate forces and procedures for finding and tracking enemy naval task forces at sea unless the enemy maintains nearly total electronic silence. The network of naval radio direction-finding stations in the USSR is probably supplemented by ELINT satellites. A small fleet of specialized intelligence ships is available for locating naval ships at sea in their operating zones. Long-range naval air-

¹⁶ The latter mission also falls within the category of strategic defense.

craft of the Bear D type also perform extensive reconnaissance flights. The best Soviet detection capability is in the Mediterranean because of the larger number of ships, submarines, and naval aircraft available there for reconnaissance and trailing operations.

56. The Soviets' anticarrier capability hinges largely on their ability to confound and saturate carrier defenses with a large coordinated missile attack from submarines, surface ships, and aircraft. Soviet skill in organizing this kind of attack is highly developed in the Mediterranean, where their forces frequently practice all of the required techniques except the actual attack by strike aircraft. The Soviet anticarrier capability is also well-developed in the Norwegian Sea approaches, where naval and LRA strike aircraft participate in exercises, and where about 50 percent of the cruise-missile submarines are located. The usual Soviet scenario there involves a series of anticarrier barriers opposing carrier penetration. The Soviets have the potential to trail carriers with cruise-missile ships and submarines in the Norwegian Sea in a period of tension as they do in the Mediterranean. They are still in the process of refining the multi-force cruise-missile attack, and there are undoubtedly some problems of tactical coordination of the timing and direction of the several attacks.

57. *Interdiction of Sea Lines of Communications.* Long-range torpedo and cruise-missile submarines are the primary threat to NATO sea lines of communications to Europe. Long- and medium-range aircraft might be used against convoys if no major naval targets were available. Soviet surface ships are not likely to operate as commerce raiders in areas where the Soviets lack adequate air and submarine defense. Antiship mines sown by submarines and aircraft would be used in efforts to block the ports of debarkation.

58. In order to put submarines in a favorable position for interdiction against opposition, the Soviets would try to counter NATO ASW forces, particularly Western submarines in the Norwegian Sea transit lanes to the open sea. They would probably concentrate the major part of their Northern Fleet ASW forces there. They would probably attempt to saturate NATO forward ASW barriers with large numbers of attack submarines. Once into the sea lanes, Soviet interdiction capabilities in the North Atlantic probably would be good. Soviet forces available for the task, in addition to any surviving cruise-missile units, would include the Northern Fleet attack submarines not already committed to the Mediterranean.

59. *Offshore Defense and Support of Ground Operations.* The Soviet Baltic and Black Sea Fleets probably have sufficient forces to deny these seas to NATO naval forces. Their major problem, however, would be to assure access of these fleets to more open waters. In addition to denying the Baltic Sea to NATO, the Baltic fleet naval and amphibious forces augmented by Polish naval, airborne, and amphibious forces would engage in amphibious assault operations along the Baltic to support ground operations and to seize the Danish Straits. A prime Warsaw Pact objective for Black Sea fleet forces would be the Turkish Straits and bases in the Aegean; they might, however, be more effective in small amphibious assaults in support of land forces along the eastern border of Turkey. In either Baltic or Black Sea amphibious operations, success would depend mainly on the degree to which the Pact could first establish air superiority in the assault area.

D. Sustained Conventional War in Europe

60. It is clear from Soviet doctrine and training that the likelihood of sustained conven-

tional warfare in Europe is considered remote. Nevertheless, if events did not evolve as the Soviets expect—if, for example, the Pact failed to break through NATO defenses quickly or if NATO managed to limit a Pact breakthrough without a resort to nuclear weapons—then the Pact commanders would be confronted with a situation different from that for which their plans were designed. They would not necessarily be faced with the alternative of losing or escalating; they could accept sustained conventional warfare. They claim, of course, that they could successfully conduct combat operations under any conditions. But they would have some problems with conducting sustained conventional warfare.

61. The most immediate problem would be that of logistics. Present stock levels, transport, and service support capabilities are designed for a brief conventional phase followed by a short nuclear campaign. But if a nuclear campaign did not come about and if the conventional phase were prolonged, dwindling stocks would make the continuation of offensive operations difficult. Stocks and forces in the forward area would have to be replenished and the logistics system developed for continuing resupply. While supplies probably exist in the USSR to sustain operations for some considerable time, they would have to be brought forward. How fast these could be moved to the forces in the field would, of course, depend in part upon the level of combat and the effectiveness of NATO interdiction operations. But a shortage of trucks and logistic support would hinder operations, perhaps for some months.

62. Among the forces themselves, there would have to be regrouping and additional reinforcement, probably initially involving the strategic reserves. The Soviet practice of replacing whole divisions would necessitate the creation of new replacement units, which would take some time also. Moreover, tactical air forces would have to be redeployed, and

additional transport, engineer, and construction units would need to be attached to the forward commands. In sum, a rather considerable mobilization of rear services would need to take place along with regrouping and reinforcement.

63. How long conventional operations could be sustained would depend upon how rapidly the Soviet leadership could mobilize the civilian sector to provide additional manpower, supplies, and transport. In the mobilization of manpower and resources which would have to be set in motion, there would be the problem of maintaining the momentum of the economy during the changeover to a sustained war economy. Soviet practice in World War II would suggest that military requirements would somehow be met through ruthless mobilization and pre-emption of civilian supplies. But such ruthlessness would probably have to be tempered if the government wished to insure a flow of materiel, aircraft, and so on, from the civilian sector. Production of war materiel as well as operation of the economy have become much more complicated since World War II and much more dependent upon skilled manpower and efficient management. We have not studied the complications that prolonged warfare would create for the economy; until we do so we can say nothing about how seriously they might affect operations.

64. To some extent, of course, the Soviet capacity to conduct prolonged conventional warfare would also depend upon how effective the Pact forces were in preventing superior NATO manpower and resources from becoming militarily effective. Thus, the capability of Soviet naval forces would become vital. The USSR could maintain about one-third of its Northern Fleet submarine force continually on patrol in the North Atlantic—about 12 cruise-missile and 30 torpedo attack submarines. The submarine force generally has been adequately provided with specialized support ships to

meet operational requirements. During the past several years the Soviets have carried out limited support and replenishment operations in the Atlantic. Use of support groups would allow a considerable increase in the number of submarines which could be maintained on station and would extend the areas of patrol activity, but such groups would be highly vulnerable in time of war. Even so, using only home bases, the Soviet Navy would have substantial capability to conduct operations against NATO in a sustained conventional war.

65. As of the present time, resort to or acceptance of sustained conventional warfare is not a very attractive alternative to the Soviets. Provision has not been made for it, though in an emergency the means probably exist to cope with it. They have not prepared for sustained conventional war because they think it unlikely. If it came, they probably believe that they would have the time to build up the logistics and carry out the mobilization required.

E. Nuclear War in Europe

66. In the mid-1960s, the Soviets reconsidered their long-held view that war in Europe would be nuclear from the start. Their current view appears to be that they would launch a nuclear strike only when they have concluded that NATO will introduce nuclear weapons. It is unclear whether an intercontinental exchange is part of the scenario.

The Soviets are wrestling with the problem of the application of nuclear weapons to theater warfare in Europe. They are well aware of the Western advantage afforded by a large and diversified stockpile, as well as by nuclear-configured strike forces. While we do not believe the Soviets have full confidence in the validity of the scenarios under which they now train and structure their

forces, we also do not believe that they have arrived at an alternate solution to the problem. Until they do, there is a strong possibility that the Soviets would respond to limited NATO use of nuclear weapons in the manner indicated by their scenarios. However, such a response should not be considered automatic; the actual Soviet response would be the result of a high-level decision in which political as well as military considerations might play a part.

Concept

67. The Soviets' general scenario of nuclear conflict emphasizes the importance of an initial strike against strategic and rear area targets; this is intended to destroy NATO's capability for organized resistance. The concept does not envisage use of the initial strike primarily in direct support of the ground maneuver plan; on the contrary, the maneuver plan calls on the ground forces to follow-up and exploit the effects of the nuclear strike and to occupy key areas of enemy territory before NATO can recover from those effects.

68. The initial nuclear strike on land would be made by the SRF and LRA on strategic targets, by frontal weapons and aircraft on operational targets, and by nuclear rockets on tactical targets. Naval strikes would accompany the theater strikes. The Soviets may strike some 600 NATO targets initially—90 percent by strategic forces. We believe these targets would include nuclear depots and delivery means, airfields, air defense control centers, troop concentrations, harbors and naval bases, and, finally, industrial, administrative, and command centers.

69. Soviet plan the use of chemical weapons by theater field forces in a strategic nu-

clear war.¹⁷ Any decision regarding the actual use of chemical (and biological) weapons would be made at the highest levels of government, as would a decision on use of nuclear weapons. But Soviet leaders probably consider chemical weapons to be subject to considerations and constraints similar to those imposed on nuclear weapons, and if they authorized one, they should be expected to authorize the other. Once the use had been authorized, the *front* commander would plan the operations, as in the case of nuclear weapons.

Nuclear Strike in Europe

70. *Strategic Missiles.* The Soviets might use over 700 strategic missiles against Western Europe, including MRBMs, IRBMs, SS-11s¹⁸ and SLBMs on diesel-powered submarines, with a variety of nuclear loads, in the 0.6 to 5 MT range. Some of these would have a reload capability.

71. *Medium Bombers.* The Soviets have about 600 medium bombers stationed in the western USSR, and most of these could be employed against NATO. These bombers could carry various nuclear loads in the general range of one to 25 MT. Many carry ASMs, thereby giving them a standoff capability.

72. *Tactical Rockets and Missiles.* Tactical rockets and missiles could be used against some of these same targets within about 150 n.m. of the NATO frontier. But their main use

¹⁷ See Annex G, "Soviet Capabilities for Chemical and Biological Warfare".

¹⁸ Maj. Gen. Phillip B. Davidson, Assistant Chief of Staff for Intelligence, Department of the Army; Rear Adm. Earl F. Rectanus, Director of Naval Intelligence, Department of the Navy; and Brig. Gen. Edward Ratkovich, Acting Assistant Chief of Staff, Intelligence, USAF, believe the Soviets have targeted the SS-11s at two MRBM and IRBM sites primarily against the US. See their footnote 6 on page 13.

would be against tactical targets in support of the battle plan of the *front* commander. Nuclear tactical missile delivery would be by free rockets (FROGs) with a range up to 37 n.m., Scud missiles with ranges up to 160 n.m., and Shaddock cruise missiles up to 300 n.m. There are some 300 nuclear launchers in the forces opposite the Central Region of NATO now, and another 260 could be brought forward within 3 weeks. (See Table I, page 12.)

73. *Soviet Frontal Aviation* has over 600 aircraft, and Czechoslovakia and Poland some 120 more, which are suited by capability and likely deployment at M+5 and later to delivery of nuclear weapons against NATO targets. The light bombers have a radius of 400 to 500 n.m. with 3,000 pounds of internal nuclear stores while the fighters have a radius of about one-half this with 1,100 pounds of external stores. We estimate Soviet tactical nuclear bombs weigh from 2,900 pounds down to 550 pounds, depending on yield, type, and age.

74. *Reconnaissance.* A major problem for the Soviets would be near real time reconnaissance of movable targets and post-strike evaluation. Reconnaissance units of Soviet tactical aviation have been improved significantly in recent years through the continued introduction of the Brewer D, and more recently through the replacement of most Frescos with the Fishbed H. The new Foxbat will provide an additional reconnaissance means to the theater commander.

75. *Chemical Weapons.*

] combined nuclear and chemical

strikes by Pact tactical aircraft, Scuds, and FROGs. [

] We believe that the Soviets also have designed chemical ammunition for their current artillery and multiple rocket launchers.

76. *Chemical, Biological, and Radiological (CBR) Defense.* The Soviets expect to lessen their vulnerability to nuclear attack by presenting fast-moving, hard, and dispersed targets. About half of the tanks opposite NATO Central Region are T-55 and T-62 models which can be shielded against nuclear fallout, and the new BMP armored personnel carrier being issued to the Soviet forces in Europe is probably suited to use in a nuclear environment. Pact exercises emphasize dispersed operations so as to limit losses from tactical nuclear strikes. Moreover, much of Pact training consists of defense against CBR weapons. Decontamination and wash-down equipment have been issued in quantity. Detection systems have been developed for both reconnaissance and for protection of the individual soldier. Soviet research on antidotes for toxic chemicals has been both competent and extensive. (See Annex G for a more detailed discussion of Soviet CBR capabilities.)

77. *Nuclear Storage and Control.* We cannot tell for sure whether any nuclear weapons at all are stored in Eastern Europe. It is however clear that the Soviets anticipate the delivery of many, if not all, of the nuclear weapons to the forces in Eastern Europe by air in a period of tension. We have testimony

from a variety of defectors to show the basic design of delivering weapons by air from the USSR. Nevertheless, some warheads for initial strikes might be stored in the forward area.

78. We believe no nuclear warheads intended for use against NATO are in non-Soviet hands, and we estimate that, even in wartime, the Soviets would retain control over all such warheads.

Naval Strikes

79. In addition to the SLBMs, Soviet naval forces are likewise furnished a variety of tactical nuclear delivery systems. They have nuclear weapons on surface-launched cruise missiles such as the SS-N-3 on the Kynda and Kresta class cruisers and the SS-N-1 on the Kildin and Krupnyy class destroyers. It is reasonable to assume that the nuclear option is also available on the submarine-launched version of the SS-N-3. They also have nuclear AS-2, AS-5, and AS-6 missiles for air strikes. The new missiles being deployed—the SS-N-7 on the C-class submarine, the SS-N-10 on the Kresta II and probably the Krivak, and the FRAS-1 on the Moskva are almost certainly nuclear capable. The Soviets probably have nuclear torpedoes and depth bombs. [

] 80. Nuclear weapons are carried on ships at sea. Although we have no evidence of the numbers, a complete nuclear as well as conventional option would indicate that about one-half of the nuclear-capable cruise missiles on ships and submarines would be nuclear. Nuclear storage at naval bases and airfields is sufficient to contain the requisite warheads. The exact manner of control of nuclear

weapons on ships and submarines at sea is not known.

81. *CBR Defense.* The Soviets continue to construct ships with water washdown systems, hermetically sealed compartments, filtered ventilation systems, and decontamination stations that would enable those ships to carry out their assigned missions in a toxic CBR environment. Extensive training is provided for the maintenance of a permanent, high level of CBR readiness for the various naval units.

F. Limited Nuclear War in Europe

82. As indicated at the beginning of this chapter (paragraphs 18 and 19), the Soviet concept of nuclear war in Europe, [] presents some serious questions. If, indeed, the Soviets conceive of war developing as outlined in their scenarios, they are inhibited from any conventional action—or even from political moves which might threaten to involve conventional forces—by their apparent belief in rapid escalation into general nuclear war in Europe. And, they would recognize that a general resort to nuclear strikes in Europe could provoke an intercontinental strike by the US.

83. Some Soviet military writers have recognized the problem and have considered the possibility of waging war in Europe with tactical nuclear weapons in a way which did not escalate into general nuclear war. The possibility that political pressure could be employed to inhibit NATO's use of tactical nuclear weapons is recognized and the initial use of nuclear weapons by NATO may not automatically result in a large-scale Pact response.

84. Warsaw Pact forces do have some capability to exercise a variety of nuclear options

short of a strategic strike. The delivery systems available, especially the tactical rockets and missiles and Frontal Aviation, could be limited to purely military targets and even to those close to the area of direct contact between ground forces. Their targeting doctrine already calls for use of nuclear weapons against maneuver and support elements, and their troops are trained and equipped for operations in a nuclear environment.

85. The Soviets would be limited, however, by their lack of a variety of low-yield nuclear weapons comparable to those possessed by the NATO forces. In the late 1950s the Soviets indicated an intent to develop a nuclear capability for their larger conventional artillery pieces and a doctrine for use of this capability, but the project was dropped. It is within Soviet technical capability to develop nuclear artillery rounds; []

[] there is no evidence that they have actually done so. Similarly, while they probably have the technical capability to create nuclear warheads for tactical SAMs, atomic demolitions, and other small tactical warheads []

[] we have no indications they have done so.

86. The evidence does not exist to make a judgment as to whether the Soviet leaders would, when confronted with a NATO use of tactical nuclear weapons on a local scale, reply in kind and attempt to keep the exchange limited, or would accept one of the other options open to them—stop the conflict, go to general nuclear war in Europe (with the danger of a US intercontinental attack), or resort to an intercontinental attack themselves. So long as they do not go further than they have in exploring the possibilities of the limited nuclear warfare option, developing the weaponry for

it, and training their forces for it, this option does not seem to be a very promising one.

III. SOVIET CAPABILITIES IN ASIA

A. The Sino-Soviet Confrontation

87. Early Soviet military dispositions in the Far East were directed against US forces on the Pacific periphery and against US allies along this periphery. The ground forces in Siberia and the Far East were primarily for security of the Trans-Siberian Railroad. By the mid-1960s, however, the Soviet leadership had come gradually to the idea that the growing instability of their relations with Communist China represented a greater danger of war than did their more stable relationships with the US and its allies.

88. The traditional hostility of China and Russia over the border lands taken over by Russia in the past few centuries still is the basis for much of the Chinese attitude. This hostility was exacerbated by China's desire to control its own nuclear capability on the one hand, and by the subsequent Soviet cutoff of further aid on the other. It was given an ideological manifestation by the differing approaches of the leadership of the two countries to the common legacy of communism. The vilifications incident to the attempt of the new Soviet leadership early in 1965 to reach some accommodation with China probably only convinced the Soviet leadership that their future relations would be more on the basis of enmity than of friendship—certainly so long as the Maoist leadership continued. Continued border incidents, reaching a height in 1969, no doubt only confirmed the Soviets in this belief.

89. In 1965 the Soviet leadership began a military buildup along the Sino-Soviet border

that continues to this day. It is clear that the initial impetus to the buildup was a defensive one—to prepare the USSR for any eventualities stemming from the unstable relations between the two countries. The fact that the buildup has already been stretched out over a six-year period and that at present rates it will take at least another couple of years to fill out the present force argues against a Soviet plan for early deliberate aggression. On the other hand, a gradual buildup was the only way in which a force capable of major offensive operations against China could have been developed without substantial redeployment of units earmarked for early commitment against NATO or straining the civilian economy. Even so, the buildup opposite China has required some slowdown in the modernization of theater forces opposite NATO and has involved the movement of some air regiments from the west.

90. The generally conservative approach which the Soviets take to defense of interests vital to the USSR has resulted in their building a force opposite China that would be a clear deterrent to any Chinese action, not only in a nuclear confrontation, but also in a conventional war. To be most effective as a deterrent, geography and Soviet military doctrine dictate that over the longer term these Soviet forces be structured and deployed for offensive operations. Static defense along the border would require a much larger force and would almost certainly lead to some shifting of units from the west. Defense in depth is denied to the Soviets in much of the border area because the major developed areas and lines of communication run parallel and close to the border. Consequently, the Soviets will probably maintain the China border force in an offensive posture—regardless of their strategic intent. But in creating a force suitable for of-

fense, the Soviets are placing themselves in a position to initiate hostilities should they desire to do so.

91. Chinese strategic capabilities remain modest compared to those of the USSR, but they are also growing steadily. They may have deployed a few 600 n.m. MRBMs. An IRBM capable of reaching the Volga is probably nearing deployment. The Chinese are also working on a missile probably capable of reaching any part of the USSR. This missile could be ready for deployment in late 1973 or early 1974. Moreover, the Chinese are adding some 25 TU-16 Badger jet medium bombers a year to their present force of about 30. Each of these could carry a 3 MT nuclear bomb. The Chinese are also building diesel-powered torpedo attack submarines and a substantial but still thin air defense system with interceptors and the Chinese equivalent of SA-2s. This force probably would not be enough to halt a Soviet bomber attack, but it would make repeated attacks costly.

92. China's prime military counter to the USSR is the obvious one of manpower. In particular, Chinese divisions deployed in Manchuria and eastern Inner Mongolia represent twice as much manpower as on the Soviet side. But the best of the Chinese divisions have barely a third of the artillery and wheeled vehicles and a sixth the tracked vehicles of their Soviet counterparts. The Chinese have no capabilities for tactical nuclear delivery by rocket. The IL-28 Beagles could be used for delivering nuclear weapons but have not been exercised in this role.

93. Soviet discussions of the nature of a war with the Chinese have not appeared in the military literature as have discussions about

a war in Europe.]

]The creation of a strong striking force in the Transbaykal MD also suggests Soviet preparation for the contingency of a strike to cut Manchuria off from China proper. Soviet forces in the Central Asian MD also would be capable of occupying the Dzungarian Basin of the Sinkiang Military Region (MR). Soviet forces opposite China are not strong enough, however, to permit a Soviet conquest of China proper. We do not know the nature of Soviet plans in the event of hostilities with China, but the size and deployment pattern of their forces suggests that the Soviets wish to be able to take the offensive, either as a counter to a Chinese invasion or in support of a political decision in the Kremlin to take military steps against China.

B. Force Posture Opposite China¹⁹

94. *Border Guards.* The 50,000-55,000 men in KGB Border Guard units stationed immediately in the Sino-Soviet border area have responsibility for security of that border. These troops provide a light screen against infiltration by unauthorized border crossers and can also provide warning in the event of attack. Recently, however, at least 7 battalion-sized heavy combat border guard units have been

¹⁹The buildup of Soviet forces along the Sino-Soviet border is discussed in greater detail in Annex E. The location of Soviet divisions, Frontal Aviation regiments, and Scaleboard units are shown in Figure 4 following.

Deployment of Soviet Forces Along the Chinese Border

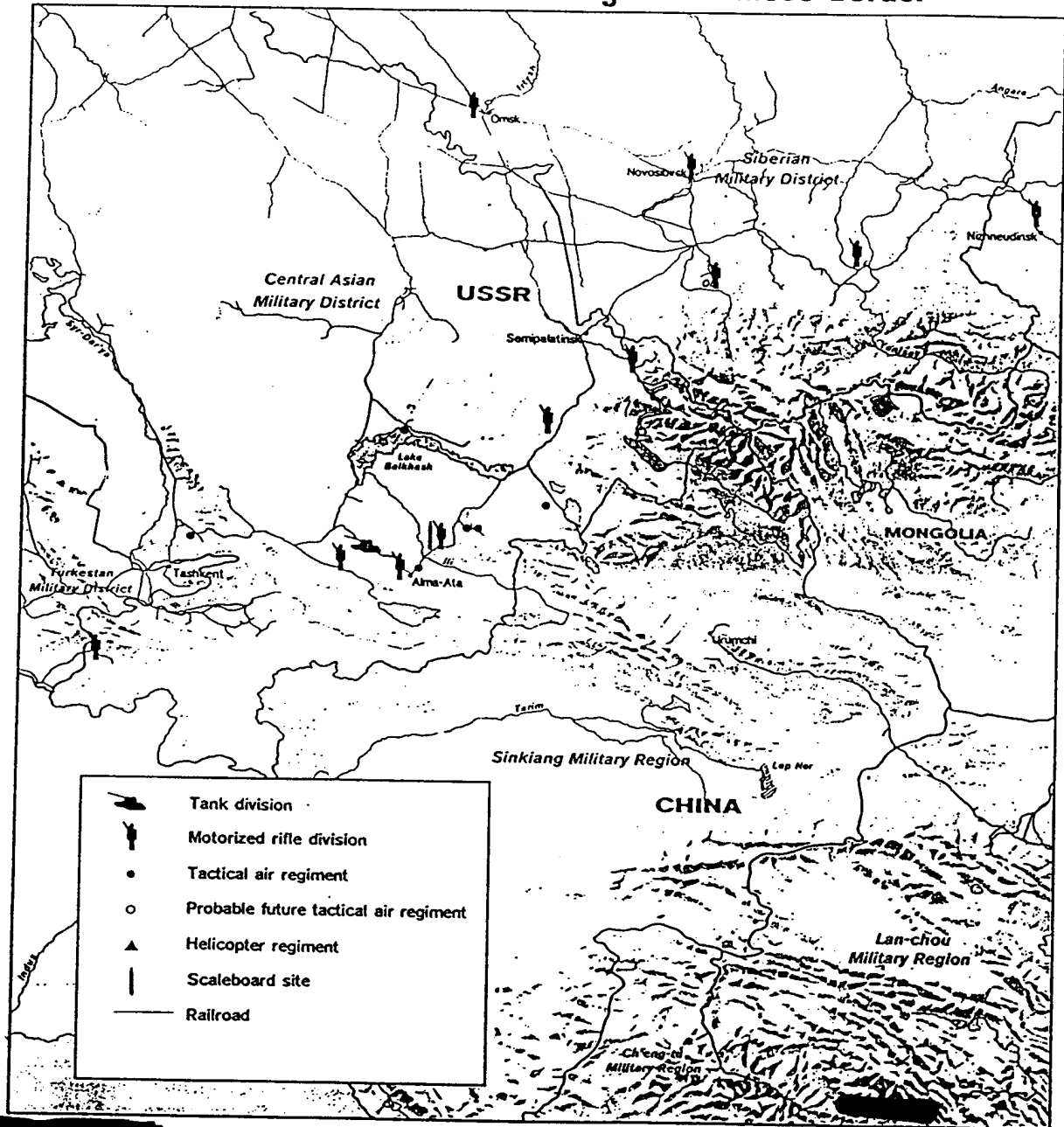
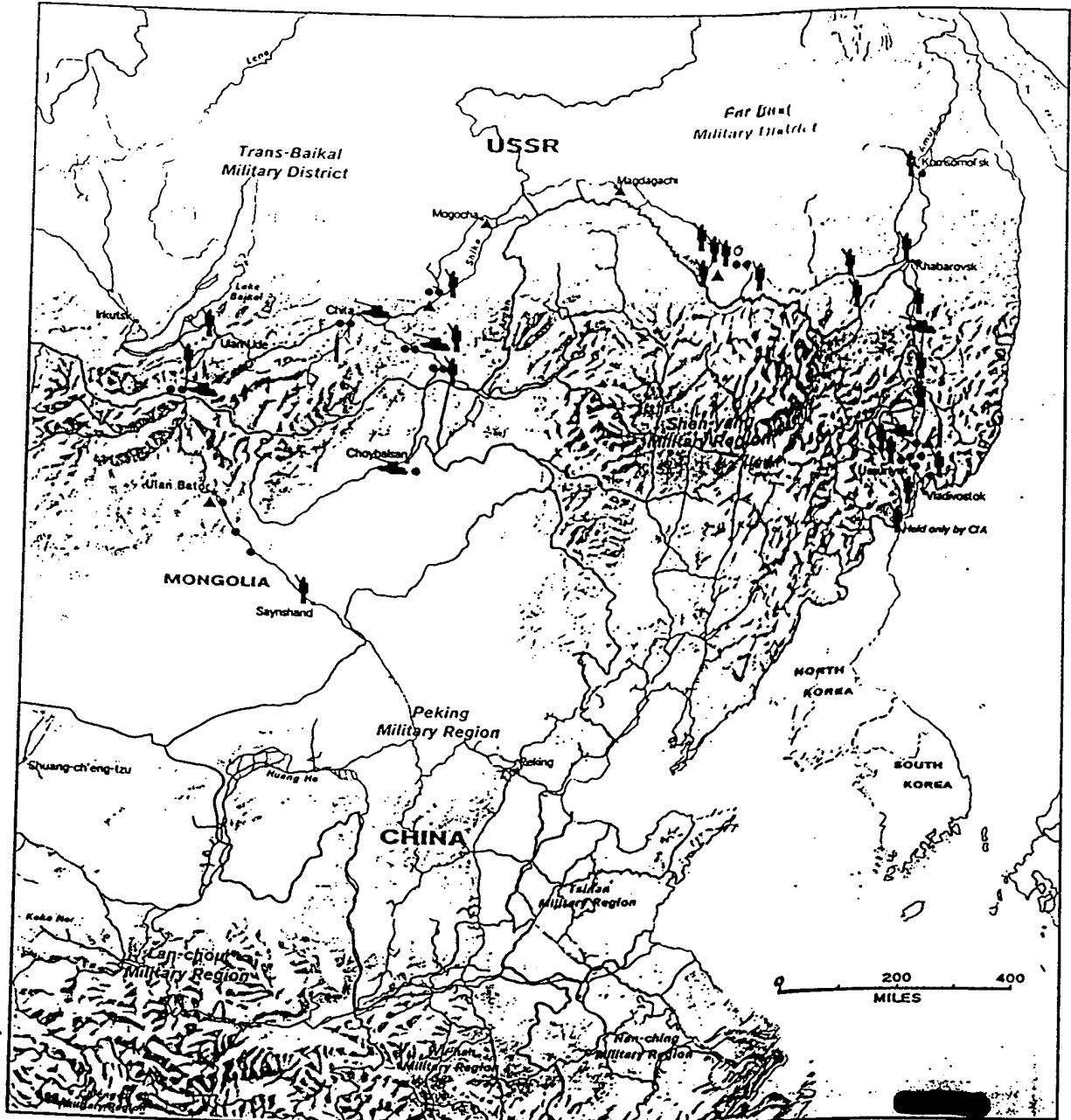


Figure 4



organized, each with 10 to 20 tanks or APCs. These units provide the border troops with a capability for handling skirmishes without the help of regular ground force personnel. In time of war, the border guards would probably be used to supplement regular army troops for rear area security.

95. *Ground Forces.* Since the mid-1960s, Soviet ground forces in the regions near the Sino-Soviet border or in Mongolia have increased from about 15 divisions to at least 36 divisions. Growth of these forces continues, but the emphasis in the past few years has apparently been more on filling out and bringing up to strength divisions previously formed, rather than starting new ones. As a consequence, although only 2 divisions have been formed since NIE 11-14-69, "Soviet and East European General Purpose Forces", dated 4 December 1969, SECRET, CONTROLLED DISSEM, several have been brought up to combat strength from reduced strength levels.²⁰ Almost all of the remaining divisions appear to have some regiments ready to fight without further augmentation. The 36 or so divisions are organized into 9 to 12 armies or corps—3 to 5 in the Far East MD, 2 to 3 in the Transbaykal MD, 1 in Mongolia, and probably 3 in the Central Asian MD.

96. The development of combat support for theater forces opposite China generally does not appear to have kept pace with the increasing number of divisions. Some 30 FROG battalions with over 100 launchers are believed to be in divisions along the border, but there are only 4 Scud brigades with some 36 launchers. This nuclear support is lighter than opposite

²⁰ In NIE 11-14-69, we estimated that 27 divisions were stationed near the Sino-Soviet border. Since that time we have reassessed that estimate, and now believe some 34 were there then.

NATO, but it is supplemented by at least one 300 n.m. Shaddock cruise-missile battalion and by 3 brigades (27 to 36 launchers) of the 500 n.m. Scaleboard, units of which are deployed only opposite China. Army- and front-level conventional artillery has, however, been provided in the Maritime Province at levels nearly twice that of Soviet forces facing NATO. Elsewhere, non-divisional field artillery is present at levels below those in the West.

97. *Personnel Strength.* The personnel strength of the Soviet ground forces opposite China probably has reached some 350,000 men: 215,000 in divisions, and 140,000 in support. These forces currently are equipped with some 6,600 tanks, 3,800 artillery pieces, and about 200 nuclear launchers. If these divisions were to be filled out to full combat strength, and the same level of support furnished as found in the forward area opposite the Central Region of NATO, the total force would approximate 650,000 troops, 8,200 tanks, 5,400 artillery, and 300 nuclear launchers.

98. *Frontal Aviation.* During the same time that the ground forces were being built up in the late 1960s, Frontal Aviation was increased from a single TAA of 190 combat aircraft and about 40 helicopters to about 1,000 combat aircraft and 300 helicopters. A new TAA was developed in the Transbaykal MD and a third currently is being formed in the Central Asian MD.

99. *Naval Forces.* The Soviets have in the past year increased their capabilities in the Pacific by the transfer of the first Kresta I CLGM and the third Kashin DLG plus the activation of a reserve Sverdlov-class light cruiser. This brings the total number of major combatants to over 50, and enhances the anti-ship, ASW, and command and control capabilities of the fleet. The 14 E-II SSGNs and

the 4 J diesel-powered cruise-missile submarines (SSGs) in the Pacific Fleet, in combination with the 25 Bear D target acquisition aircraft and about 95 ASM equipped Badgers, are best suited for the antiship strike role. Compared to this force, the Chinese have some 42 submarines and 30 major surface ships, of which 4 carry cruise missiles.

100. *Strategic Defenses.* Soviet strategic air defenses in the border area have been improved in recent years, but some of this improvement probably would have taken place even had there been no Sino-Soviet dispute. As of now, the Soviets have in the border some 200 SAM launchers and about 520 interceptors, including some 245 Mach 2 all-weather interceptors armed with air-to-air missiles (AAMs). Against these air defenses, the Chinese have about 30 medium bombers and about 360 IL-28 light bombers.

101. *Strategic Offensive Forces.* Peripheral strategic attack forces deployed in the Far East are believed to have been targeted against the US and allied installations in the area. Over time some of these and other Soviet strategic attack forces probably have been assigned targets in China, but it is not possible to determine the extent. There are 215 heavy and medium bombers with the Far East Long Range Air Army within striking range of key Chinese targets—about the same number as in 1965. We believe that during the past few years all MRBMs and IRBMs in the Soviet Far East have been phased out.

102. *Logistics.* The potential vulnerability of the Trans-Siberian Railroad has caused the Soviets to stockpile relatively larger amounts of ammunition, petroleum, oil, and lubricants (POL), and equipment behind their forces along the China border than behind their

forces in Europe. There is also evidence that the Soviets are prepositioning equipment in the area. The widely separated locations along the border have caused the Soviets to rely more on air support; the concentration of helicopter lift is proportionately greater along the border than opposite NATO.

Mobilization and Reinforcement

103. The present buildup activity does not provide a clear indication of the number of divisions in the border area that the Soviets plan to bring to combat strength. Many divisions are continuing to receive personnel and equipment; some of these probably will reach combat strength in the next year or so. Others may stabilize at less than full wartime strength. If so, it would suggest that the Soviets intend to rely on a mobilization plan similar to that for the Soviet forces opposite NATO. There the Soviets maintain only some of the divisions at full strength. The others are kept at reduced strength but can be filled out with reservists and civilian vehicles within about one week.

104. *Mobilization.* A mobilization plan similar to that used in the European USSR would probably not work as rapidly, however. The required reservists may not be as readily available, as the divisions are spread more thinly in less densely populated areas. The Soviets may believe that the relatively immobile Chinese forces do not constitute a threat requiring the rapid mobilization capability that is needed opposite NATO. They may therefore be content with slower mobilization. One-fourth of all the Soviet males of military service age live in areas east of the Urals. The Soviets also have numerous truck parks (*avtokolonnas*) in the East. Mobilization procedures have not been exercised in the area opposite China as they have in the west; and we have not studied

the bases for such mobilization as extensively. The Soviets do have tank and ordnance parks at points along the Trans-Siberian Railroad and in the Far East MD. These could help to fill out existing divisions. Army and *front* support, however, would have to be transferred from other areas of the USSR, as they have not been established (even in cadre form) in many parts of the Transbaykal and Central Asian MDs.

105. *Reinforcement.* Some 8 divisions in the Siberian and Turkestan MDs are probably available as reinforcements for the border area. Three additional divisions—located on Sakhalin Island and the Kamchatka Peninsula in the Far East MD—are considered to be intended for contingencies involving Japan or US forces in the area, but could also be used as reinforcements in the event of hostilities with China. The 3 divisions in the Ural MD could also be used as reinforcement against China. Excluding an airborne division in Turkestan, all of these divisions are in relatively low states of combat readiness, however, and would need substantial mobilization. With the exception of 1 division in Siberia, none of these 14 divisions appears to have been strengthened since the mid-1960s; in fact, several of them were reduced in strength to form part of the buildup for new divisions near the border.

C. Force Capabilities

Capability to Defend

106. The Soviet force on the border already exceeds that required to repel any force the Chinese are likely to send against the USSR in the next few years. The Soviet forces are entirely motorized, giving them great superiority over the Chinese in mobility. This asset, combined with an overwhelming advantage in tanks and conventional fire support as well

as tactical nuclear fire support, probably provides the Soviets the capability to respond quickly and forcefully to a Chinese force invading along any likely attack route into the border area. Even assuming that all Chinese forces are equipped on a par with their best units (which is unlikely), the Soviet force would have about four times the number of tanks and about twice the number of artillery pieces. Moreover, the Soviets could quickly achieve clear air superiority in the area.

107. For the Chinese to mount a serious threat against the USSR at any point on the border would require a massive concentration of troops. Except for two divisions opposite the Vladivostok area, however, and several smaller units elsewhere, the Chinese forces are deployed well back from the border. The time it would take to move these into position to launch a major attack on the USSR would permit the Soviets, with their superior mobility and good intelligence resources, to re-deploy forces to block the attack and to launch spoiling attacks of their own.

108. In the Vladivostok area the Chinese could mount an attack with perhaps as many as 200,000 troops in a matter of a few days. This is the area of heaviest concentration of Soviet forces in the border area, however, and given the vast Soviet superiority in firepower and air support, it is by no means certain that a Chinese force with even a 3:1 or 4:1 manpower advantage could overrun Vladivostok before reinforcements arrived.

109. In any event, the Soviets probably have sufficient tactical nuclear weapons in the area to deal with any Chinese attack which they could not repulse with conventional weapons. They have about 200 tactical nuclear rocket and missile launchers (including the 500 n.m. Scaleboard), 125 tactical aircraft configured for nuclear as well as conventional delivery, and over 200 medium and heavy bombers.

Capability to Attack

110. If the Soviets were to undertake offensive operations against China, the overall pattern of the buildup of Soviet forces along the border, together with the natural and political geography of the border area, suggest the Soviets would plan the creation of at least 3, possibly 4, fronts. Typical Soviet and East European potential fronts consist of about 3 armies containing 10 to 12 divisions, and a TAA of 250 to 300 combat aircraft, together with front support. Potential fronts opposite China can be defined as follows, with current forces as indicated:

Region	Armies/ Corps	Divisions	Tactical Aircraft
Maritime Province	2-3	9-12	200
Transbaykal MD and Mongolia	3-4	11-12	400
Central Asian MD	3	7	210

111. A fourth potential front might be created in the Far East MD opposite northern Manchuria. Although 2 armies, containing 9 divisions, are apparently being developed in this area, there is no TAA. Three tactical air regiments and 2 independent squadrons are located in the northern Far East MD, however, and in wartime these could be subordinated to a separate front in this area. If the Soviets were to create an additional front they might add more divisions and 1 to 2 more tactical air regiments to create an air army.

112. By filling out all existing divisions in the border area, and providing non-divisional support in the proportions estimated for the force opposite NATO, the Soviet troop strength would approach parity with that of the Chinese in the border regions. Some 455,000 Soviet troops would be positioned against the 435,000 Chinese troops in the Shenyang MR, most of which are now garrisoned in southeastern Manchuria. About 115,000 Soviet troops would be deployed in

the Central Asian MD across the border from the 80,000 Chinese troops scattered throughout the Sinkiang MR.

113. These augmented Soviet forces would have about a 6:1 advantage in tanks and at least a 2.5:1 advantage in conventional artillery. This force would also have approximately 300 missile and rocket launchers for direct nuclear support. Completion of the developing air army in the Central Asian MD would bring the tactical combat aircraft in the border area to about 1,100.

114. These full-strength Soviet forces, extensively supported by medium bombers and provided good air cover, would be capable of major offensive operations in the peripheral regions of China and probably could advance several hundred miles into the Chinese border provinces. Such operations would not have to be limited to attack and withdrawal. So long as they do not penetrate beyond the border provinces, the Soviets probably could occupy large portions of territory, including Manchuria, the eastern part of Inner Mongolia, and the Dzungarian Basin in Sinkiang. With complete air superiority, it is likely that they could accomplish these operations without using tactical nuclear weapons; tactical nuclear strikes would ensure their success. Operations such as these would not, of course, destroy Chinese capabilities to wage war, and the Soviets— if they undertook them—would have to recognize the possibility of protracted hostilities.

IV. FUTURE FORCES

A. Predicting the Future

General Considerations

115. There is no direct evidence concerning Soviet plans for the future composition and weaponry of forces. Such information is

known to only a very few within the Soviet hierarchy, and it is not known to us. The fact that economic planning in the USSR involves five-year time spans, and that a new five-year plan has recently been approved, indicates that an allocation of resources to military purposes has been planned at least that far into the future. But—as in Western nations—even programs which have been approved probably face annual reviews and would be subject to cancellation and revision at any time.

116. Some individual weapon systems can be projected confidently a few years into the future, especially where these systems are replacements for existing ones. The past is an uncertain guide, however, in the case of new types of systems because the increasing complexity, capability and cost of follow-on systems often result in a less than one for one replacement. This is particularly the case with aircraft and submarines. Some ground force equipment could prove out the same way. Weapons systems such as tactical rockets and missiles have no forerunners, and the ultimate level of deployment is difficult to predict without knowing the specific operational concepts underlying the decision to introduce them. In any case, the further into the future one moves the less helpful is knowledge of current production. Our problem in estimating future forces and capabilities involves not only judgments about the momentum and direction of specific on-going programs, but also judgments about possible major changes of programs brought on by revisions of strategy and policy.

Inertia

117. Inertia of course plays a role in Soviet force development. The Soviet bureaucratic process is cumbersome, as it is in any large organization. It is difficult to stop something once it is started. The tendency of interest groups and institutions to keep on doing what

they are doing gives a semiautonomous nature to trends in the development of weapon systems and force elements. The Soviets have, however, stopped programs which failed to meet their goals, either in the developmental stage or after short production runs. In addition, where development of dual systems for the same mission is undertaken, the losing design suffers an early demise. The ground forces have provided a particularly favorable climate for bureaucratic inertia because of their size, the traditional nature of their tasks, and the lack of regular contact with hostile forces. Naval general purpose forces have also suffered from such lethargy, but changing missions have dispelled much of this in the past several years.

Technological Advance

118. Technological advance is the enemy of inertia, and the USSR has maintained a vigorous R&D effort. But the impact of technological advance is more in the fields of missiles, aircraft, and submarines, than in conventional ground and naval arms. One of the more interesting changes has been the development of systems for more than one mission. One example is the SS-11 missile (since 1968), capable of both intercontinental and peripheral missions. There are also new multimission naval vessels such as the Krivak DDGM.

119. Much of the equipment used by the ground forces continues to meet requirements which change little with the passage of time, and the pace of change tends to be slow. New models often come into the forces over as long as 10 years, they are not subject to rapid obsolescence, and there are few technological breakthroughs which warrant complete replacement of inventory. When expansion of the ground force proved desirable because of the China problem, it was accomplished by not retiring equipment and aircraft. There are active in the general purpose forces today

some tanks, aircraft, and ships which are 20 years old. But as new models replace old ones the cumulative effect over a period of years can be substantial.

Resource Constraints

120. Resource constraints upon the development of Soviet forces are relative, not absolute, and derive mainly from political and social decisions. Soviet industry could support a substantial increase in defense output, and in many cases could do so without increasing capacity. In particular, land armaments, aircraft, warship, and missile production could be easily expanded if the Soviets desired to utilize existing capacity for these purposes. But unutilized capacity is being given to consumers' goods, and the interest of the Soviet leaders in SALT is a partial consequence of a desire to avoid the economic cost of maintaining, or enlarging, existing forces at higher levels of effectiveness. Moreover, theater forces—because of their large size—are in sharp competition with the civilian sector, especially for such items as labor, surface transport, food, and basic raw materials (steel, rubber, and fuel).

Geography and History

121. Geography and history have contributed in important ways to the size of the Soviet forces. Invasion and occupation by forces coming from both East and West have made the Russians very wary of any powerful force—especially one technologically superior—on their borders. This, together with the length of those borders and the hostility of the nations across them, has contributed to—if not dictated—the size and disposition of the Soviet theater forces. Geography and history have also affected the structure and size of the naval forces. The fact that two of the fleets can be bottled up in Baltic and Black Seas has caused the Soviets to keep the bulk of their

naval forces in the Northern and Pacific Fleets. The fact that the latter two fleets exist derives from the difficulty and length of passage from East to West and vice versa. The Soviets therefore—if they are to maintain an effective presence in the oceans, a reasonable sea defense of their shores, and a capacity to operate militarily on the high seas—must aim at a large navy with considerable versatility.

Perception of the Threat

122. The way in which the Soviets act upon the considerations noted above depends very heavily upon how they perceive the threat. The pace at which technological improvements are introduced and at what cost to the civilian economy will reflect how urgently the need for improvements or expansion is viewed. While historical factors in Soviet thinking tend to change only slowly, the relation between the threat and geographical dispositions is quite obvious. The existence of powerful forces under the control of governments viewed as hostile is, of course, reason enough for maintaining military forces. But there are varying degrees of seriousness with which the threat from such forces can be viewed, depending upon the current policy of their governments, the armament and state of morale of their forces, etc. Moreover, military forces have other uses than deterrence or defense; they are a diplomatic weapon, a means of exerting influence, and in general a major factor in the policy decisions of other nations.

123. In the current phase of military and political relationships in Europe, the Soviet leaders probably do not regard the threat from NATO as an immediately urgent one. The political atmosphere in the US and Western Europe, the West German Ostpolitik and the generalized support and acceptance accorded it, US interest in MBFR, progress on SALT, and widespread West European interest in a European Security Conference—all could

be regarded by the Soviets as indicating little need for augmenting forces in the west and even as opening the possibility of some reductions.

124. By contrast, the deterioration of Soviet-Chinese relations over the past decade, the events of 1969 on the Soviet-Chinese frontier, and the signs of improvement in US-Chinese relations have lent a sense of urgency to the building up of Soviet military strength in Asia. It seems most unlikely that the Soviet leaders in the current phase would be giving any thought to the reduction of that strength. Instead, it would seem more likely that they would complete their present buildup by filling out existing divisions and backing them up with enhanced support forces. They might even be giving consideration to increasing those forces to the point of creating a substantial strike force for operations in western and northern China and Manchuria.

125. But the current phase of relationships and forces are not the whole story. The Soviets maintain forces in Eastern Europe also to exercise a measure of control over governments and population, and the existence of a credible threat from NATO facilitates this politically. The desire to maintain control also serves to set limits to possible force reductions. The Czechoslovak crisis of 1968 would, for example, have given the Soviets reason to question the utility of relying heavily on allies, and doubts on that account might be a reason for maintaining, or even adding to, Soviet forces. Extensive reductions are probably also foreclosed by Soviet fears of possible shifts to more militant policies on the part of Western states. They probably anticipate that significant political change in China would occur after the passing of Mao, but they probably also do not believe they can predict whether such a change will increase or decrease Soviet-Chinese tensions. Finally, as a great power

and self-styled leader of the international Communist revolution, the Soviets proclaim and believe that they must maintain a strong military posture and possess some visible capability to come to the aid of their friends.

Strategic Concepts

126. Soviet doctrine calling for early and massive use of nuclear weapons in a war in Europe was formulated a decade ago. While we have seen some evidence that this doctrine has been questioned, we have seen no evidence that an alternative has been developed. The Soviets have always believed it would be difficult to control or limit hostilities once nuclear weapons had been used; they may also believe that their doctrine has a deterrent effect in itself—that is, that NATO would choose not to allow a war to begin rather than to face early and massive nuclear warfare. But this sword cuts both ways; their restricted capability to fight limited nuclear wars at graduated levels of effort narrows their flexibility; thus, they could be put into the position of having to choose between standing down themselves or going nuclear on an intercontinental scale.

127. An alternative to this dilemma for both sides would be to keep hostilities conventional. At the moment, the problems which the Soviets would face fighting a prolonged conventional war probably do not trouble them very much, perhaps because they believe that NATO does not intend—and is not now well prepared—to fight a conventional war. But the Soviets must also recognize that NATO would have some significant advantages, especially in economic resources and population, over the Pact in sustained conventional warfare. Therefore, if the Soviets came to believe that the chances of war breaking out in Europe were likely to rise, they might wish to widen their options by improving their capabilities for sustained

conventional warfare and by developing a better means of conducting limited nuclear warfare at various levels of effort.

B. Areas of Modernization

128. All large military forces, regardless of the various doctrinal, political, historical, and economic decisions which affect their structure, are concerned with the question of keeping up to date whatever the existing structure may be, and the Soviet forces are no exception. Later on we will discuss how they might project their forces depending upon how they might view the need for doctrinal changes, the changing international relations of the USSR, or their overall military posture and national policy. In this section, we will discuss areas in which modernization seems likely to take place in the short term. How fast they press modernization is, of course, not unrelated to political and doctrinal considerations, but unless some major decision is made the pattern now in existence seems likely to continue for a few years at least.

In the Theater Forces

129. Soviet ground forces will continue to be modernized with the introduction of weapon systems currently in production, probably followed by new systems by the mid-1970s. Soviet medium tank production probably will continue at its present pace. In the early 1970s a new Soviet tank (which is now under development) with improved firepower and night vision and range-finding equipment will enter series production, and by the late 1970s it could account for about one-third of the tank force. Production of amphibious APCs will probably increase as the Soviets attempt to meet their APC requirement of one per squad. The Soviets will also produce more helicopters for lift of personnel and cargo and provide additional air defense systems for protection of their field forces against the low-altitude threat. In tactical nuclear rocketry,

missiles of the Scud family will continue to be deployed, and Scaleboard will probably be more widely deployed. Soviet logistical capacity will improve through the addition of larger numbers of medium and heavy cargo carrying vehicles.

130. The Soviets have initiated production of three new tactical aircraft since 1968, and these probably will be delivered to Frontal Aviation through the mid-1970s. Two of the aircraft are variable geometry-winged fighters for air defense and ground attack, and the third is a Mach 3 aircraft that is expected to be deployed in the reconnaissance and nuclear strike roles. Developmental test programs have been identified which suggest that a new fighter bomber will enter service in the next three to four years. Deployment of the new aircraft probably will be accompanied by the phasing out of older model fighter and light bomber aircraft introduced in the mid-1950s, which still comprise over a fourth of Frontal Aviation aircraft. Deliveries of mobile SAM systems now being deployed with *front* and army air defense units probably will continue through the late 1970s.

In Strategic Forces for Attack in Eurasia

131. The only discernible trend in land-based missiles is the introduction of weapons of ICBM range in the peripheral attack forces.²¹ In SLBMs at least one G-class ballistic missile diesel submarine is being retrofitted, but we now have no evidence upon which to base a confident estimate of what missile is to be installed.

²¹ For the views of Maj. Gen. Phillip B. Davidson, Assistant Chief of Staff for Intelligence, Department of the Army; Rear Adm. Earl F. Rectanus, Director of Naval Intelligence, Department of the Navy; and Brig. Gen. Edward Ratkovich, Acting Assistant Chief of Staff, Intelligence, USAF, see their footnote 6 on page 13.

132. The new Mach 2 Backfire swing-wing bomber will probably be deployed in the LRA. It will be well suited for peripheral attack. It will probably carry both bombs and ASMs, and could achieve an initial operational capability as early as late 1973 if existing weapon systems are used. The Badger is probably being retrofitted with the AS-6 and will probably be kept in the force through the decade.

In General Purpose Naval Forces

133. Construction of current classes of submarines, cruisers, destroyers, and patrol craft will continue through the mid-1970s. Decline of submarine strength as a result of systematic retirement of older less capable diesel units will be offset by an increase in the number of nuclear-powered submarines to some two-thirds of the force, with a net effect of improving offensive and defensive capabilities in undersea warfare. Major surface ship construction almost certainly will continue to emphasize multipurpose ships with improved ASW, antiship, anti-air, and electronic warfare capabilities. Follow-on classes will probably be constructed in the late 1970s. As a result of these changes, the composition of the surface combatant fleet could change significantly; missile-equipped combatants could increase from 23 percent of the major surface ships in 1971 to some 60 percent by 1979.

134. As Soviet fleet capabilities improve, naval air forces will continue to be used to support the missions of countering submarines and carrier task forces in the open ocean. Soviet capabilities in ASW sensors, weapons, and tactics will almost certainly grow. There will be more widespread deployment of the May ASW patrol aircraft, ASW sensors, and weapons stores. Naval Badger aircraft are probably being equipped with the AS-6 missile indicating Soviet interest in keeping the Badger

in naval aviation for some time to come. The Backfire might be deployed as an ASM carrier in the Soviet Navy.

C. Illustrative Alternative Force Postures

135. The analysis and information in the preceding section suggest strongly that certain improvements and expansions will take place in the armament of the Soviet forces. But there is much that we do not know and indeed much that is unknowable. Our lack of knowledge of specific plans for the size, composition, and weaponry of Soviet forces springs not only from intelligence gaps but also from the likelihood that the Soviet leaders have not made decisions on some important matters. On some questions, they may simply be marking time until requirements can be more clearly discerned; moreover, new questions requiring decisions will arise from time to time as the decade progresses.

136. We have, therefore, adopted the analytical tool of four alternative illustrative force postures, with the differences between them tied principally to ways in which the threat might develop or be perceived. They also take account of some basic Soviet policies, such as modernization of the navy, and the opportunities and limitations produced by technological considerations. There are, of course, a floor and an upper limit to alternative postures. At the lower end, some of the geographical, historical, and ideological considerations we have outlined come into play—the Soviet fear of invasion, the length of Soviet borders, need for expansion of the navy in order to maintain an effective presence on the high seas, the desire to maintain Soviet domination in Eastern Europe, and the overriding necessity of protecting the homeland. At the upper end are the constraints of time and resources. For general purpose forces, the task of enlarging, training, and re-equipping takes

considerable time and means that, even when projecting forces to 1979, there are measurable limits to what can be done.

137. There are, of course, an almost infinite number of possible force postures. By collecting them into four broad categories, we have in effect ignored the shadings and variations which exist. Thus, Postures A, B, C, and D as described below can have a variety of stages between them, not only in the basic international circumstances which we describe but also in the inferences—in terms of force size, structure, and armament—which the Soviet leaders might draw from them. Thus, the appearance of four postures and the tables which illustrate them tend to create an illusion of knowledge and precision which do not exist.

138. *Posture A* is based upon the assumption that many of the current steps toward the easing of international tensions will continue for some time, that is, that an atmosphere of détente will dominate the next five years or so. In more specific terms, it assumes that some agreements at SALT will be initialed and that arms control talks will continue, that talks to achieve MBFR will take place and produce some results, that the West German Ostpolitik will not be abandoned and the treaties negotiated to date will be ratified, that further movement toward détente in Europe will take place and US-Soviet relations will improve, and that there will not be serious crises outside the area of Europe to disturb US-Soviet-West European relationships. *Posture A* does not assume a significant improvement in Soviet-Chinese relations, but it does note that these relations have slightly improved and might continue to do so.

139. *Posture B* assumes that progress toward the easing of international tensions has stopped. SALT and MBFR talks have not produced major agreements; the Ostpolitik founders and the treaties remain in limbo; as a consequence détente in Europe does not

go forward, though relations do not become bitter. Soviet-Chinese relations are clouded by rising suspicions, and the Soviet leaders are mistrustful of US-Chinese relations. Tensions in Arab-Israeli relations continue and may have risen. In short, the Soviet leaders are uncertain about the future; they are unwilling to aggravate the situation by engaging in enlarged military programs at high economic costs, but neither are they willing to assume any risks by curtailing existing programs.

140. *Posture C* assumes that international relationships have deteriorated. Negotiations have broken off with mutual recriminations. Ostpolitik has foundered. The Chinese have become more truculent, perhaps because their relations with the US have improved, perhaps because their military capabilities have improved, perhaps because anti-Soviet elements are in political ascendancy. In sum, the Soviets have become disappointed with the policy of détente, have become fearful of a future conflict, and have concluded that they ought to strengthen their forces by speeding up modernization, by developing greater flexibility, and by new deployments and increased readiness.

141. *Posture D* assumes that international relationships not only have deteriorated but that the Soviet leaders have responded with heightened fear and bellicosity. Those in Soviet leadership who had doubts about the policy of détente would have a greater voice. They would cite any developments abroad which appeared unfavorable to the USSR—improved US-Chinese relations, an end to the Ostpolitik, rising tensions in the Eastern Mediterranean, upward revisions in the US defense effort, etc.—as signs of enmity toward the USSR and of the need for the USSR to prepare for the worst. In short, the Soviets would conclude that they ought to develop greater

flexibility and stamina, and increase their military capabilities across the board.

142. *Posture A* in military terms would mean the thinning out of forces in the forward area facing NATO, the reduction of the readiness status of some divisions in the European USSR, and probably the disbandment of some divisions altogether. In the Far East it would mean halting the buildup, though not necessarily stopping the filling out of some of the units now incomplete (especially in the support sector). Modernization of Soviet ground and tactical air forces would continue at a moderate pace. In strategic attack forces, missiles deployed for the peripheral role would decline, and the SS-11 or a follow-on system (subject to any agreed limitations) partially replace them;²² bomber forces would be modernized at a measured pace, but would decline in numbers. The navy would continue its modernization, though the introduction of new types of ships and weapons would slow down.

143. *Posture B* in military terms would mean that the forces opposite NATO in Europe would be unchanged in numbers, but that their armament would improve with continuation of the modernization program. The buildup in the Far East would continue to fill out forces now under development. Peripheral missiles would be permitted to decline in numbers, but qualitative improvements would be introduced and SS-11 or a follow-on system deployment increased. The medium bomber force would be permitted to decline, but the Backfire would move in steadily to make up for some of this decline. The navy would continue to modernize, with new types introduced more rapidly than under *Posture A*.

²² For the views of Maj. Gen. Phillip B. Davidson, Assistant Chief of Staff for Intelligence, Department of the Army; Rear Adm. Earl F. Rectanus, Director of Naval Intelligence, Department of the Navy; and Brig. Gen. Edward Ratkovich, Acting Assistant Chief of Staff, Intelligence, USAF, see their footnote 6 on page 13.

144. In *Posture C* the forces deployed opposite NATO would be unchanged in number, but their modernization would be more rapid. Divisions at the lowest states of readiness would be made more able to move into action quickly. The most important change would be the introduction of a wider range of tactical nuclear weapons to increase flexibility, with accompanying revisions in doctrine and training. The buildup in the Far East would continue with emphasis on the increased readiness of the units deployed there and on the completion of logistic buildup. The introduction of new and improved tactical air and air defense systems would be speeded up. Peripheral strategic attack capabilities would be enhanced. The SS-11 or a follow-on system would be deployed in larger numbers to make up for the phasing out of old missile systems.²³ Similarly, the decline in the total size of the medium bomber force would be more than overcome by the deployment of substantial numbers of the high-performance Backfire. The navy would not be significantly larger than under *Posture B*, but new ships, submarines, and aircraft would be deployed more rapidly.

145. Under *Posture D*, the number and readiness of the divisions opposite NATO and China would be increased. Divisions at lower conditions of readiness would be raised, and a strategic reserve created in the Far East. Tactical aviation in the Far East would be strengthened and modernization of aircraft speeded up as rapidly as possible. Peripheral missile forces would increase, as would submarines assigned to the peripheral attack role; production of Backfire would be accelerated. Naval surface forces would be increased in

²³ For the views of Maj. Gen. Phillip B. Davidson, Assistant Chief of Staff for Intelligence, Department of the Army; Rear Adm. Earl F. Rectanus, Director of Naval Intelligence, Department of the Navy; and Brig. Gen. Edward Ratkovich, Acting Assistant Chief of Staff, Intelligence, USAF, see their footnote 6 on page 13.

terms of capability to land and supply forces by sea; submarines and naval air strength and capabilities would be substantially increased. Under Posture D, the Soviets would also extend further their development and deployment of a wider range of tactical nuclear missiles; they would still wish to avoid instant escalation to strategic nuclear war in Europe. They would calculate that, in the atmosphere of Posture D, the US and its allies in the West would be made more capable of fighting without resort to nuclear weapons (especially if Soviet tactical nuclear capabilities had improved); they would therefore attempt also to improve their capability to fight a sustained conventional war, so as to avoid being the first side to resort to nuclear weapons.

146. *Comparison of Illustrative Postures.* In the tables which follow, we have not given a detailed breakdown of all weapons and forces, and we have rounded off figures to permit easy and quick appraisal of the changes from one posture to another. It is

important to note, when examining tables such as these, that tabular renditions of numbers of men, divisions, regiments, aircraft, ships, or missile launchers provide only a part of the picture. There are other factors affecting posture which we cannot quantify or are unquantifiable, such as doctrine, training, effectiveness of command and control systems, the quality of the logistical system, and military morale. Weaknesses or strengths in these things can at least to some degree modify the effects of greater or lesser numbers.

147. We make no choice between the postures we have illustrated. We do this partly because they are intended as illustrative and not as definitive. We believe that the upper and lower limits of Soviet strength between now and 1979 will lie roughly between Postures A and D, but where within this range the Soviet forces will actually develop will depend largely upon how the Soviet leaders react to the developing world situation.

ILLUSTRATIVE FORCE POSTURES:

These force postures illustrate differing emphases with regard to Soviet forces for operations in Eurasia and possible trends they could take, and as such are not directly

Ground Forces	Posture A				Posture B			
	1971	1973	1976	1979	1971	1973	1976	1979
	Numbers of divisions reduced in Europe. Readiness reduced in western USSR. Buildup stops opposite China. Modernization proceeds at slower pace. Support continues at current relation to divisional forces. Increased reliance on strategic deterrent.				Numbers of divisions unchanged in Europe. Readiness improved in western USSR. Buildup continues opposite China. Modernization continues at present pace. Support continues at current relation to divisional forces. Continued reliance on strategic deterrent.			
Divisions	162	158	157	157	162	167	169	171
(Including ones requiring no mobilization)	(43)	(45)	(45)	(45)	(43)	(46)	(50)	(56)
Manpower	1,500,000	1,400,000	1,300,000	1,300,000	1,500,000	1,600,000	1,700,000	1,700,000
(Divisional)	(900,000)	(840,000)	(780,000)	(780,000)	(900,000)	(960,000)	(1,020,000)	(1,020,000)
(Non-divisional)	(600,000)	(560,000)	(520,000)	(520,000)	(600,000)	(640,000)	(680,000)	(680,000)
Non-divisional as percent of total	40	40	40	40	40	40	40	40
Tanks	35,600	34,200	34,000	34,000	35,600	36,500	36,900	36,900
APCS	21,100	22,800	24,900	26,400	21,100	24,400	29,300	31,500
Artillery	13,300	12,800	12,700	12,700	13,300	13,500	13,800	13,800
Rocket Launchers	2,950	2,850	2,800	2,800	2,950	3,000	3,000	3,000
Nuclear Delivery Launchers								
Divisional	530	520	520	520	530	540	550	550
Army	180	180	180	180	180	180	210	210
Front	210	210	210	210	210	220	230	240
SAM Launchers	1,325	1,075	985	1,030	1,325	1,410	1,480	1,600
Trucks	128,600	132,100	133,400	128,300	128,600	137,900	159,900	161,783
Frontal Aviation	Numbers decline greatly in west and steady in east. New interceptor, fighter bomber, and reconnaissance/strike aircraft now in production or test brought in at moderate pace.				Numbers decline slightly in west, and steady in east. Same new aircraft brought in, at more rapid pace. In addition, a new reconnaissance aircraft deployed in late 1970s.			
	1971	1973	1976	1979	1971	1973	1976	1979
Regiment Equivalents (1,100 men each)	112	96	85	74	112	106	103	100
Interceptors Total	1,760	1,460	1,455	1,380	1,760	1,680	1,955	2,050
Older Mach 1 (Mig 17, 19)	375	140	..	..	375	200	..	..
Current Mach 2 (Mig 21, Yak 28)	1,355	1,170	930	730	1,355	1,330	1,330	1,150
New Mach 2, 5, (Flogger)	30	150	525	650	30	150	625	900
Fighter Bombers Total	1,180	1,120	900	755	1,180	1,160	990	930
Not nuclear capable (Mig 17)	720	560	140	..	720	600	200	..
Nuclear capable (SU-7)	460	560	760	580	460	560	790	730
(New, under test)	..	..	..	175	..	..	..	200
Light Bombers	330	270	180	90	330	320	170	60
(IL-28, Yak 28) (Nuclear capable)								
Reconnaissance/strike (Foxbat) (Nuclear capable)	..	30	80	80	..	30	120	130
Reconnaissance (IL-28, Yak 27/28, Mig 21)	680	560	455	350	680	620	470	415
Total Frontal	3,950	3,440	3,070	2,655	3,950	3,810	3,705	3,585

THEATER FORCES AT MID-YEAR

suitable for military planning purposes. For Defense planning purposes, the reader should consult the Defense Intelligence Projections for Planning (DIPP-71).

Ground Forces	Posture C				Posture D			
	Numbers of divisions unchanged in Europe but increased opposite China. Readiness improved opposite Europe and China. Pace of modernization stepped up. Support increases somewhat in relation to divisional forces. Increased tactical nuclear capability.				Numbers of divisions increase in Europe as well. Readiness improved, but not as much as Posture C. Strategic reserve created opposite China. Modernization much more rapid; support increases considerably in relation to divisional forces. Increased tactical nuclear and conventional capability.			
	1971	1973	1976	1979	1971	1973	1976	1979
Divisions	162	169	173	173	162	174	187	200
(Including ones requiring no mobilization)	(43)	(66)	(79)	(97)	(43)	(52)	(64)	(72)
Manpower	1,500,000	1,700,000	1,900,000	2,100,000	1,500,000	1,750,000	2,100,000	2,600,000
(Divisional)	(900,000)	(1,000,000)	(1,100,000)	(1,200,000)	(900,000)	(1,000,000)	(1,100,000)	(1,200,000)
(Non-divisional)	(600,000)	(700,000)	(800,000)	(900,000)	(600,000)	(750,000)	(1,000,000)	(1,400,000)
Non-divisional as percent of total	40	41	42	43	40	42	48	54
Tanks	35,600	36,200	37,000	37,000	35,600	37,500	39,900	42,300
APCS	21,100	29,600	36,000	40,900	21,100	27,200	33,400	40,800
Artillery	13,300	13,800	14,300	14,300	13,300	15,000	16,100	17,200
Rocket Launchers	2,950	3,000	3,100	3,100	2,950	3,100	3,400	3,600
Nuclear Delivery Launchers								
Divisional	530	560	620	660	530	600	720	770
Army	180	190	210	210	180	210	240	260
Front	210	240	280	310	210	260	330	400
SAM Launchers	1,325	1,445	1,550	1,775	1,325	1,825	2,935	3,400
Trucks	128,600	150,950	173,400	184,400	128,600	176,600	202,900	215,800
Frontal Aviation								
	Numbers decline slightly in west, and steady in east. Same new aircraft as in Posture B, but new nuclear capable fighter bomber and reconnaissance/strike aircraft come in much more rapidly.				Numbers steady in west and increase in east. Same new aircraft as in Posture B, but come in even more rapidly. In addition, a new interceptor deployed end 1970s.			
	1971	1973	1976	1979	1971	1973	1976	1979
Regiment Equivalents (1,100 men each)	112	106	104	101	112	109	109	110
Interceptors Total	1,760	1,680	1,955	2,055	1,760	1,730	1,955	2,120
Older Mach 1 (Mig 17, 19)	375	200	..	..	375	250	..	..
Current Mach 2 (Mig 21, Yak 28)	1,355	1,330	1,330	1,155	1,355	1,330	1,330	970
New Mach 2, 5 (Flogger)	30	150	625	900	30	150	625	1,120
(Follow-on)	..	..	..	..	..	..	..	30
Fighter Bombers Total	1,180	1,160	900	1,000	1,180	1,190	1,130	1,110
Not nuclear capable (Mig 17)	720	600	200	..	720	630	360	..
Nuclear capable (SU-7)	460	560	600	500	460	560	670	610
(New, under test)	..	..	100	500	..	..	100	500
Light Bombers Total	330	320	240	80	330	330	200	125
(IL-28, Yak 28)	..	30	120	130	..	30	120	150
Reconnaissance/strike Total (Foxbat)	..	..	..	..	..	..	..	..
Reconnaissance Total	680	630	520	475	680	630	520	515
(IL-28, Yak 27/28, Mig 21)	..	..	..	..	..	..	..	..
Total Frontal Aviation	3,950	3,820	3,735	3,740	3,950	3,910	3,925	4,020

ILLUSTRATIVE FORCE POSTURES: FORCES FOR

These force postures illustrate differing emphases with regard to Soviet forces for operations in Eurasia and possible trends they could take, and as such are not directly

<i>Ballistic Missiles</i>	Posture A				Posture B			
	Numbers of missiles decline by 40 percent. Dual-purpose SS-11 replaces some MRBMs/IRBMs. ^a No mobile system.				Numbers of missiles decline by 20 percent. Dual-purpose SS-11 replaces more MRBM/IRBMs. ^a No mobile system.			
	1971	1973	1976	1979	1971	1973	1976	1979
<i>MRBM/IRBM</i>								
Soft SS-4.....	420	332	148	..	420	312	52	..
SS-5.....	42	42	34	..	42	42	16	..
Hard SS-4.....	84	84	76	52	84	84	76	..
SS-5.....	48	48	42	33	48	48	42	..
New MRBM/IRBM.....	..	..	50	140	..	..	60	220
Mobile Improved SS-14 or New MRBM/IRBM.....	..	..	..	..	..	..	..	..
<i>ICBM</i>								
Hard SS-11 and/or New ICBM.....	120	190	200	200	120	200	320	330
Total Launchers.....	714	696	550	425	714	686	566	550
<i>Ballistic Missile Submarines</i>								
	G-I in only submarine deployed for peripheral strategic attack.				G-II conversions are also deployed for peripheral strategic attack.			
	1971	1973	1976	1979	1971	1973	1976	1979
G-I (3 SS-N-4).....	13(39)	7(21)	7(21)	7(21)	13(39)	6(18)	..	..
G-II (3 SS-N-5).....	..	..	..	..	..	12(36)	12(36)	12(36)
H-II (3 SS-N-5).....	..	..	..	..	..	..	..	..
G-III (4 SS-N-6).....	..	..	..	..	..	..	..	..
Total.....	13(39)	7(21)	7(21)	7(21)	13(39)	18(54)	12(36)	12(36)
<i>Bombers</i>								
	Total force cut in half. Backfire deployed in limited numbers.				Total force reduced by 40 percent. Backfire comprises one-third of force by 1979.			
	1971	1973	1976	1979	1971	1973	1976	1979
Badger (About half with 2 AS-5/6) ^b ..	535	400	250	100	535	450	300	150
Blinder (About half with 1 AS-4) ^b	175	170	170	120	175	175	175	150
Backfire (About half with new ASM). ..	..	..	25	85	..	..	75	150
Total.....	710	570	445	305	710	625	550	450

^a See footnote 6 on page 13.

^b Bombers phase out before ASM carriers.

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suitable for military planning purposes. For Defense planning purposes, the reader should consult the Defense Intelligence Projections for Planning (DIPP-71).

	Posture C				Posture D			
	Numbers of missiles remain as at present. SS-11 replaces current MRBMs/IRBMs.* Mobile MRBMs/IRBMs introduced.				Numbers of missiles increase. SS-11 and new solid MRBMs/IRBMs replace present MRBMs/IRBMs.* Mobile system introduced.			
	1971	1973	1976	1979	1971	1973	1976	1979
<i>Ballistic Missiles</i>								
<i>MRBM/IRBM</i>								
Soft SS-4.....	420	308	46	..	420	308	38	..
SS-5.....	42	36	12	..	42	42	12	..
Hard SS-4.....	84	84	36	..	84	84	36	..
SS-5.....	48	48	27	..	48	48	24	..
New MRBM/IRBM.....	..	..	140	260	..	..	130	310
Mobile Improved SS-14 or New MRBM/IRBM	..	..	50	50	..	..	100	100
<i>ICBM</i>								
Hard SS-11 and/or New ICBM.....	120	220	380	380	120	250	420	420
Total Launchers.....	714	696	691	690	714	732	760	830
<i>Ballistic Missile Submarines</i>								
	G-I, G-II, H-II are deployed for peripheral strategic attack.				G-I, G-II, H-II, and G-III conversion are all deployed for peripheral strategic attack.			
	1971	1973	1976	1979	1971	1973	1976	1979
G-I (3 SS-N-4).....	13(39)	6(18)	..	..	13(39)	6(18)	..	..
G-II (3 SS-N-5).....	9(27)	12(36)	12(36)	12(36)	9(27)	13(36)	12(36)	12(36)
H-II (3 SS-N-5).....	..	..	8(24)	8(24)	2(6)	8(24)	8(24)	8(24)
G-III (4 SS-N-6).....	..	..	..	..	..	3(12)	10(40)	10(40)
Total.....	22(66)	18(54)	20(60)	20(60)	24(72)	30(90)	30(100)	30(100)
<i>Bombers</i>								
	Badger models phase out more slowly than in Posture B. Backfire comes in more rapidly.				Current models phase out as in Posture C. Backfire comes in even more rapidly.			
	1971	1973	1976	1979	1971	1973	1976	1979
Badger (About half with 2 AS-5/6) ^h ..	535	460	340	250	535	460	340	250
Blinder (About half with 1 AS-4) ^h ..	175	175	175	150	175	175	175	150
Backfire (About half with new ASM)..	..	..	95	200	..	..	130	250
Total.....	710	635	610	600	710	635	645	650

ILLUSTRATIVE FORCE POSTURES:

These force postures illustrate differing emphases with regard to Soviet forces for operations in Eurasia and possible trends they could take, and as such are not directly

Major Surface Ships

Posture A				Posture B			
Cruise missile cruisers and destroyers enter fleets at slower pace. No new helicopter carriers built. Older units withdrawn more rapidly.				Cruise missile cruisers and destroyers enter fleets at current pace. Three new helicopter carriers built. Older units withdrawn less rapidly.			

	1971	1973	1976	1979	1971	1973	1976	1979
Helicopter Carriers.....	2	2	2	2	2	2	3	5
Missile Cruisers.....	12	20	23	23	12	20	29	35
Other Cruisers.....	12	0	0	0	12	8	0	0
Missile Destroyers.....	37	46	58	73	37	47	65	89
Other Destroyers.....	44	37	5	0	44	36	5	0
Escorts.....	111	107	97	77	111	107	97	77

Submarines

Posture A				Posture B			
Cruise missile and torpedo attack submarines enter fleets at slower pace. Numbers of submarines decline by 40 percent.				Cruise missile and torpedo attack submarines enter fleets at current pace. New quieter torpedo attack submarines deployed submarine force declines by 30 percent.			

	1971	1973	1976	1979	1971	1973	1976	1979
<i>Cruise Missile</i>								
Nuclear.....	38	42	49	52	38	42	54	56
Diesel.....	28	24	16	16	28	24	18	-16
<i>Torpedo Attack</i>								
Nuclear.....	25	34	41	43	25	34	50	67
Diesel.....	191	163	80	49	191	167	90	54

Naval Aviation

Posture A				Posture B			
ASM carrier force declines. Numbers of ASW aircraft grow in early 1970s.				ASM carrier force remains constant as new carrier comes in. ASW force grows through 1970s. New ASW helicopter comes in.			

	1971	1973	1976	1979	1971	1973	1976	1979
ASM Carriers.....	275	250	215	185	275	270	270	260
Reconnaissance/Bomber/Tanker.....	360	315	230	170	360	335	295	240
Patrol/ASW.....	115	170	180	165	115	175	180	180
ASW Helicopters.....	235	245	235	225	235	245	285	320

Amphibious Lift

Posture A				Posture B			
Naval infantry grows at current pace.				Naval infantry grows at current pace.			

	1971	1973	1976	1979	1971	1973	1976	1979
Battalion Landing Teams.....	18	20	24	24	18	20	24	24

NAVAL FORCES AT MID-YEAR

suitable for military planning purposes. For Defense planning purposes, the reader should consult the Defense Intelligence Projections for Planning (DIPP-71).

	Posture C				Posture D			
<i>Major Surface Ships</i>	Cruise missile cruisers and destroyers enter fleet more rapidly. Three new helicopter carriers built. Older units withdrawn more rapidly.				Cruise missile cruisers and destroyers enter fleet more rapidly still. Five new helicopter carriers built. Older units retained in larger numbers. Increased logistic support capability.			
	1971	1973	1976	1979	1971	1973	1976	1979
Helicopter Carriers.....	2	2	3	5	2	2	4	7
Missile Cruisers.....	12	21	34	41	12	21	34	43
Other Cruisers.....	12	10	4	3	12	10	6	1
Missile Destroyers.....	37	47	67	94	37	47	71	98
Other Destroyers.....	44	36	15	0	44	36	15	0
Escorts.....	111	107	97	77	111	107	97	77
 <i>Submarines</i>	Cruise missile and torpedo attack submarines enter fleets more rapidly. New quieter torpedo attack submarine. Submarine force declines by 20 percent.				Cruise missile and torpedo attack submarines enter fleets much more rapidly. New quieter torpedo attack and cruise missile submarines. Submarine force declines by 15 percent.			
	1971	1973	1976	1979	1971	1973	1976	1979
<i>Cruise Missile</i>								
Nuclear.....	38	43	61	73	38	43	62	78
Diesel.....	28	24	18	16	28	24	18	16
<i>Torpedo Attack</i>								
Nuclear.....	25	34	50	69	25	34	56	85
Diesel.....	191	167	90	59	191	167	90	54
 <i>Naval Aviation</i>	ASM carrier force grows as new ASM carrier comes in. ASW aircraft grow throughout 1970s. New ASW helicopter is deployed.				ASM carrier force grows as new ASM carrier comes in more rapidly. ASM aircraft grow throughout 1970s. New ASW helicopter and reconnaissance aircraft.			
	1971	1973	1976	1979	1971	1973	1976	1979
ASM Carriers.....	275	270	285	300	275	280	330	365
Reconnaissance/Bomber/Tanker.....	360	335	295	230	360	365	335	255
Patrol/ASW.....	115	180	210	225	115	185	280	320
ASW Helicopters.....	235	245	285	320	235	255	350	410
 <i>Amphibious Lift</i>	Naval infantry grows at current pace.				Naval infantry grows much more rapidly.			
	1971	1973	1976	1979	1971	1973	1976	1979
Battalion Landing Teams.....	18	20	24	24	18	23	32	45

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MEMORANDUM TO HOLDERS
NATIONAL
INTELLIGENCE
ESTIMATE

Warsaw Pact Forces For Operations in Eurasia

NIE 115147A
10 August 1970

N9 279

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The following intelligence organizations participated in the preparation of the estimate:

The Central Intelligence Agency and the intelligence organizations of the Departments of State and Defense, and the NSA.

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MEMORANDUM TO HOLDERS

NIE 11-14-71

WARSAW PACT FORCES FOR
OPERATIONS IN EURASIA

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ANNEX: TACTICAL ANTISUBMARINE WARFARE

WARSAW PACT FORCES FOR OPERATIONS IN EURASIA

I. NATURE OF CHANGES

1. In the short time which has elapsed since NIE 11-14-71 was issued, there have been several developments which should be brought to the attention of those holding that Estimate. These developments include new or additional information on troop deployment, weapon systems, or force capabilities. In addition, CIA and DIA have been carrying out joint research on Warsaw Pact logistic support, and their study to date provides more reliable data than were available at the time that NIE 11-14-71 was published. Also, new analysis is available on the USSR's capabilities for antisubmarine warfare (ASW) operations in defense of its own naval forces and merchant shipping. The result of this latter analysis is presented at Annex and summarized in the text of this memorandum. The new information and reanalysis has not altered our basic judgments in NIE 11-14-71. We find those judgments to be still valid.

II. THE STATUS OF SOVIET FORCES ALONG THE SINO-SOVIET BORDER

2. *Divisions.* The size and disposition of Soviet forces along the border with China have remained generally unchanged since publication of NIE 11-14-71. Re-evaluation of the Pacific Fleet area has indicated that the naval infantry forces there are being organized into a division-like structure. No new divisions have been added in the immediate border area in the last year and a half, and the Soviets may now concentrate on filling out units already deployed there. They have, however, recently deployed major elements of a motorized rifle division in the Siberian Military District (MD). The initial elements of the division arrived this spring and join 4 other divisions in the MD.

3. In the Central Asian MD, four garrison areas that had been thought to house two understrength and incomplete divisions were found to house a single and nearly full strength motorized rifle division. Conse-

quently, the estimated number of divisions in that MD has been reduced from the seven cited in NIE 11-14-71 to six.

4. *Fortified Areas.* The Soviets have evidently resurrected a defensive concept first used in the Soviet Far East in the late 1930s to defend against Japanese incursions. As many as 10 Soviet combat units of a new type are deployed in the Far East MD along major avenues of approach from China. These units are not identical in structure. They are about half the size of a motorized rifle regiment and lack the infantry maneuver elements but have more fire support. These new units probably are part of a defensive formation known as a "fortified area" (ukreplyennyy rayon) which the Soviets define as an area with prepared field fortifications and a permanent garrison to man them.

5. Each fortified area typically has prepared defensive positions, including artillery and anti-aircraft gun emplacements, tank revetments, trenches, and bunkers. Nearyby, in garrison areas, are the new type units which would probably occupy the field fortifications in time of crisis. One other fortified area may be located in the Transbaykal MD. Additional fortified areas may exist elsewhere in the border area.

6. We believe that these fortified area units provide (a) increased border security (supplementing the KGB Border Guard units deployed along the border); (b) a freedom to commit ground divisions to other actions; and (c) a time delay factor to permit mobilization and reinforcement of existing general purpose forces along the border.

7. *Logistic Support.* Emphasis continues to be placed on developing better logistic support, particularly at higher ground force echelons, for the combat forces already deployed along the border. Since publication of NIE 11-14-71, new army and front-level support

units have been identified and others have received additional equipment. This process is continuing. By now, most divisions have their essential combat and combat support units. Heretofore, the bulk of the border units lacked cargo trucks and logistic support personnel. Now, however, they are receiving these trucks and personnel, thereby reducing the shortages which in the past have limited their ability to carry out operations. Present indications are that the Soviets do not intend to bring all their divisions in the border area to full combat strength but instead contemplate a force which would be maintained at reduced strength and would require the mobilization of reservists and vehicles—principally cargo trucks—from the civilian sector prior to operations. Nevertheless, because of their remoteness from major urban sources of manpower and equipment, the divisions along the Sino-Soviet border probably will be manned and equipped at higher levels than units in the western USSR.

8. *Frontal Aviation.* Since NIE 11-14-71, new aircraft have been added to Frontal Aviation units on the border, and there has been a slight increase in numbers of aircraft—from some 1,000 to about 1,100. There has been a substantial increase in numbers of helicopters—from 300 to 440.

III. RECENT DEVELOPMENTS IN EQUIPMENT AND ORGANIZATION

Ground Forces

9. *Nuclear Warhead Storage in Eastern Europe.* In NIE 11-14-71 we noted that nuclear weapon storage facilities existed in Eastern Europe. These were at five Soviet-controlled airfields in East Germany, Hungary, and Poland. There were also seven other European storage sites, whose subordination was not known, but whose function might be the storage of nuclear warheads for tactical surface-to-surface missiles and rockets. Subsequent to

the approval of NIE 11-14-71, there have been no significant changes at these sites. Five more sites—apparently intended to hold tactical nuclear warheads—have been identified. Evidence indicates that these sites are operational, and they appear to be occupied by the Soviets.

10. Of the 12 storage sites apparently supporting tactical missile units, two are in East Germany, three in Poland, three in Czechoslovakia, one in Hungary, and three in Bulgaria. Most of them are set off by themselves but are within 25 miles of tactical missile units or support facilities, either Soviet or East European. All the sites were constructed between 1966 and 1968.

11. The locations and size of the sites suggest that each is designed to support one Scud missile brigade and the three to five FROG (free-rocket-over-the-ground) battalions normally found in an army area. If this pattern is repeated throughout Eastern Europe, an additional eight to nine sites may be found there. The five storage sites associated with Soviet airfields in Eastern Europe may also be intended to hold warheads for tactical missiles. The 17 identified sites could contain 500 to 1,000 nuclear weapons, depending on storage arrangements.

12. We believe the Soviets are now storing nuclear weapons at nuclear storage sites in Eastern Europe. Soviet concepts of how nuclear war in Europe is likely to evolve emphasize the importance of launching a massive coordinated nuclear strike once it was concluded that NATO would introduce nuclear weapons. This concept would require a warhead supply system structured to deliver warheads to the missile units swiftly and with a minimum chance of disruption.

13. *Low-Yield Tactical Nuclear Weapons.* In NIE 11-14-71, we noted that Warsaw Pact

forces had some capability to exercise nuclear options short of a strategic nuclear strike and that their targeting doctrine called for use of nuclear weapons against maneuver and support elements. We also noted that the Soviets had the technical capability to develop nuclear artillery rounds, but that there was no evidence that they had done so. We continue to receive unconfirmed reports that the Soviets have developed a nuclear artillery round, but we still have no persuasive evidence that they have done so.

14. SA-4. The mobile SA-4 system, designed to provide medium- to high-altitude defense for ground forces, is now extensively deployed in the USSR and with the GSFG. It has now also appeared in limited numbers with the Soviet forces in Czechoslovakia and Hungary. There is no firm evidence of deployment with Soviet forces in Poland.

15. SA-6. Deployment of the SA-6 mobile low-altitude air defense missile system has now been identified with Soviet ground force units in East Germany. Several SA-6 units have been active in a Soviet training area in East Germany, but their subordination cannot be determined. SA-6 units also are deployed in five ground force division areas in the USSR. The SA-6 unit appears to be replacing the divisional anti-aircraft artillery regiment. It is not known whether this is also the case with the SA-6 units in East Germany.

16. The SA-6 unit in Soviet ground force division areas in the USSR apparently consists of 2 launch battalions, each with 8 triple launchers, 1 acquisition radar, and 2 tracking and guidance radars. Each battalion probably has 2 firing units, each with 4 triple launchers and 1 tracking and guidance radar.

17. *Man-Portable SAM.* Since publication of NIE 11-14-71, we have acquired no new information regarding the deployment with Soviet forces of the man-portable, shoulder-

fired SA-7 Grail. We have, however, obtained considerable information on its technical characteristics. During the North Vietnamese offensive in the spring of 1972, the SA-7 was introduced into South Vietnam. SA-7 missiles and launchers were captured by South Vietnamese forces, and preliminary examination of the captured equipment (manufactured in 1968) confirms that our earlier assessment of the SA-7 was generally sound. The SA-7 is believed to be effective at a maximum range of 2 nautical miles (nm) and up to a maximum altitude of about 9,000 feet. The missile speed is unknown at this time, but is likely to be supersonic.

18. The system intercept capability in any particular engagement is heavily dependent on the target speed, altitude, maneuvers, and infrared signature. In most cases the target would be engaged in a tail-on aspect. The missile employs a small warhead (weighing 2.6 pounds and containing about 1 pound of high explosive) and requires a direct hit to be effective.

19. *New Soviet Tanks.* There is evidence that a new type medium tank is now at least in limited series production. The plant which produces these tanks is not known.

20. The new tank is conventional in design and does not appear to be a significant technological improvement over the T-62. It appears to be armed with a gun similar to the 115 mm smoothbore armament of the T-62. According to one source, it is lower, faster, and quieter than present Soviet tanks and is equipped with a multilayered composite armor to reduce spalling and provide better protection against nuclear radiation.

21. The new tank will presumably be issued initially to Soviet units to replace the older tanks in the inventory. If the new tank is produced at the same rate as the T-62—about

1,500 per year—the T-55s and T-62s will continue to comprise the bulk of the Soviet force through the 1970s.

22. A new light amphibious tank was seen in 1971, but the state or extent of its production cannot be determined. This tank is smaller than the PT-76 and is armed with a 76 mm smoothbore gun and an antitank guided missile. It is air droppable.

Naval Forces

23. *Air-Associated Combatant.* The Soviets are in the process of constructing a large ship at Nikolayev. It is reportedly about twice the displacement of the Moskva-class helicopter ship. We believe that the new large ship is designed to carry helicopters and V/STOL aircraft. It could be operational by about 1975. Such a ship could be capable of a number of roles—including ASW, reconnaissance, air defense, and possibly limited tactical strikes—depending on the aircraft carried (including helicopters) and the operational situation. It probably will not be an attack aircraft carrier in the Western sense.

24. *Possible Naval Missile:* [] Since December 1969 the Soviets have been testing at short ranges a ballistic missile capable of maneuvering in flight to change the impact point of the re-entry vehicle (RV). []

25. []

Frontal Aviation and Air Defense

29. During the past year there have been increasing indications that the Soviets are giving greater attention to the ground attack role in Frontal Aviation. New aircraft such as Flogger and Fishbed J/K provide more flexibility for use of air defense aircraft in the ground attack role. Fishbed units have also increased their ground attack training. The new RAM-F will provide improved conventional weapons delivery capability. Increased emphasis on aerial reconnaissance adds better target acquisition capability. Electronic countermeasure support to Frontal Aviation is also being improved to provide active and passive countermeasures for an attacking force. These changes will provide Soviet commanders a greater flexibility in the use of Frontal Aviation to support ground forces in conventional or nuclear operations.

30. *Deployment.* The variable-geometry-wing fighters, Flogger and Fitter B are continuing to be deployed with operational units, but at a slow pace. Since NIE 11-14-71, Fitter B has been delivered to two regiments and there are now about 70 in service.

31. Flogger deliveries resumed in May of this year after a hiatus of some 20 months. (The Soviets had delivered about 40 in 1970.) Evidence suggests that at least one and possibly two squadrons have been deployed with one regiment in the western USSR. This could bring total Flogger in service to some 50 to 60 aircraft. During the gap in deliveries, production continued at the two airframe plants involved, and the delay in deliveries may have been due to technical difficulties which have now been eliminated.

32. Deployment of the reconnaissance version of the Mach 3 Foxbat to Frontal Aviation is still limited to one training unit, although the number increased from about 6 to 12 aircraft. The Soviets are continuing to deploy

26. []

]

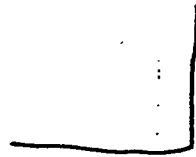
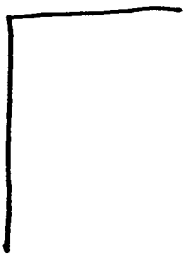
27. []

]

28. There still are many uncertainties, about the ultimate objectives [] complete weapon system, it will probably turn out to be a short-range (100 to 300 nm) naval ballistic missile. It appears suited to attacking moving targets—aircraft carriers and other major surface ships, for example. But it is also possible that it is not a weapon system in itself, but merely a test bed []

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interceptor variants of the Foxbat with the air defense force, however, and the priority given to satisfying the initial needs of this force may account for the slow deliveries to Frontal Aviation.

33. [] The Soviets are continuing to test a large variable-geometry-wing fighter [] This aircraft has a range and payload capability—particularly for conventional bombs—which is considerably greater than any of the aircraft now in Frontal Aviation. [] will probably be employed in Frontal Aviation as a fighter-bomber aircraft. []

[] It will likely be produced at the Novosibirsk aircraft plant, the current production site for the Flagon interceptor. It will probably enter production there when Flagon production draws to a close—probably by the end of this year. If so, it will probably enter service with Frontal Aviation by 1974.

34. *Tactical Air-to-Surface Missiles (ASMs).*

[] has a maximum range of about 20 nm and a speed of about Mach 1. []

[] it may be an antiradiation weapon like the US Shrike, but other possible guidance such as television or inertial command cannot be ruled out. The missile could enter service about 1975.

35. In addition, the Soviets may now be equipping some of their Frontal Aviation forces in East Germany with another tactical ASM. Last September, a missile that resembles the US Bullpup was photographed on a Soviet Mig-21 fighter in East Germany. It has been

designated the AS-7 Kerry. The missile was fired at a ground target about 3.5 nm from the aircraft. No testing of this missile has been detected in the USSR, however, and it has not been seen again in East Germany since September. It is not known, therefore, how widely the missile is deployed or how its guidance system functions.

36. *MI-24 Hind Helicopter.* The Soviets have developed and are producing a new assault helicopter, the MI-24 Hind. It is probably destined for service with Frontal Aviation. Production at Arsenyev in the Far East MD had reached an estimated 30 as of the end of mid-1972. Initial deployment is expected this year, probably to existing helicopter units in the Far East and Transbaykal MDs.

37. The Hind is not a gunship, in the sense that the US Huey Cobra and Cheyenne helicopters are gunships, but is basically an armed transport, like other Soviet helicopters. It can carry 15 persons in addition to the crew. There are, however, some important features which improve its capability for armed missions:

—It is more maneuverable, with its estimated maximum speed of 185 knots, some 60 knots faster than the MI-8 Hip.

—It has stub wings which carry armament and add lift and stability in cruising flight.

—It has a low silhouette and narrow profile.

These features, together with its speed, will make it a more difficult target for ground fire.

38. Hind's primary mission probably will be to provide armed support and transport for airmobile or heliborne operations; it probably will also be used for other combat support. The Soviets have used helicopters in an anti-tank role during exercises, but few details are available. There is no indication that the Soviets intend to employ large numbers of helicopters as a primary antitank weapon.

39. There is no evidence that Hind machine guns, cannons, or other weapons will be contained in an armament turret faired into the fuselage as on US gunships. Some Hind have two ordnance pylons under each stub wing while one has been seen with what appears to be a rocket under the wing. Hind's armament options probably are similar to those of older Soviet medium helicopters—MI-4 Hound and MI-8 Hip—which can carry machine guns, cannons, unguided rockets, anti-tank guided missiles, and bombs.

40. *Passive Defense Measures.* The Soviet Union, and to a lesser extent her Warsaw Pact Allies, continue to implement their ongoing program to increase the survivability of essential military systems by hardening against nuclear and/or conventional weapons. General Staff and GSFG command, control, and communications facilities have been provided bunkers and hardened antennas. Construction of hangarages has continued to the point that most Frontal Aviation airfields in Eastern Europe and the USSR possess such protection. Most of the SAM-associated electronic vans of the air defenses of the *front* have also been protected by revetments.

IV. TACTICAL ANTISUBMARINE WARFARE¹

41. Over the last dozen years the Soviet Navy has made a substantial effort to build up its capabilities for ASW. Soviet interest in the subject appears to have been greatly stimulated by the advent of the nuclear-powered ballistic missile submarine and the new strategic dimensions it provided. In practice, however, an overwhelming proportion of

¹ This section summarizes an evaluation of Soviet tactical ASW equipment operations, and capabilities contained in an Annex to this Memorandum to Holders of NIE 11-14-71.

the Soviet ASW effort to date has been devoted to the tactical aspect of the problem—i.e., the defense of Soviet naval forces and shipping against hostile submarines. This section is primarily concerned with the Soviet tactical ASW effort, though it necessarily considers equipment which can be used for strategic ASW operations, i.e., against Polaris.

42. Since 1960, ASW detection gear and weapons have been provided for all surface combatants, though they all have substantial armaments for other purposes. Much of the coastal defense force, the largest in the world, is designed for ASW operation. All Soviet general purpose submarines have some potential for ASW operations,² although more than half the nuclear-propelled units are equipped with cruise missiles and are intended primarily for use against surface ships, and the remainder, based on their operations, are multipurpose attack submarines. Since the mid-1960s, the Soviets have introduced long- and medium-range ASW aircraft as well as improved coastal types. The Soviet Navy also has both land-based and shipborne ASW helicopters.

43. Each of the four fleet commanders has a variety of ASW-capable surface, air, and submarine units under his command, and ASW exercises have been a regular feature of fleet level training. Most of these involve short-range operations. Recently, however, the Soviets have shown increasing concern over providing ASW protection in their sea approaches, suggesting that they intend to extend their ASW defenses further to sea. In the major annual exercises conducted by the Northern and Pacific Fleets, ASW activity has grown to include what are probably combined ASW

² Soviet nuclear-powered ballistic missile submarines also carry torpedoes, but their ASW capabilities are not considered here.

barrier and search operations off north Norway. ASW operations were carried out during the major 1970 exercise "Okean", although over three-quarters of the defending forces were principally engaged in anticarrier and antishipping operations. The Soviet Mediterranean Squadron has also practiced the formation of combined ship and submarine barriers across the Sicilian Straits and south of Crete. ASW has received less attention in other out-of-area operations although some practice in escorting convoys has taken place.

44. Despite the sizeable effort the Soviets have made with the tactical aspects of ASW, the results to date have not been impressive. Many Soviet ASW operations and exercises have failed to demonstrate the tactical sophistication and proficiency needed to cope with a modern nuclear submarine. Most important of all, almost all Soviet sensor systems are currently inadequate to the task of detecting and localizing enemy submarines before they are close enough to attack.

45. The older major Soviet surface ships have first or second generation sonars with effective ranges of no more than 4,000 or 5,000 yards even under the most favorable conditions. The Moskva ASW helicopter carrier and possibly the Krivak destroyer are equipped with the latest model sonars, which have direct path ranges of some 13,000-15,000 yards.³ First convergence zone ranges (20-30 nm) are possible with these sonars.⁴ In all, however, fewer than 15 major Soviet ships have ranges approaching even 10,000 yards. Most Soviet sonar performance appears to be further limited by deficiencies in signal processing and signal structure which prevent full exploitation of the sonar's range potential.

³ Direct path—the acoustic signal goes directly to the target and bounces back to the source.

⁴ Convergence zone—ring-like zones of sound focusing more than 20 miles from a sonar, occurring in many deepwater ocean areas.

46. Although there has been steady improvement, Soviet capabilities in submarine sonars also remain inferior to those of the US. Many sonars are of older and less efficient types. Even the more modern ones have effective passive ranges only about half those of modern US submarine sonars, in part because of design limitations and because of the high level of noise generated by Soviet submarines.

47. Improvements in Soviet ASW equipment and training are expected. The Soviets are probably continuing to experiment with low-frequency sonars to extend the detection range and improve the accuracy of their systems. R&D on ASW is also going on in other areas. They will probably also take some steps to reduce the high noise levels of their submarines. Improvements can also be expected in other areas of ASW technology, including weapon design.

48. Over the next few years, however, the Soviet Navy will not have any significant capability for defending its seaborne forces from attack by Western submarines, particularly nuclear. Even if new sonars and other modern detection gear are introduced, their introduction in the bulk of the surface fleet units would require a number of years. Moreover, the ASW task will be complicated by US development and replacement programs.

V. WARSAW PACT LOGISTIC SUPPORT

49. The assessment of Warsaw Pact logistic support contained in Annex F of NIE 11-14-71 reported some significant analytical problems. These are still under study. Significant progress has been made in the areas which are discussed below.

50. *Planning Factors.* We now have good evidence on the planning factors used to calculate Warsaw Pact ammunition requirements,

although we must still make some assumptions in applying them. To determine the potential requirements, Warsaw Pact planners use estimated expenditure rates calculated in accordance with the type of combat expected. Consumption is expected to be more rapid in the attack phase than in the exploitation phase of a campaign or in a period of passive defense. These estimated expenditure rates are calculated for each weapon and unit and are expressed in terms of so many units (or partial units) of fire, each unit of fire representing a fixed number of rounds per weapon.

51. Use of such factors permits a far more precise and meaningful calculation and measurement of Warsaw Pact logistic requirements and capabilities than our previous use of such a measure as "days of supply". The "day of supply" standard made no allowance for the fact that daily expenditures vary greatly depending on the specific daily combat situations encountered during the course of a campaign. Although the term "days of supply" has been used in Soviet logistic writings, it has appeared in general contexts without any indication of what specific expenditures it might represent.

52. *Scenarios.* To determine the effect of different combat situations on the logistic requirements of the three Warsaw Pact fronts which would engage NATO forces in the Central Region, two conventional war scenarios were developed. Both assume a 21-day period of mobilization. Scenario A involves a 10-day advance to the Rhine under conditions requiring relatively low ammunition expenditures after the initial days of attack. Scenario B involves much heavier fighting and ammunition expenditure, with the Pact forces forced to halt short of the Rhine after 10 days of much slower advances.

53. The scenarios do not encompass the entire range of ways in which a Warsaw Pact-

NATO battle might develop, but they are faithful to Pact plans as we understand them

[They necessarily lack elements of realism, as they exclude important but unquantifiable factors. Some factors, such as interdiction, attrition, and bad weather would reduce the capabilities of the logistics systems. Other factors, such as the quality of command judgment—specifically, an ability to alter plans and practices to meet unforeseen situations—could either enhance or reduce the capabilities of the system.

54. *Size of Ammunition Stocks.* The study has resulted in estimates of ammunition stocks in the GSFG as follows:

a. *Mobile divisional stocks.* Each division is estimated to be able to carry at least 1,600 metric tons and possibly as much as 2,100 metric tons of ammunition loaded on organic vehicles, in the hands of troops, or carried with crew-served weapons. The higher number reflects the tentative finding, based on a restudy of the motor transport battalions of four GSFG divisions, that the number of vehicles in ammunition transport companies might be higher than previously estimated.

b. *Ammunition depots.* Divisional ammunition depots in the GSFG have the capacity to store at least 29,000 metric tons and possibly as much as 34,000 metric tons. Soviet army and front-level ammunition storage facilities in East Germany could store an estimated 218,000 to 264,000 metric tons. The high side of the range represents the effect of adding suspected storage facilities to those confirmed as being for that purpose.

55. *POL Stocks.* POL (petrol, oil, lubricants) stores of the GSFG ground forces are estimated at some 365,000 metric tons. East Ger-

man army ground forces POL is estimated at some 50,000 metric tons. Ground force POL stores could be supplemented by drawing from the civilian stocks of POL available in East Germany.

56. *Numbers of Logistic Vehicles.* There are some 7,300 general purpose cargo vehicles and some 1,000 POL vehicles in army and front-level motor transport units in the GSFG to support logistic transport requirements.

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ANNEX

TACTICAL ANTISUBMARINE WARFARE

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TACTICAL ANTISUBMARINE WARFARE

Note: This Annex evaluates the Soviet Navy's equipment, operations, and capabilities for tactical antisubmarine warfare (ASW)—i.e., the defense of Soviet naval surface forces and shipping against hostile submarines.

I. SOVIET TACTICAL ANTISUBMARINE WARFARE FORCES

1. The Soviet Navy has traditionally been most concerned with preventing hostile naval forces, whether surface ships or submarines, from operating in its home waters and their approaches. To this end it has long maintained the largest coastal defense force in the world, much of it designed for antisubmarine operations. With the expanding scope of Soviet naval high sea operations, however, defense of deployed forces has become more of a factor.

2. Most of the principal components of the Soviet Navy now have some capability for anti-submarine warfare (ASW). The offshore defense forces are charged with coastal ASW and protection of intracoastal shipping. Aerial ASW support is provided by naval aviation units to each fleet in coastal areas, in the open ocean, and in the Mediterranean. The larger Soviet multipurpose surface ships from escort size on up, while performing their primary missions, are responsible for their own defense against submarines and are responsible for escorting some convoy groups and occasionally assisting in coastal defense. The submarine forces—whose role in ASW is small but increasing—have been observed, albeit infrequently, conducting submarine versus submarine exercises in barriers.

3. The ASW-capable forces are distributed by fleets approximately as shown in the Table. The basic characteristics of these forces are outlined below.

4. *Major Surface Forces.* The major surface forces are intended primarily for general purpose operations. The current force of 209 ships (excluding those deployed in the Caspian Sea) includes 2 ASW helicopter carriers, 27 cruisers, 74 destroyers,⁵ and 106 destroyer escorts (or ocean escorts). The Soviets designate some of their newer cruisers and destroyers as "large ASW ships", but all of these ships have multipurpose capabilities. While these ships carry improved ASW systems, they also have strengthened air defense armaments; most of the newer units carry cruise missiles for anti-ship missions. The bulk of the ASW-equipped ships are of the destroyer escort type and are used by the Soviets for operations conducted within about 500 nautical miles (nm) of the USSR or in the Mediterranean Sea.

5. The newest of the major combatants is the Kara-class missile cruiser now entering service. The appearance of this 9,000 ton vessel may be accompanied by an end to the Kresta II program after the seventh unit is completed. Construction of the new Krivak-

⁵ This number excludes 3 Krupnyy and 3 Kildin now being converted to new classes.

TABLE
SOVIET FORCES CAPABLE OF ANTISUBMARINE WARFARE
1 JULY 1972

	NORTHERN FLEET	BALTIC FLEET	BLACK SEA FLEET	PACIFIC FLEET	TOTAL
Major Surface Forces (Cruisers, Destroyer Escorts)					
First Line* (8 kHz Frequency or Lower Sonar)	7	2	4	0	13
Second Line* (High Frequency Sonar)	40	46	59	51	196
Coastal Defense Forces					
Patrol Craft, Escorts (Grisha, Poti, Stenka, Other)	21	85	59	47	212
Fleet Air Forces					
Long- and Medium-Range (May and Bear)	35	0	0	20	55
Coastal (Mail)	20	10	25	25	80
Helicopters (Hormone and Hound)	60	30	90	65	245
General Purpose Submarine Forces					
Current Generation (V, C, A, and P)	21	0	0	0	21
Early Generation					
Nuclear (E-I, E-II, and N)	23	0	0	24	47
Diesel (F, R, and J)	54	4	3	21	82

*First line major surface forces, in ASW terms as defined here, include those ships equipped with 8 kHz or lower sonars. These include the Moskva, Kresta II, Krivak, Kara and Kanin classes. Ships with higher frequency sonars are included as second line. Ships deployed in the Caspian Sea are excluded.

class missile destroyer continues, and is expected to reach a rate of three or four units per year. Construction of the older Kashin-class appears to have ended with the launching of the twentieth unit.

6. Modification activity also plays an important role in the continued upgrading of the major surface forces. Krupnyy-class cruise missile destroyers are being converted to the surface-to-air missile-armed Kanin-class. A similar program will probably be undertaken for the Kildin-class destroyers.

7. *Coastal Defense Forces.* Smaller escorts and patrol craft provide surface ship ASW capabilities in coastal areas. In contrast to the

major surface forces, many of these units are equipped mainly for ASW tasks, although they also perform general patrol duties.

8. The most important new minor combatant of ASW interest is the Grisha-class. This unit is considerably larger than earlier patrol craft, and falls in a category somewhere between the ocean escorts and coastal patrol craft. Construction is estimated at five to six units per year.

9. *Fleet Air Forces.* Most of the ASW aircraft currently deployed are suitable only for operations in coastal areas. In the past few years, however, the Soviets have deployed about 45 medium-range (May) and about 10

long-range (Bear F) ASW aircraft. In addition, each of the two helicopter carriers can support up to 20 ASW helicopters, and a few other major surface combatants can carry one or two helicopters.

10. The Il-38 May aircraft entered service in 1968 and continues in production at a rate of about one aircraft per month. In late 1969 or 1970 the Soviets also began making an ASW version of the Tu-95 Bear heavy bomber, the Bear F. Production of the Bear F may be continuing at a low rate, although there is no evidence to confirm any increase in the force since early 1972. The Soviets are continuing low-rate production of the Ka-25 Hormone helicopter and Be-12 Mail amphibian ASW aircraft.

11. *Submarine Forces.* All Soviet general purpose submarines have some potential for ASW operations.* Of the 68 nuclear-powered submarines in service, however, 40 are armed with cruise missiles and have a primary anti-ship mission. The remainder, termed multi-purpose by the Soviets, exercise in antishipping and ASW roles. All Soviet submarines continue to be handicapped by their noisiness in comparison to US units, but the late model nuclear submarines have a speed advantage.

12. The nuclear-powered V-class attack submarine—the world's fastest operational submarine—continues in production at a rate of two units per year. The nuclear-powered C-class cruise-missile submarine also is being built at a rate of two per year. The Soviets have also built single units of two other new nuclear-powered submarines, the A- and P-classes, but it is not known whether series pro-

* In addition there are 35 nuclear-powered ballistic missile submarines (SSBNs) which have some ASW potential although they are unlikely to be found performing in other than their strategic attack role.

duction is intended. The P-class is a cruise missile type, and is believed to have new missiles. The mission of the A-class is unknown—it could be a one-of-a-kind research vehicle or the prototype of a new ASW submarine class.

II. ANTISUBMARINE WARFARE WEAPONS

13. ASW weapons in use in the Soviet Navy consist of acoustic homing torpedoes, standard depth charges, small, rocket-propelled charges (the multibarrel unit) fired in salvos from surface ships, and a new rocket-propelled depth charge (probably with a nuclear warhead) on the Moskva-class. Although these weapons apparently work in simple exercises, their capabilities against evasive Western tactics and countermeasures are not known. In addition to these ASW weapons, the Soviets also have mines which are believed to have ASW application, including aluminium and rising mines which apparently were designed to combat Western nuclear submarines.

III. THE SENSOR PROBLEM

14. Environmental conditions limit the performance of sensors in locating a submarine and pose one of the greatest obstacles to the development of an effective ASW capability. To be effective, the sonar, the most widely used sensor, must discriminate the noise of the target submarine (or the returning echo) from its own internal noise, the platform's noise, and the ambient noise of the sea. In the active mode a sonar's capabilities are degraded by sound energy reflecting from the ocean surface and from the bottom, by sound energy being scattered within the ocean, and by sound energy absorption in the ocean.

15. The adverse effects of some natural phenomena can be reduced by using sonar

which operates at lower frequencies (usually below 5 kHz). A lower-frequency signal results in less absorption of sound in the ocean than higher-frequency signals. A large acoustic array is required, however, to obtain directional accuracy and high-power levels at lower frequencies.

16. *Long-Range Sensors.* There is no evidence that the Soviets have produced acoustic or non-acoustic detection devices useful for long-range (over 100 nm) detection of submerged submarines. The Soviets have not attempted a large-scale acoustic undersea surveillance system such as the US SOSUS system; the Soviet fixed acoustic detection devices are passive systems with a range of about 10 nm against quiet nuclear submarines and up to 50 nm against a snorkeling diesel submarine.

17. *Surface Ship Sonars.* The present inadequacies of the Soviets' ASW sensors—especially sonars—is a major factor limiting their ASW capabilities. About 40 percent of the Soviets' major ASW surface ships have old model sonars (24 to 30 kHz) which provide a detection range⁷ of only about 4,000 yards, even under the most favorable conditions. Another 50 percent of the ships are equipped with sonars of the 15 to 23 kHz range with a detection range of about 5,000 yards. These sonars are not of low enough frequency and high enough power to provide long-range detection capability.

18. Fewer than 15 major Soviet ships are equipped with the latest sonars (3 to 8 kHz) with range potentials similar to those of currently operational Western sonars. The 8 kHz hull-mounted sonar is installed on the Kanin and Kresta II destroyers and probably on the Krivak. The 8 kHz variable depth sonar (VDS) is installed on some Petya escort ships, the Moskva helicopter carrier, and the Krivak

⁷ Ranges given here are for initial detection (rather than redetection or tracking) under good conditions.

destroyer. The VDS enables the Soviets to fill gaps in sonar coverage resulting from layers of varying water temperatures. Initial detection range under good conditions would be about 4,500 to 7,500 yards. Other new sonars employing frequencies in the 3.0 to 4.5 kHz range and with sufficient power to achieve substantial improvements in detection ranges are installed on the Moskva helicopter carrier and possibly the Krivak destroyer. Direct path ranges of some 13,000 to 15,000 yards and first convergence zone ranges (20 to 30 nm) are possible with these sonars.

19. [

20. *Submarine Sonars.* Despite steady improvement, Soviet capabilities with submarine sonars remain inferior to those of the US. About 45 percent of the Soviet general purpose submarine force (the W-, Z-, and Q-classes) are equipped with old model sonars which are relatively ineffective as their power levels are low and they use high frequencies (24 to 30 kHz). Another 45 percent of the general purpose submarine force (the E-, N-, F-, R-, and J-classes) are outfitted with second-generation sonars which feature improved active and passive operation, lower frequencies (15 kHz), and greater power. These second-generation sonars are estimated to achieve passive detection ranges less than one-half those of modern US submarines.

21. Soviet submarines which have become operational since 1966—about 10 percent of the attack and cruise-missile submarine forces

(the C-, V-, P-, B-, and A-classes)—are believed equipped with active sonars of the third generation featuring a 3 kHz frequency. This frequency provides potentially long detection ranges. Soviet passive ranges are now estimated to be one-half those of modern US nuclear submarines. Some of this difference in capability probably results from the high level of noise generated by Soviet submarines and possibly from poor signal processing.

22. *Dipping Sonars.* A dipping sonar, carried by the KA-25 Hormone helicopter, operates in active or passive modes. In the active mode the dipping sonar can probably obtain detections at ranges of about 6,000 yards. In the passive mode it probably obtains detection up to 2,500 yards. This sonar has also been observed on a few small surface ships.

23. *Sonobuoys.* The Soviets have been producing passive sonobuoys since at least 1956. Improved electronics and acoustic system reliability, observed in recovered models, have not substantially increased sonobuoy detection capabilities. For example, there is no evidence of Soviet development of low frequency analyzing and recording sonobuoys, despite Soviet recovery of low frequency US sonobuoys and their understanding of low frequency acoustic propagation as evidenced by their publications. Soviet failure to exploit this technology may reflect shortcomings in signal processing, or a faulty assessment of US submarine quieting efforts. It is believed they have developed a new sonobuoy with a directional capability.

24. *Magnetic Anomaly Detection.* Soviet ASW aircraft, except possibly the Bear F, and some Hormones, use magnetic anomaly detection (MAD) equipment for target localization and for limited area search. Since introducing MAD equipment in about 1960, the Soviets have developed several systems. The

Il-38 May and at least some Be-12 Mail are probably equipped with a new MAD system. The May aircraft operate their MAD at higher altitudes than earlier patrol aircraft, and tenuous evidence from helicopter operations indicates that the new MAD system has a detection radius, a combined path through water and air, about twice that of the earlier systems. This improved radius is estimated to be between 1,500 and 2,000 feet—large enough to justify small area searches by MAD equipped aircraft. Higher operating altitudes and similar area searches have also been noted during recent Mail aircraft MAD operations, suggesting that some of these older aircraft may have been refitted with the new equipment.

25. *Infrared Wake Sensor.* There is some circumstantial evidence that a few Be-12s and some Il-38s as well as possibly the Bear F aircraft may be equipped with an experimental detection device, possibly an infrared wake sensor. These aircraft have conducted searches at altitudes beyond the ranges of the most recent MAD systems. At the present time, however, Soviet technology has probably not advanced sufficiently to support more than the development of a basic infrared localization device.

26. *Radar.* Soviet airborne surface search radars are capable of detecting surfaced submarines at ranges of up to about 100 nm and exposed masts and periscopes of submerged submarines up to about 15 nm. None of the Soviet radars is capable of reliably detecting wake effects from, or trailing wire antennas on, submerged submarines. Aircraft carrying the latest Soviet airborne radar, the Weteye, apparently make some limited area searches, and a new airborne I-band radar is undergoing flight testing in the Northern Fleet area.

IV. ANTISUBMARINE WARFARE OPERATIONS AND TRAINING

27. In terms of measurable operational and exercise activity, tactical ASW accounts for the bulk of all Soviet ASW activity.

28. *Coastal Operations.* Most Soviet naval exercises involve short-range forces and occur near fleet bases. Approximately 60 percent of the ASW exercises in the Northern and Pacific Fleet coastal waters include offshore defense forces and other short-range forces incapable of long-range deployment. These exercises usually involve coastal forces augmented by ASW aircraft, both helicopter and fixed wing, as well as major surface forces.

29. *Major Exercises.* Almost every year the Pacific and Northern Fleets each conduct a major exercise dubbed as a "Defense of the Homeland" exercise. The ASW aspect of these exercises has grown to include what probably are combined ASW barrier and search operations off north Norway.

30. Although the Soviets apparently devoted some exercise time in the 1970 exercise "Okean" to ASW defense in the ocean approaches to the USSR, over three-fourths of the defending forces were principally involved in anticarrier and antishipping operations.

31. In major Northern Fleet exercises for 1971, about half of the defending surface forces performed ASW activities in the area of their submarine barriers. Also, ASW patrol aircraft provided—for the first time in an exercise—24 hour on-the-scene coverage.

32. *At Sea Ship Defense.* The five fold increase in Soviet operations to distant areas such as the Mediterranean Sea and Indian Ocean since 1965 has increased naval requirements for fleet defense from submarine attack. Soviet ships operate most of the time

either in small groups of 2 to 5 ships or independently and must rely on their own defense capabilities. Combatants generally do not use ASW screens defensively (screen type formations are used to broaden the width of offensive ASW sweeps), although the Soviets do practice escorting of merchant and amphibious group convoys.

33. In the Mediterranean, for example, where there are normally about 15 to 20 surface combatants, the Soviets generally do not employ ASW screening forces even during exercises. They have, however, practiced forming surface ship and submarine barriers across the Sicilian Straits and to the south of Crete to seal off the central and eastern Mediterranean from submarine attack.

34. The four Soviet ASW aircraft previously stationed in Egypt had practiced fleet defensive roles against their own submarines both in airborne ASW barrier operations and in general reconnaissance missions. In addition, they participated in limited joint ASW operations with Soviet surface ships in the eastern Mediterranean.

35. *Command and Control Procedures.* [Soviet naval command and control is capable of providing the communications and command structure necessary to perform ASW tasks.]

36. []

37. [

38. The tactical problems of on-scene control of distant ASW operations differ only in their complexity from coastal and sea approach ASW operations. In the Mediterranean command and control of these task groups is the responsibility of the commander of the Soviet Mediterranean Squadron, except when the commander of the Black Sea Fleet is present there. In either event the effective commander of the Mediterranean Squadron might also be involved in directing anticarrier or other naval operations.]

V. TACTICAL ANTISUBMARINE WARFARE: CAPABILITIES AND OUTLOOK

39. Although tactical ASW is simpler in concept than strategic ASW, the Soviets still lack a generally effective defense for their ships against Western nuclear submarines. Modern submarine weapons have effective ranges well beyond the potential direct path ranges of almost all Soviet sonars (low frequency sonars being the exception). [

40. For the future, the Soviets have experimented and probably are continuing to experiment with low frequency sonars which will extend the possible detection range and accuracy of their systems. These new sonars may incorporate a bottom bounce and convergence zone capability. Variable depth sonars, to aid in detecting deep running sub-

marines, are believed to be under further development. The Soviets also continue to work on hydro-acoustic devices, and they may have introduced a new or modified sonobuoy into their inventory.

41. The Soviets are improving the capabilities of the shipborne KA-25/Hormone ASW helicopter. Anticipated continued effort on perfecting the autohover system of the Hormone would allow an all-weather and night airborne ASW capability which has not been noted up to now.

42. Although better detection capabilities continue to be a primary consideration of naval research and development, the Soviets also are aware of the high noise levels of their submarines, and they will attempt to improve on the engineering aspects of this problem. The Soviets are continuing to experiment with new weapon systems as well as expanding deployment of existing systems. The ASW weapon system associated with the Moskva-class helicopter cruiser [] may be deployed in the future on other combatants. The Soviets probably will continue to improve the performance of their ASW torpedoes as well.

43. Despite these continuing efforts to build ships which can defend themselves against submarines, state-of-the-art limitations remain, and the Soviets have little chance for developing an effective fleet defense over the next five years or so. At least during this period, improvements in submarine weapons and the development of even quieter Western submarines will probably continue the advantage of the submarine even in the face of expected improvements in Soviet ASW tactics, weapons, and acoustic sensors.

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