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PRM/NSC-32 CIVIL DEFENSE

OSD review(s) completed.

OVERVIEW REPORT

Summary

FEMA & DOE REVIEWS COMPLETED

This summary is not designed to be a section by section precis of the Overview Report. It is rather designed:

NSC REVIEW COMPLETED

1. to present a brief summary description of current US and Soviet civil defense programs;
2. to provide answers on the basis of the Overview Report to the key questions posed at the beginning of that report;
3. to lay out briefly the options for US civil defense policy and programs set forth in Chapters V and VI of the Overview Report.

I. US AND SOVIET CIVIL DEFENSE PROGRAMS

US strategic doctrine has consistently emphasized deterrence of nuclear war, rather than effective defense. The US civil defense program has been viewed as insurance providing some capability to enhance population survival should deterrence fail, thus fulfilling the government's statutory responsibility under the Federal Civil Defense Act of 1950 (as amended).

The Soviets integrate civil defense into an overall scheme of the likely origins, course, and consequences of nuclear war. Soviet strategy relies on convincing potential enemies that ~~they cannot win a nuclear war against the USSR~~. Should nuclear war occur, civil defense is meant to help: (1) maintain a functioning logistical base for operations by their armed forces to "win" the war; and (2) enable Soviet recovery from war damage, to improve their postwar position vis-a-vis the US and other adversaries.

At the present time US civil defense efforts are directed primarily to population and leadership protection. These programs, currently divided among several federal agencies, are now scheduled to be consolidated with natural disaster functions in on independent agency. Civil defense responsibilities are shared with state and local governments. The population protection program is slowly being modified to shift the emphasis from reliance on in-place fallout protection to crisis relocation planning for high-risk areas. Either program would take about a year's "surge" preparation during a crisis period to reach

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We concur that they have ambitious goals, but they have not made them explicit.

Soviet leadership shelters are harder than ours. About half a dozen of our regional shelters are 30 psi hard. All the Soviet shelters range from 50 psi upward.

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full effectiveness. Essential governmental functions will be protected by dispersal of personnel, some by relocation to hardened facilities; the hardened facilities are relatively few in number and relatively vulnerable to direct attack. Minimum efforts are being directed to the protection of industrial plants and equipment and to preparations for rehabilitation and recovery. Federal expenditures for the above programs are about \$140 million per year; state and local governments spend an additional \$80 million.

*Do we concern?
They have space
goals by
90?*

Soviet civil defense efforts are much more comprehensive. The Soviet program has established ambitious goals to protect the civilian leadership, shelter a portion of the essential industrial labor force, and evacuate the urban population. The program is centrally administered under military leadership, and civil defense goals are influenced by military objectives. The activities of the Soviet civil defense organization include: the development of evacuation and shelter plans; training for civil defense units, leadership and the population at large; coordination of civil defense exercises; testing and evaluation of command and control; shelter construction; and implementation of general directives from the central leadership. The effectiveness of Soviet civil defense measures is highly dependent on the amount of warning time available. Soviet civil defense doctrine also espouses effective protection of industry through hardening and dispersing, but such measures are being implemented slowly or, in some cases, not at all. It would cost about \$2 billion per year to duplicate the Soviet civil defense program in the United States; about three-fourths of this amount would be personnel.

The most probable results of a massive US-USSR nuclear exchange in 1978 involving an initial Soviet CF-CV attack on the US and a US CR-CV response with non-generated forces are set forth in Table S-1.

Table S-1

EXPECTED RESULTS FROM MASSIVE US/USSR NUCLEAR EXCHANGE, 1978

<u>Population Survival</u>	<u>US (In-Place)</u>	<u>USSR (Evacuated)</u>
Initial Survivors (%)	35-65%	80-90%
Immediate Fatalities (10 ⁶)	72-137	23-50
<u>Leadership Survival</u>		
Personnel Uninjured	Less than 40% ^a	High
Facilities Undamaged	Less than 20% ^a	High
<u>Economic Survival</u>		
	Low	Low

Are they harder than ours?

^aAssuming EOCs are not targeted.

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II. KEY QUESTIONS

A. What is the Role of Civil Defense in Strategic Policy?

Significant differences exist as to the role of civil defense in relation to strategic policy. Some analysts argue that civil defense capabilities influence an opponent's perception of the strategic balance and may, in the extreme, reflect on the credibility of a deterrent. They further contend that the lack of population protection could reduce stability and inhibit decision-making.

This conclusion rests on the following assumptions:

- 1) Defensive as well as offensive capabilities contribute to the strategic balance. Civil defense will therefore be calculated into the balance of forces.
- 2) The amount of population protection will figure into the cost/risk thinking of an opponent.
- 3) There is a positive correlation between surviving population and a nation's ability to recover.
- 4) Deterrence rests, in part, on a willingness to act. An inability to protect a population will inhibit decisions to act, by inducing doubts and increasing the perception of risks.
- 5) The Soviet ability to provide civil defense might put them in a position to coerce the United States. An asymmetry in civil defense capability will undercut US confidence in a crisis and will encourage Soviet risk-taking and intransigence.

In contrast, others contend that civil defense plays no role in the perception of a nuclear balance. They argue that population protection that civil defense can provide is insignificant in light of the magnitude of destruction following a nuclear exchange. Moreover, they argue that civil defense gets no consideration in crisis decision-making and has no impact on stability.

This argument is based on the following assumptions:

- 1) Given the magnitude of offensive power passive defense will receive little or no consideration in calculating the strategic balance.
- 2) Given the massive levels of destruction contemplated, the amount of population protection will be insignificant in an estimation of costs and risks.

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- 3) There is no demonstrable correlation between population survival and national recovery.
- 4) The ability to protect a population has had little impact in calculating the potential willingness to use a deterrent. In past crises the availability of civil defense has had no influence on crisis decisions or the willingness of US leaders to act.
- 5) The absence of a US civil defense effort would not pose a threat significant enough to inhibit or coerce policy-makers.

Still a third group argues that civil defense contributes to the instability of the nuclear balance by fostering among policy-makers the illusion that the destruction resulting from nuclear war can be limited and hence encouraging them to take greater risks of nuclear conflict. This argument rests on the assumption that a major gap will exist between civil defense capabilities in reality and the perceptions of them by policy-makers.

B. Can civil defense measures make a significant difference in the outcome of a nuclear exchange?

There remains considerable uncertainty as to the extent that civil defense measures would make a difference in the outcome of a nuclear exchange. Questions center on each nation's ability to fully carry out plans in times of crisis and on the longer-term prospects for recovery and reconstitution. Civil defense measures would not prevent massive damage to each nation's economic, political, social, and military structure, given the immense nuclear arsenals possessed by the US and USSR and the immovable physical plant associated with each of these areas in a modern industrial society. Civil defense measures designed to improve immediate population, work force and leadership survival through a combination of dispersal and fallout protection would be effective to the extent that plans could actually be implemented (attack timing, availability of transportation, etc., are uncertainties). In-place shelters hardened against blast and fallout would provide good protection unless directly targeted. Spontaneous evacuation, a phenomenon often postulated for the automobile-rich US, could reduce immediate casualties if the net result was movement out of risk areas. Long-term prospects for the immediate survivors in both nations would depend not only on the availability of subsistence levels of food, medical supplies, etc., but also on how quickly they could adapt to what would probably be a radically unfamiliar environment and social structure.

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Specifically, properly implemented civil defense measures could:

(1) enhance population survival against the immediate effects of a nuclear attack (blast, radiation, fallout). Given sufficient warning time (about a week) and a successful evacuation (80% was used in the analysis) from urban industrial targets, the majority of each nation's population would survive the immediate effects of a massive US/USSR nuclear exchange. For a mid-1980's massive nuclear exchange, analyses of the attack-related effectiveness of civil defense show that:

- a. In the US, successful population evacuation (for which the US does not currently plan) would provide for initial survival of 60-90% of the population, compared with 35-65% survival for the population in-place and protected only from fallout.
- b. In the case of the USSR, survival levels would be about 80-90% with the population evacuated, for which the USSR does now plan, compared to 60-80% survival with population in-place. The differences between estimated US and USSR population survival rates are due primarily to the differences in megatonnage assumed to be delivered by each nation.

(2) enhance work force survival against the immediate effects of nuclear war. Losses among those remaining in industrial target areas during an attack would be high; however, the losses among those who had been evacuated out of target areas would be low. In one sample of Soviet industrial facilities, however, hardened shelters existed for 12 to 24% of the work force. As in the case of a general population evacuation, the US does not currently have an operational plan to protect its work force through either evacuation or hardened shelters.

(3) enhance leadership survival among those elements of national/local leadership not directly targeted. Leadership in shelters identified and targeted directly would not be expected to survive; however, leadership in shelters not targeted and reasonably hardened (as in the Soviet civil defense program) would have a good chance of surviving.

On the other hand, civil defense measures would not:

- prevent massive damage to each nation's economic, political, social, and military structure, that is, damage levels of 70-90% against the identified industrial target base of each nation. Protection of industrial and most military facilities against nuclear attack is virtually impossible or prohibitively expensive. Only in the case of extremely hard facilities (ICBM silos, for example) can a facility remain as a nuclear target and maintain a chance of survival. Protection of some critical economic equipment and supplies might be feasible and might aid in postwar recovery. However, such efforts would be effective only in peripheral areas, not in areas directly attacked.

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Combined analytical results for a massive nuclear exchange occurring after the current US and Soviet civil defense programs are projected into the mid-80s and implemented as planned (i.e., Soviet evacuated and US in-place, with 10% spontaneous evacuation) are summarized below in Table S-2. A US evacuation scheme is expected to increase initial survivors to 60-90%. Spontaneous evacuation out of risk areas in excess of 10% would lower US in-place casualty figures.

Table S-2

MID-80s CIVIL DEFENSE PROGRAM EFFECTIVENESS

<u>Population Survival</u>	<u>US (In-Place)</u>	<u>USSR (Evacuated)</u>
Initial Survivors (%)	35-65%	80-90%
Immediate Fatalities (10 ⁶)	75-145	25-55
<u>Leadership Survival</u>		
Personnel Uninjured	Low	Probably high
Facilities Undamaged	Low	Probably high
<u>Economic Survival</u>	Low	Low

C. What civil defense measures appear to be most useful? Can these measures be countered by altering the attack?

Civil defense measures that attempt to reduce vulnerability through in-place hardening (rather than by redistribution, which proliferates potential targets and increases the cost, in terms of weapons required, significantly for attaining a given level of damage) tend to be less effective and more sensitive to changes in the attack lay-down. For example, in-place sheltering and hardening measures can be overcome by changes in the type and/or number of weapons used against a given target, changes in weapon height-of-burst, etc., or by targeting. As noted previous, only through extreme hardening can a resource remain a target of value and maintain a chance of survival.

Civil defense measures that distribute leaders, people, and industrial resources, as significantly to reduce the efficiency with which these elements can be targeted, are the most useful and less susceptible than other measures to being overcome by alternatives in the attack laydown. For example, population evacuation that significantly reduces the number of people at risk to a given nuclear weapons not only enhances population survival against an economic attack, but also retains significant effectiveness should an attacker re-target to kill population per se (see Table S-3).

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These are ACDA numbers. They are based on a much larger attack and do not assume careful Soviet planning.

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Table S-3

IMMEDIATE SURVIVORS OF A MAJOR NUCLEAR EXCHANGE IN THE MID-1980s
(% OF TOTAL POPULATION)

<u>Population Status</u>	<u>US</u>	<u>USSR</u>
In place and targeted	25-40%	50-65%
In place and not targeted	35-65	60-65%
Evacuated and not targeted	60-90	80-90
Evacuated and targeted	50-70	70-80

Not according to our file

If the US launched an attack at the mid-point of a Soviet evacuation, it would cause 30 million more fatalities than an attack when evacuation was complete. The use of megaton weapons would also increase blast and residual damage and subsequently increase fatalities. Detonating weapons on or near the ground could result in an additional 15 million fatalities in the Soviet Union due to early fallout.

There is uncertainty about the feasibility of sustaining population evacuation for a long time (more than about a month), either in a continuing crisis with no nuclear attacks or one with nuclear attacks repeated every few days. Soviet evacuation planning aims to keep industry in operation, but many feel the discomfort and inconvenience of temporary housing and the transportation problems engendered in moving workers to and from their factories would lead to great inefficiencies, low national morale, and eventual economic stagnation. Adopting a repeated attack policy could be difficult for the US since, as presently configured, many of our strategic forces are not now suitable for retaliatory strikes extended over long periods of time. (With respect to the Minuteman force, this situation will be substantially changed by 1983.)

D. What important aspects of civil defense and attack strategies remain unexamined?

The relationship between survival and recovery poses unexplored questions. Some argue that initial survivability is not a good measure of longer-term recovery and reconstitution, and that, for example, a large initial surviving population would quickly deplete strategic stockpiles and may so overburden the severely damaged medical and industrial resources of a nation's postwar economy that recovery could be hindered rather than helped. Others speculate that manpower is the most basic of a nation's recovery resources and military strength, and that initial differences in leadership and population survivability will probably be translated into similar differences in reconstitution.

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Another question concerns the relationship between initial survival and longer-term survival. Some predict that longer-term problems and "neglected" effects will be so severe that very few initial survivors will ever live to usefully contribute to postwar recovery. Others predict that initial survivors have a good chance of eventually returning to useful work.

Uncertainty also exists about the feasibility of sustaining population evacuation for a long time (more than about a month), either in a continuing crisis with no nuclear attacks, or one with nuclear attacks repeated every few days and so forcing population to remain sheltered.

Finally, this assessment of civil defense is based on calculated assumptions about the size, extent, nature, and impact of nuclear exchanges between the US and the Soviet Union. A number of potentially important alternative possibilities have not been carefully examined. They include:

- 1) The nature of protracted nuclear campaigns;
- 2) The effects of forward based systems, reserve forces and/or third country forces;
- 3) Major differences in weapons yield and level of attack from those we postulated.

These issues will require further study before their implications for civil defense can be determined.

III. US CIVIL DEFENSE POLICY OPTIONS

Civil defense policy sets forth the assumptions, goals, and rationale underlying program choices. Four alternative policies were identified in the analysis and are briefly summarized here.

1. The Myth of Civil Defense: This policy option is based on the assumptions: - that civil defense would be ineffective in protecting population, given the characteristics of the US and Soviet nuclear arsenals and the longer-term effects of a massive US-Soviet nuclear exchange; that civil defense is neither a significant element of the strategic balance nor a significant factor during a crisis; and that there are no indications that the civil defense postures of the superpowers have a significant effect on the perceptions by other countries of the strategic balance.

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For some, the implications of adopting this policy go beyond merely eschewing a civil defense program. They would claim that the analytical results presented in Table S-2 are dangerous because they could lead to false conclusions about limiting casualties and thereby weaken deterrence. They would prefer declaratory policy stressing that the massive absolute levels of destruction expected in a nuclear exchange, coupled with the longer-term effects, make recovery and survival of the two societies a moot question. Such a declaratory policy could also assert the US intention to monitor closely the Soviet civil defense program and to make adjustments in our offensive forces or targeting policy in order to negate Soviet future civil defense improvements as necessary.

2. Insurance: This policy is based on the assumption that the government's statutory responsibility to protect its population and enhance national recovery, coupled with the chance that a large number of initial survivors might live long lives thereafter, is adequate justification for making the modest investment in a workable program to increase the number of initial survivors among the US population. In the same light, it is argued that, because initial survival of federal leadership and related continuity of government functions will likely enhance population survival in the longer term, a small investment to enhance leadership survival is also prudent. This policy of "insurance against the failure of deterrence" assumes that civil defense will have neither a positive nor negative effect on deterrence nor a significant impact on crisis management. It also assumes that there is no need to relate US civil defense policy and programs to those of the Soviets. Instead, the scope and character of the US program should be made, like decisions on insurance generally, on the basis of: (1) the type and severity of the damage that could occur; (2) the probability of the damage occurring; and (3) the costs of the insurance. Different judgments on each of these factors can lead to different conclusions as to what insurance is desirable. The insurance rationale was used to support both the FY 1962 Kennedy program (\$550 million in FY 1979 dollars) and as well as the modest Nixon program of FY 1974 (\$115 million in FY 1979 dollars).

3. Equivalent Survivability. Equivalent survivability exists if the proportions of the leadership, population, and economy of the USSR surviving a nuclear exchange are roughly equal to the proportions of the leadership, population, and economy of the US surviving the exchange. [This policy starts from the finding that at the present time US policies and programs do not provide for equivalent survivability. Such a goal is, however, in US national interests and is a necessary corollary of US strategic forces policy. Achievement of that goal requires new civil defense measures.

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Current US strategic policy is directed towards the maintenance of essential equivalence. A marked asymmetry in the vulnerability of strategic forces would be incompatible with this goal. So also is marked asymmetry in the vulnerability of leadership and population, which would make it difficult or impossible for the US to achieve an outcome of a nuclear exchange "on the most favorable terms possible" or one likely to maximize US postwar power relative to the enemy. Marked asymmetries in survivability could also undermine the credibility of the US nuclear deterrent with our NATO and Japanese allies. Inasmuch as the Soviets believe that effective defenses are essential to deterrence, a marked difference in the potential survivability of US and Soviet leadership and population might also lead them to doubt the credibility of the nuclear deterrent. Equivalent survivability as a policy does not necessarily imply similar or equivalent programs since survivability is also a function of the nature of the society and of the attack directed against it.

4. Equivalent Programs: This policy is based on the assumption that US civil defense can assure adequate security and contribute effectively to deterrence and crisis management only if it is substantially similar to and equal to the Soviet civil defense program. While it is essential to have equivalent survivability in terms of outcome indices, it is equally important, given the uncertainty about exactly how offsetting US advantages might be perceived, to have equivalent programs in terms of input indices. A marked unfavorable discrepancy in programs would lead the Soviet and others to question the credibility of our nuclear deterrent.

IV. US CIVIL DEFENSE PROGRAM OPTIONS

The following represent five alternative civil defense programs (one with two variations) ranging from the very austere to the very comprehensive. Material on the relation between these programs and the policy options, the costs of these programs, and their effectiveness is provided in Tables S-4, S-5, and S-6.

Alternative 1: Minimal Civil Defense. Maintain little or no civil defense (e.g., warning only) for population protection, and combine and curtail other civil defense activities

Alternative 2a: Current Level and Program. Maintain a modest base of civil defense activities with dual use applications. Continue current modest start on evacuation planning, with plans to be developed by the mid- to latter 1980s. Supporting systems needed for effective evacuation operations would not be enhanced.

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Alternative 2b: Current Level with Emphasis on Evacuation Planning. Maintain a modest base of civil defense activities with dual use applications. Reorient program, within current ceiling, to focus more on evacuation planning.

Alternative 3: Enhanced Population Evacuation/Continuity of Government Capability. Increase capabilities for crisis relocation and for continuity of government so as to expand substantially protection of population and leadership and so as to be able to implement plans on one-two weeks' notice. This capability is to be obtained by the mid-1980s.

Alternative 4: Major Civil Defense Capability (Long Term). Over the next two decades, develop and maintain a capability that matches the civil defense program of the Soviet Union, through the systematic incorporation of fall-out and blast shelters in new construction.

Alternative 5: Major Civil Defense Capability (Short Term). Over the next five years, develop a civil defense capability that matches or surpasses that of the Soviet Union, by the construction of blast shelters (100 psi) in risk areas and of fall-out shelters in non-risk areas.

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Table S-4

CIVIL DEFENSE POLICY/PROGRAM COMBINATIONS

Program	Policy			
	Myth	Insurance	Equiv. Survivability	Program
1	x			
2a,b		x		
3		x	x	
4			x	x
5			x	x

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Table S-5

COSTS OF ALTERNATIVE CIVIL DEFENSE PROGRAMS
(\$ million)

Program	Average Annual Costs FY 1980-1984					Five Year FY-1980-84 Federal
	Federal			State & Local	Total	
	Population Protection	COG	Total			
1	11	8	19	30	49	95
2a	105	35	140	80	220	700
2b	105	35	140	80	220	700
3	240	88	328	90	418	1,640*
4	950	88	1,038	90	1,128	5,190**
5	13,000	88	13,088	90	13,178	65,440

* Requires \$500 more in FY 1985-86 to complete program.

** Requires \$16,450 more in FY 1985-99 to complete program.

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SUMMARY