~~TOP SECRET~~
~~RESTRICTED DATA~~

1963

REPORT

OF THE

NET EVALUATION SUBCOMMITTEE

NATIONAL SECURITY COUNCIL

I. THE PROBLEM

1. The directive for the 1963 Net Evaluation, as approved by the President, stated that:

> "The NESC will develop studies of a series of general wars initiated yearly during the period 1963 through 1968. Comparative results in each war will be determined with emphasis on the degree of damage sustained by the US and an analysis will be made to identify significant trends in national defense capabilities."1/

2. Based on this directive, the Net Evaluation Subcommittee (NESC) war gamed a series of general wars occurring as of 1 July each year from 1964 to 1968. These wars were initiated alternatively by a United States pre-emptive attack and by a Soviet pre-emptive attack, each of which, in turn, generated a retaliatory attack. Using programmed US forces and estimated Soviet forces, with projections for both where necessary, each war game was completed through to the end of the initial nuclear exchanges.2/ To maintain comparability of results, certain key parameters were defined and held constant throughout the problem--the strategy employed by both sides, their conditions of alert, strategic warning, and targeting philosophies. Other parameters relating to forces, reaction times, and weapons

1/ "In amplification of the above, the Committee will examine the comparative strengths of the US and USSR during the period 1963 through 1968. The evaluation of the net capabilities during the 1963-1965 time frame will be based primarily upon previous Net Evaluations and current SIOP war gaming. To determine any significant changes in capabilities an analysis of subsequent years, by hand gaming methods utilizing gross factors, will be developed to the point of calculating weapons and megatons down on each country. In the period beyond 1965 the effects of the introduction of feasible offensive and defensive weapons systems will be examined to determine their influence on net capabilities."

2/ Defined as the complete exchange of strategic nuclear offensive weapons in their initial attacks and does not include restrike, reserve, or residual capabilities.

systems characteristics were permitted to vary over the years in keeping with estimates of capabilities. The results of these wars were expressed in terms of weapons and megatons down on each side by target categories.

3. The National Military Command System Support Center (NMCSSC), using the weapons and megatons down on the various categories of targets specified, calculated the (1) casualties, (2) fatalities, and (3) percentage of industrial-capacity destroyed.

4. Based on these results, the committee compared the degree of damage sustained by each side, and analyzed the trends in national capabilities.

5. The results of 3.3(b)(5), 3.3(b)(8) 3.3(b)(5), 3.3(b)(8) 3.3(b)(5), 3.3(b)(8) were analyzed separately. The analysis was based on attacks occurring in 1964, representing levels of damage applicable to any year during the 1964-1968 period.

6. For the 1968 wars, the reductions in the number of casualties which would result from an implementation of an improved Civil Defense program were determined.

7. In addition to the analyses discussed above, several variations were developed and studied:

a. Employment of 3.3(b)(5), 3.3(b)(8) by the United States and by the Soviet Union.

b. Alternative methods of employing missiles against urban-industrial areas that were assumed to be defended by an anti-ballistic missile system of the NIKE-ZEUS/SPRINT type.

c. Employment of clandestine methods to attack areas defended by an anti-ballistic missile system.

8. A study of the long term effects of radioactive fallout based on the weapons used in 1966 was conducted by the Atomic Energy Commission (AEC), and their report is included herein.

IV. SUMMARY AND CONCLUSIONS

60. The series of nuclear exchanges conducted each year during the period 1964-1968 produced results which are summarized in the following paragraphs. Several trends became evident; in addition, there are some specific observations which were derived from separate studies relating to a single year.

61. Trends

a. Casualties.

(1) There was a trend of increasing casualties in the US throughout the period studied. As the result of Soviet attacks, the US fatalities increased from a low of 63 million in 1964 to 134 million in 1968.

(2) Soviet casualties resulting from US attacks remained nearly constant throughout the period. Fatalities in the USSR varied from 136 million to 143 million.

b. Industrial Damage. The trend in industrial damage closely followed the trend of casualties, with US industrial damage increasing from 40 percent to 50 percent when the USSR pre-empted and running only some five percent less when the USSR retaliated. Soviet industrial damage varied from 60 percent to 72 percent in both the US pre-emption and retaliation.

c. Weapons Available. Soviet weapons scheduled against the US remained almost constant each year, about 1200, but there was an increase in megatons from 7000 to 16,000. On the other hand, US weapons scheduled against the USSR increased from about 6.2(a)

6.2(a)

d. Weight of Soviet Attack.

(1) The Soviet pre-emptive attacks in 1964 and 1965 delivered fewer megatons on the US than the US was able

146

to deliver in retaliation. From 1966 on, however, the Soviet pre-emptive attacks were heavier than even the US pre-emptive attacks on the USSR.

(2) Although the US pre-emptive attacks significantly degraded Soviet forces in each year, the Soviet retaliatory attacks increased steadily in both numbers of delivered weapons and megatons.

e. Weight of US Attacks. In each year of the study, the weight of the US attack delivered against the Sino-Soviet Bloc varied only slightly between the pre-emptive and the retaliatory attack. This was due to the inability of the Soviets to destroy any appreciable portion of the US strategic forces even in pre-emption.

f. Role of US and Soviet Bomber Forces. While the proportion of US bombers to missiles decreased throughout the period, in 1968 aircraft still delivered 3.3(b)(5), 3.3(b)(8) 3.3(b)(5), 3.3(b)(8) The Soviet bomber force decreased during this period. In pre-emption, the Soviet bombers delivered about two-thirds of the megatonnage in 1964 and approximately one-fourth in 1968. In retaliation, the megatonnage delivered by Soviet bombers remained relatively constant at about one-third of the total.

g. Residual Forces. The residual forces on each side following the initial nuclear exchange increased each year. Thus the capability of each side to inflict damage in subsequent attacks assumed increasing significance.

62. Observations

a. Clandestine Attack. The clandestine attack against the US in 1968, which was designed to circumvent a hypothetical anti-missile defense, was 3.3(b)(5), 3.3(b)(8) 3.3(b)(5), 3.3(b)(8) 3.3(b)(5), 3.3(b)(8) The attack produced 44 million fatalities in 23 cities attacked and 54 million fatalities nationwide.

The attack plan and its implementation was such that the risk of detection was not disproportionate to the results obtained.

b. Sea-Launched Ballistic Missiles. The Soviets had more to lose than to gain in an attack initiated by SLBMs against the United States with US forces in a high state of alert. The US strategic bombers, normally the SLBMs' primary targets, were dispersed; this left few time sensitive targets to be attacked. As an SLBM warning capability came into existence in 1966, a surprise attack from the sea became even less promising. In the games analyzed, the SLBMs were used effectively in conjunction with the ICBMs and they also constituted a large portion of the Soviet reserve.

c. Defense Against Sea-Launched Ballistic Missiles. The defense against a missile attack launched from the sea requires warning systems to provide strategic, as well as tactical, warning and a system or systems capable of destroying the missiles. Missile destruction can be accomplished by destroying the submarine before launch, by destroying the missile in its boost phase, or by intercepting the incoming missiles.

d. Long-Term Effects of a Nuclear Attack. The AEC study of long-term effects of a nuclear attack against the US emphasizes the lack of knowledge concerning the combined effects on survivors of radiation, blast, fires, floods, substandard diet and sanitary conditions, and lack of medical services and care.

e. US Civil Defense Program. When a modest US civil defense program providing fallout shelters, training and education of the population 3.3(b)(5), 3.3(b)(8) was assumed, an analysis of the 1968 Soviet pre-emptive attack showed that the increased protection afforded would have saved 27 million American lives.

f. Anti-missile Terminal Defense. The anti-missile terminal defense of a city may be partially circumvented by weapons burst outside the limits of the defense to produce fallout casualties. Against such an attack, a civil defense program is particularly effective in saving lives. For instance, in an offset attack of 3.3(b)(5), 3.3(b)(8) 3.3(b)(5), 3.3(b)(8) a civil defense program providing a 3.3(b)(5), 3.3(b)(8) factor reduced fatalities in these cities from 68 percent to 25 percent. In a comparable direct attack against undefended cities, 3.3(b)(5), 3.3(b)(8) only reduced casualties in these cities from 91 percent to 82 percent because most of the fatalities resulted from blast. It is important to note, however, that as the weight of the enemy attack increases, the efficacy of the terminal defense/shelter program combination, both in increasing urban survivability and nationwide survivability, will diminish.

g. Large Weapon Attacks. An attack delivering 3.3(b)(5), 3.3(b)(8) on the US produced 3.3(b)(5), 3.3(b)(8) fatalities, while 3.3(b)(5), 3.3(b)(8) 3.3(b)(5), 3.3(b)(8) In these attacks only the effects of blast and radioactive fallout were considered, since insufficient knowledge exists relative to other possible phenomena.

63. Conclusions

The following conclusions appear inescapable as a result of our studies. However, it should be noted that only the currently known and assessable effects of nuclear weapons could be utilized in determining the results of the nuclear exchanges.

a. In the years of this study, 1964-1968, neither the US nor the USSR can emerge from a full nuclear exchange without suffering very severe damage and high casualties. This holds true whether the attack is initiated by the US or the USSR.

b. Soviet strategic forces throughout the years 1964-1968 possess, at best, a limited capability to degrade the US strategic force. Since the Soviets cannot materially reduce the weight of US attacks, their most likely strategy would be: (1) deterrence, and (2) if deterrence fails, one which will cause the maximum injury to the US.

c. The US strategic force is so constituted that, if deterrence fails, the US can exercise the full range of a controlled response strategy, either in pre-emption or retaliation, with assurance that, if necessary, the objective of urban-industrial destruction in the USSR can still be achieved.

d. Both sides will possess substantial residual strategic nuclear forces after each initial exchange; however, in all cases the US forces would be the larger. The ability to use these residual forces effectively depends upon survivable command and control and an effective post-attack reconnaissance intelligence capability.

e. US defensive systems must be made more effective against the gamut of Soviet offensive weapons. However, it appears that the achievement of an effective nationwide ballistic missile defense would do more to alter the results of a nuclear exchange than any other single military development.

f. US weapons systems of the type currently programmed, including improvements thereto, will not, by themselves, reduce to an acceptable level the damage or casualties resulting from a full nuclear exchange. It follows, therefore, that there is a need for the development of new offensive and defensive systems beyond those presently being pursued.