

DTIC FILE COPY

(2)

SECRET

DNA 6147T

DYNAMIC RETARGETING FOR U.S.
STRATEGIC FORCES (U)

Document released under the
Freedom of Information Act
DNA Case No. 88-70

Victor G. Jackson
The Rand Corporation
1700 Main Street
Santa Monica, California 90406

DTIC
ELECTE
MAY 3 1 1990
D_{CS} D

1 April 1982

Topical Report for Period 15 October 1978-1 April 1982

CONTRACT No. DNA 001-79-C-0034

THIS WORK WAS SPONSORED BY THE DEFENSE NUCLEAR AGENCY
UNDER RDT&E RMSS CODE 83310794G4 P99QAXD800149 H2590D

Prepared for
Director
DEFENSE NUCLEAR AGENCY
Washington, DC 20305

DISTRIBUTION STATEMENT A

Approved for public release
Distribution Unlimited

SECRET

90 05 30 030

~~SECRET~~

(This page is unclassified)

~~UNCLASSIFIED~~

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DNA 6147T	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) DYNAMIC RETARGETING FOR U.S. STRATEGIC FORCES		5. TYPE OF REPORT & PERIOD COVERED Topical Report for Period 15 Oct 78 - 1 Apr 82
		6. PERFORMING ORG. REPORT NUMBER R-2903-DNA
7. AUTHOR(s) Victor G. Jackson		8. CONTRACT OR GRANT NUMBER(s) DNA 001-79-C-0034
9. PERFORMING ORGANIZATION NAME AND ADDRESS The Rand Corporation 1700 Main Street Santa Monica, California 90406		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS Subtask P99QAXDB001-49
11. CONTROLLING OFFICE NAME AND ADDRESS Director Defense Nuclear Agency Washington, D.C. 20305		12. REPORT DATE 1 April 1982
13. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		13. NUMBER OF PAGES 92
		14. SECURITY CLASS. (of this report) SECRET
		15. SEC. CLASSIFICATION/DOWNGRADING DECLASS. AUTHORITY OADR
16. DISTRIBUTION STATEMENT (of this Report)		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES This work was sponsored by the Defense Nuclear Agency under RDT&E RMSS Code B331079464 P99QAXDB00149 H2590D.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Target Acquisition Strategic Weapons Missile Targets Strategic Intelligence Target Intelligence		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This research originated in a concern that U.S. strategic forces might not have the capability to be pretargeted for all of a large and growing number of possible force employment options, thereby requiring dynamic or time-urgent retargeting immediately before launch. The purpose of this study was twofold: to assess this concern by comparing retargeting capabilities and requirements, and to identify possible improvements where appropriate. The study: reviews and describes current strategic force targeting and retargeting capabilities		

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

~~SECRET~~

(This page is unclassified)

next
p. 8

(This page is unclassified)

~~SECRET~~

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

18. SUPPLEMENTARY NOTES (Cont'd)

[REDACTED]

20. ABSTRACT (Cont'd)

→ and procedures; introduces a broadened view of both the range of situations where retargeting might be required and the range of activities involved in the retargeting process; analyzes the retargeting implications of several possible operational contexts; identifies some specific problems; suggests possible solutions to those problems; and suggests priorities for implementing them.

Keywords: Target acquisition, missile targets

[REDACTED]

[REDACTED]

Accession For	
NTIS CRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution /	
Availability Codes	
Dist	Avail and/or Special
A-1	



(This page is unclassified)

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

~~SECRET~~

~~SECRET~~

(U) SUMMARY

(U) This report presents the results of a Rand study of dynamic retargeting of U.S. strategic forces, where dynamic retargeting is defined as retargeting that is time-urgent. Current U.S. strategic forces can be and, in fact, are retargeted periodically in accordance with the requirements of periodically changing plans, but this retargeting is a peacetime activity that is scheduled in advance and proceeds relatively slowly.

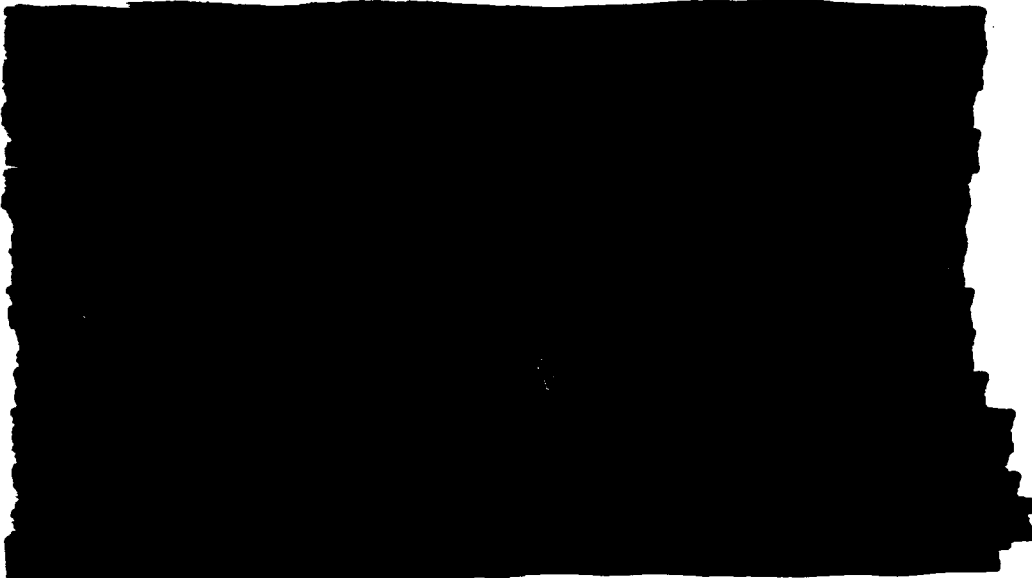
(U) The immediate background of this study of dynamic retargeting was a related Rand study of what have come to be called *target building blocks*. Target building blocks are sets of targets identified in peacetime as a means of facilitating the creation of new options for strategic force employment. The link between the two studies was the concern that as the number of alternative possible attack options increases, the probability that the force will require retargeting before launch also increases. Once the possibility of a retargeting requirement originating in a broadened range of attack options was recognized, however, the study was broadened to include other reasons for prompt retargeting as well.

(U) The basic purpose of the study was to identify improved systems and procedures for dynamic or time-urgent retargeting. To this end the study included: a review of current targeting and retargeting procedures and capabilities; identification of various alternative situations where dynamic retargeting might be required; specification of the several essential functions in retargeting; an analysis of each of these alternative situations; identification of several significant problems that might be encountered in retargeting, and possible solutions to those problems; and some possible changes in systems and procedures, with some suggested priorities for making those changes.

(U) Different U.S. weapon systems have different targeting and retargeting capabilities, limitations, and requirements. The Minuteman III intercontinental ballistic missile (ICBM), for example, can be retargeted remotely from the Launch Control Center [REDACTED]

~~SECRET~~

~~SECRET~~



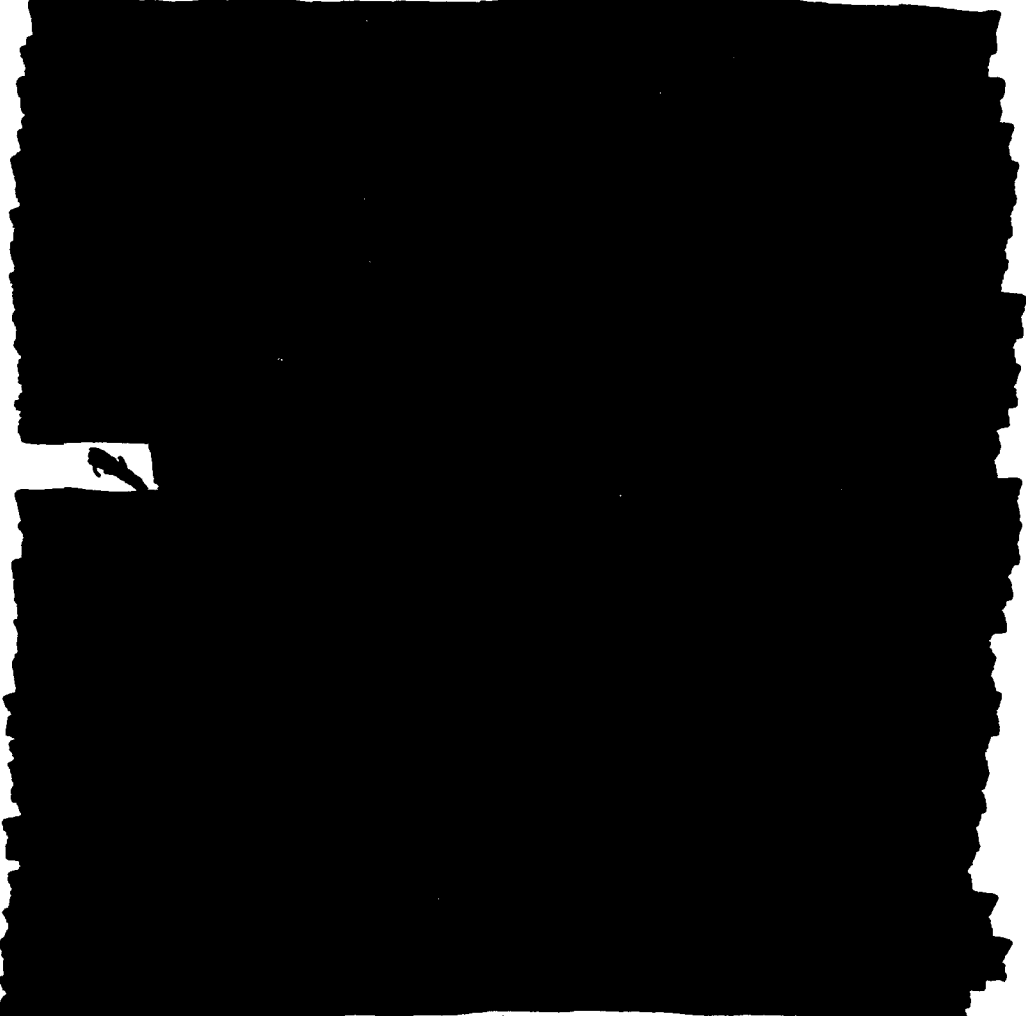
(U) Six alternative types of situations where dynamic retargeting might be required were identified. Two of these are peacetime situations, two are strategic or general war situations, and two are war situations short of general war. Each presents different problems for retargeting. The peacetime situations can be called *normal peacetime operations*--which involve primarily the alert force--and *crisis operations*. The two war situations short of general war--where U.S. strategic forces might nevertheless play a supporting role--are *theater war* and *Soviet limited nuclear options*. The two categories of strategic or general nuclear war are *preplanned strategic operations* and *follow-on strategic operations*.

(U) The process of readying crews and equipment for launch is only the end product of the retargeting process. Essential prior steps are, first, the National Command Authorities' decisionmaking activities, and, second, the preparation and distribution of operations orders--the selection of targets, the sorting of the targets for different types of weapon systems, and the grouping of the targets into bomber sorties and multiple independently targetable reentry vehicle (MIRV) packages--performed in peacetime by the Joint Strategic Target Planning Staff. Even the flow of information and intelligence that identifies targets and then triggers the process must be considered.

~~SECRET~~

~~SECRET~~

(U) Of the six categories of situations where retargeting might be required, only the two strategic or general war categories were found to present significant retargeting problems. Dynamic retargeting may be required at times in the other four categories but the retargeting requirement there tends to be less time-urgent and, more important, would usually occur in an undisrupted environment. In the absence of major nuclear attacks against the United States, most if not all the agencies and organizations essential to the retargeting process would be undamaged and functioning normally. In the two strategic war categories, on the other hand, damage could be heavy and, without special provisions, essential links in the retargeting chain might be missing.



³
~~SECRET~~

Page 4 is deleted.

UNCLASSIFIED

PREFACE

(This Preface Is Unclassified)

All U.S. strategic weapon systems can be assigned specific targets to attack, and these targets can be changed as required by changes in war plans. In accordance with the policy of seeking deterrence by means of a high-confidence second-strike retaliatory capability, however, such weapon systems have been designed for *peacetime* targeting and retargeting. This targeting and retargeting is scheduled in advance and is relatively leisurely.

This report summarizes recent Rand research on dynamic retargeting, that is, possible time-urgent *wartime* retargeting or even *peacetime* retargeting that is too urgent to await the next scheduled revision of war plans. This research, sponsored by the Defense Nuclear Agency, focuses attention on the spectrum of military situations where retargeting of part of the U.S. strategic force might be required, on the range of activities involved in retargeting, and on the force retargeting capabilities that are available and those that are required. The results of this study should be of interest to personnel in the Office of the Secretary of Defense and the Joint Chiefs of Staff concerned with war plans, operations, and requirements, and to other Department of Defense, Air Force, and Navy personnel concerned with present and future weapon system retargeting requirements, capabilities, and limitations.

A companion report, addressing the utility of timely intrawar retargeting of U.S. strategic ICBMs and cruise missiles using potentially available information regarding prior wartime events, is:

Armas Laupa, *Utility of Dynamic Retargeting of ICBMs and Cruise Missiles* (U), R-2791-DNA, July 1981 [REDACTED]

Particularly because of the limited availability of documentary material regarding many aspects of this study, I am heavily indebted to a number of individuals for the assistance they provided. These include personnel in the Operations Directorate of the Joint Chiefs

UNCLASSIFIED

UNCLASSIFIED

of Staff, the Office of the Deputy Chief of Naval Operations (Plans, Policy and Operations), the Navy Strategic Systems Project Office, the USAF Ballistic Missile Office, and a number of USAF Officers with current and recent Strategic Air Command experience. In addition, a visit to the 1st Strategic Aerospace Division at Vandenberg Air Force Base provided a unique opportunity for close contact with the Minuteman ICBM part of the force. Within Rand, Captain C. L. Freeman (U.S. Navy, Ret.) and James T. Quinlivan were particularly helpful.

An early draft of this report benefited substantially from a variety of comments by Major David M. Williamson, the Defense Nuclear Agency Contracting Officer's Technical Representative for the study, and Rand colleagues Benjamin S. Lambeth and Cindy Williams.

I alone am responsible for any factual errors that might exist in the report, however, and for the analysis and conclusions reached.

UNCLASSIFIED

TABLE OF CONTENTS

(This Table of Contents Is Unclassified)

<u>Section</u>	<u>Page</u>
SUMMARY	1
PREFACE	5
I. INTRODUCTION	9
Purpose and Scope	11
Overview	12
Notes to Sec. I	13
II. TARGETING AND RETARGETING TODAY	14
SIOP Targeting Planning	14
Selected Non-SIOP Targeting Planning	29
Reconstituted Bomber Targeting Planning	32
Notes to Sec. II	35
III. A BROADENED VIEW OF RETARGETING	37
Retargeting Situations	37
Retargeting Activities	41
Notes to Sec. III	43
IV. RETARGETING SITUATION ANALYSIS	44
Normal Peacetime Operations	45
Crisis Operations	48
Theater War	51
Soviet Limited Nuclear Options	54
Preplanned Strategic Operations	56
Follow-On Strategic Operations	59
Notes to Sec. IV	63
V. PROBLEMS AND POSSIBLE SOLUTIONS	66
The Retargeting Contexts of Primary Concern	66
A Retargeting-Oriented Target Classification	67
Essential Functions in the Targeting Process	70
Problems and Possible Solutions	70
Notes to Sec. V	76
VI. CHANGES AND PRIORITIES	77
Possible Changes in Systems and Procedures	77
Priorities for Implementation	80
GLOSSARY	83

Page 8 is blank.

~~SECRET~~

(U) INTRODUCTION

(U) BACKGROUND

(U) The strategic targeting-retargeting problem—the problem of assigning specific strategic nuclear weapons to specific targets and then changing those assignments when necessary—has over the years been relatively minor in comparison with other problems associated with strategic nuclear force employment planning.

(U) At the very beginning of the nuclear era at the end of World War II there were major problems with both target intelligence and weapon availability. The target location aspect of the target intelligence problem was essentially solved by the early 1950s with the U-2 aircraft and satellite reconnaissance programs. But target identification still remains troublesome today for targets without a distinguishing signature. The weapon scarcity problem ⁽¹⁾ was replaced by a planning coordination problem in the middle and late 1950s, when nuclear weapons became available in large numbers and were assigned to several commands. ⁽²⁾ The coordination problem in turn was solved in 1960 with the creation of the Joint Strategic Target Planning Staff (JSTPS), and assignment to JSTPS of responsibility for preparing and maintaining a Single Integrated Operational Plan (SIOP). ⁽³⁾

702 [REDACTED]

702 [REDACTED]

9
~~SECRET~~

~~SECRET~~

[REDACTED]

(U) An increasingly broad range of potential uses of strategic nuclear forces has a variety of implications. Targeting and retargeting capability requirements are among these.

(U) Targeting procedures for U.S. weapon systems vary from system to system. For example, missile trajectory calculations require accurate data regarding both launch point location and target location (as well as missile performance, of course). Since the launch points of U.S. submarine-launched ballistic missiles (SLBMs) cannot be predicted in advance, U.S. SLBMs are not targeted until a decision has been made to launch. The then-current SSBN location, the target location, and all appropriate missile performance data are loaded into the missile guidance system computer by the SSBN Fire Control System as part of the launch preparation process. That is, the SSBN Fire Control System is the critical element in SLBM targeting. All silo-based ICBMs, on the other hand, do have fixed launch points. All currently deployed U.S. ICBMs were designed to be pretargeted—i.e., to have all necessary launch point location data, target data, and missile performance data inserted in the missile guidance system computer—in peacetime long in advance of any decision to launch an attack. Each ICBM can store data for a small number of different targets, a number that varies from system to system. Since the number of targets that can be stored in an ICBM guidance system computer is limited, a growing number of possible targets increases the possibility that some missiles may have to be retargeted if the desired target is not one of those that was selected initially.

(U) Recent Rand research on strategic targeting led to the suggestion that a target planning scheme using *target building blocks*,

~~SECRET~~

UNCLASSIFIED

selected sets of related targets chosen according to well-defined criteria, could facilitate the development of additional selective strategic nuclear force employment options to add to the other options already available in the SIOP and the NSOs.⁽⁷⁾ The possibility of a still wider range of prepared force employment options then led to questions about the targeting and retargeting capabilities of present and programmed U.S. strategic forces. Those questions led to the present study.

(U) In addition to a variety of substantive distinctions to be introduced in the analysis that follows, two introductory definitional comments are appropriate. First, for reasons already alluded to, the words *targeting* and *retargeting* are viewed as essentially synonymous. The operation of central concern here is that of preparing a weapon system to attack a newly designated target, regardless of whether or not that particular weapon system was already prepared to attack a different target. Second, the word *retargeting* must be distinguished from the word *reprogramming* when ICBMs are involved. "Reprogramming is the process by which missiles are assigned to different missions by specifying one of the prestored execution plans. For reprogramming, the constants needed by the missile guidance system for the alternative missions and execution plans are already stored in the memories of the missile guidance computers.... Retargeting, on the other hand, is the process by which new target-dependent constants and/or execution plans are generated and loaded into the memories of the missile guidance computers."⁽⁸⁾

(U) PURPOSE AND SCOPE

(U) All U.S. strategic weapon systems obviously can be targeted when they are first deployed (or, as indicated above, targeted as part of the launch preparation process) in accordance with the dictates of the SIOP (or other plans). The SIOP is reviewed and revised periodically so all U.S. weapons systems are retargeted periodically as appropriate. SIOP revisions occur relatively infrequently and in peacetime, so the normal retargeting process is relatively leisurely (see Sec. II for a brief description of selected aspects of this process). The retargeting

UNCLASSIFIED

that might be required in preparation for an actual launch of part of the force in wartime might be time-urgent, however, and would occur within the context of a crisis or actual war. This real-time time-urgent retargeting is called dynamic retargeting.

(U) The purpose of this study was to analyze the dynamic retargeting capabilities and limitations of the U.S. strategic force and to identify possible improvements in systems and procedures.

(U) Although the possibility that the number of preplanned options for strategic force use might be greater than the number of alternative options that could be prestored in the operational force was the immediate motivation for this study, the study was designed to address a broader range of contexts. Specifically, the study was designed to address first of all the question of the possible range of situations where dynamic retargeting might be required or appropriate, and then to assess capabilities and limitations and possible improvements.

(U) OVERVIEW

(U) The remainder of this report consists of five sections. Section II reviews targeting and retargeting in the current U.S. strategic force. Section III introduces a broadened perspective of both the range of situations where retargeting might be required and the range of activities involved in retargeting. Section IV analyzes the retargeting implications of each of the alternative types of situations identified in the preceding section. Section V identifies some of the major retargeting problems identified during the course of the study and suggests some possible solutions for those problems. Section VI then summarizes the implications of these solutions for changes in U.S. targeting systems and procedures and suggests some priorities for implementing them.

UNCLASSIFIED

UNCLASSIFIED

NOTES TO SEC. I

(These Notes Are Unclassified)

1. Annual data on the magnitude and composition of the U.S. nuclear weapon stockpile can be found in *A History of the Nuclear Weapon Stockpile, FY1945-FY1972* (U), United States Atomic Energy Commission, WASH-1212 [REDACTED], a recurring report.
2. For a brief description of the atomic coordination procedures that existed before 1958—the year of the Defense Reorganization Act—and the effect of that act in transferring operational force control from the military departments to the JCS see John K. Moriarty, *The Evolution of U.S. Strategic Command and Control and Warning, Part II: 1954-1960* (U), Institute for Defense Analyses, Working Paper for the OSD Strategic Arms Competition Study, 14 May 1975 [REDACTED], pp. 46-53.
3. A brief description of the role of JSTPS in the targeting planning process is presented in Sec. III.
4. Message on the budget, FY1963.
5. John Ponturo, *The Evolution of U.S. Strategic Command and Control and Warning, Part III: 1961-1967* (U), Institute for Defense Analyses, Working Paper for the OSD Strategic Arms Competition Study, 10 June 1975 [REDACTED], p. 28.
6. "Should a President, in the event of a nuclear attack, be left with the single option of ordering the mass destruction of enemy civilians...." *United States Foreign Policy for the 1970s: A New Strategy*, 91st Congress, 2nd Session, House Document 91-258, Washington, D.C., 1970, p. 122, and "I must not be—and my successors must not be—limited to the indiscriminate mass destruction of enemy civilians as the sole possible response to challenges." *United States Foreign Policy for the 1970s: Building for Peace*, The White House, February 25, 1971, p. 131.
7. A summary of this research is available in Victor G. Jackson et al., *Strategic Targeting with Target Building Blocks* (U), The Rand Corporation, R-2765-DNA, April 1981 [REDACTED].
8. *Minuteman Attack Reprogramming Study* (U), TRW, Defense and Space Systems Group, TRW (TS)-32983-0003 (DNA 4861F), 28 February 1979 [REDACTED], p. 4-14.

UNCLASSIFIED

UNCLASSIFIED

(U) II. TARGETING AND RETARGETING TODAY

(U) The following material briefly summarizes those aspects of current targeting and retargeting capabilities and procedures appropriate as background for this study of dynamic retargeting. It is divided into three parts: first, a description of SIOP targeting planning; second, a description of targeting planning for selected NSOs; and, third, a description of reconstituted bomber force targeting planning.

(U) SIOP TARGETING PLANNING

(U) SIOP targeting planning will be discussed in two parts. The first of these is general background material on the planning process that leads to the SIOP. The second is selected details on each of the major weapon systems of interest.

(U) Preparing the SIOP⁽¹⁾

(U) The major features of the process in use today have remained essentially unchanged since the middle 1970s. The preparation of target planning guidance begins with a statement of national policy and objectives for the employment of military forces. The relevant statements were called National Security Decision Memoranda (NSDM) during the Nixon and Ford administrations and Presidential Directives (PD) during the Carter administration, and are now called National Security Decision Directives (NSDD). These presidential memoranda and directives are the most basic statements of U.S. security policy and objectives. They are then used in the Office of the Secretary of Defense to prepare a document titled *Policy Guidance for Employment of Nuclear Weapons* (NUWEP). The Joint Chiefs of Staff then prepare a Joint Strategic Capabilities Plan (JSCP); Annex C concerns nuclear forces. The cumulative contents of the presidential directives, the NUWEP, and the JSCP presumably provide all the guidance necessary for JSTPS to complete the second part of the process and make specific assignments of weapons to targets. Although the hierarchical sequence described above is at least nominally correct, the process is not quite so rigid in fact. JSTPS is kept

UNCLASSIFIED

~~SECRET~~

informed at all steps in the process with various opportunities for interaction along the way.

(U) JSTPS then has four different kinds of input material for its targeting activities: the targeting guidance described above, force commitments by the Commanders in Chief of the relevant nuclear force commands (the nuclear CINCs), target intelligence,⁽²⁾ and weapon system performance data. Several different kinds of JSTPS activities ensue. These include target development,⁽³⁾ aimpoint construction, weapon allocation, attrition analysis, and deconfliction (time-on-target control). The ultimate output of this process is the SIOP, a "single" plan that contains a number of options. JSTPS repeats this process periodically to insure that plans reflect current forces and their capabilities and current target intelligence. Revisions required because of guidance changes occur much less frequently.

(U) Once a satisfactory overall plan has been developed, the detailed plans for individual aircraft, ICBMs, and SSBNs are prepared and distributed. The next step is to target the operational forces themselves.

(U) Different procedures are used for targeting different components of the strategic force. Each of the major weapon systems will be discussed separately.

(U) Bomber Targeting⁽⁴⁾

(U)(S) The material prepared by JSTPS specially for bomber targeting is a mixture of several things. It includes flight plans for specific sorties, lists of Short-Range Attack Missile (SRAM) checkpoints, instructions for electronic countermeasure (ECM) operations, and target photo material. The bomber flight plans contain detailed instructions for each sortie beginning with the departure base and ending with the post-strike recovery base, with less specific data concerning return-home flight from the post-strike recovery base to the continental United States. The SRAM Checkpoint Master List contains all the checkpoint locations for updating navigation systems. The instructions for operating ECM specify the equipment-time-location factors for use of ECM. The target photo material includes simulated radar photos for

~~SECRET~~

~~SECRET~~

both targets and checkpoints. As an indication of the quantity of material involved, all this material for one wing of B-52 aircraft can be stored in a couple of standard filing cabinets.

(S)



(U) SRAMs are normally targeted in a two-step process. The master computer in the aircraft is targeted first, on the ground before takeoff. The SRAMs themselves are then targeted in flight during the final target run.

(U) The master computer in the aircraft is targeted by means of a special tape prepared from material provided by JSTPS. This tape normally is read into the SRAM system computer as part of the process of preparing the aircraft to go on alert after the SRAMs have been installed in their launchers.

(U) If normal procedures are followed and the aircraft master SRAM computer is loaded before takeoff, SRAM-related activities during bomber midcourse flight are limited to such activities as turning on

~~SECRET~~

~~SECRET~~

missile power, performing automatic test and status monitoring, and making position fixes and updating navigation data, as appropriate.

(S)

(S)

(S)

~~SECRET~~

~~SECRET~~

[REDACTED]

(U) SLBM Targeting (5)

(U) Procedures for targeting SLBMs differ significantly from those for targeting bombers and ICBMs. All missile guidance systems require several kinds of data for successful operation. These include launch point location and conditions, target data, and missile performance. All these data can be determined in peacetime for ICBMs. U.S. ICBMs have therefore been designed to be pretargeted in advance of a possible decision to launch the force. SLBMs are mobile, however, and since the time of a decision to launch cannot be predicted, the SLBM launch point cannot be known in advance. Since an essential part of the necessary missile trajectory data cannot be known in advance, SLBM guidance systems have been designed in such a way that none of the required trajectory data, which include the target data, are prestored in the missile in peacetime. All the required trajectory data are transferred from the SSBN Fire Control System to the Missile Guidance Computer as part of the launch preparation process after a decision to attack specified targets has been made. The SSBN Fire Control System is therefore the critical element of the SLBM targeting process. The details of this process differ for the Polaris, Poseidon, and Trident systems.

(U) As mentioned above, JSTPS requires four kinds of input data and information to prepare targeting material. Two are the same for all components of the force. These are the target planning guidance contained in such documents as presidential directives, the NUWEP, and the JSCP, and target intelligence. The factors unique to SLBMs are commitment by the commanders of the three SSBN operating commands in the Atlantic, Pacific, and Europe (CINCLANT, CINCPAC, and CINCEUR)

18
~~SECRET~~

~~SECRET~~

of a specific number of SSBNs, including designation of their planned operating areas and SLBM performance data.

(U) With these inputs, JSTPS then prepares a variety of targeting materials. Primary among these are the "target packages," the specific sets of targets to be assigned to individual SSBNs operating in a specific ocean area. For the MIRVed Poseidon and Trident systems, the targets are also "footprinted," i.e., the targets are grouped in such a way that the targets that will subsequently be assigned to one of the SLBMs are all within the delivery capability of a single missile. The material on targets prepared by JSTPS for the Polaris system is in the form of a computer printout, for the Poseidon system it is on "disk packs," and for Trident it is on cassettes.

(U) Since the Polaris system is of diminishing interest, as Polaris SSBNs have been withdrawn from service, it will be described relatively briefly. The Poseidon and Trident systems are sufficiently similar that they can be discussed together, with significant differences noted where appropriate.



~~SECRET~~

Pages 20 and 21
are deleted.

~~SECRET~~

center of that circle. He is thereby ready for immediate launch in the event of receipt of an Emergency Action Message (EAM). As the SSBN moves along its patrol path and approaches the area of overlap of two adjacent Base Cal circles, the Base Cals of the next circle are loaded into the second SSBN Fire Control System computer. A switchover from the first computer to the second computer is then made at the appropriate time, and the first computer is released for preparation to receive the Base Cals of the next circle.

(S)

(U) The Poseidon SLBM, in effect, is routinely retargeted today as successive sets of Base Cals--which may or may not incorporate a change of targets--are utilized. This retargeting can occur instantaneously because it is preplanned. Any unscheduled retargeting would involve a time delay.

(S)

~~SECRET~~

~~SECRET~~

(S) [REDACTED]

(U) The retargeting time delay is therefore negligible for the Trident if the targets are within range and are contained in one of the available cassettes.

(S) [REDACTED]

(S) [REDACTED]

(S) [REDACTED]

~~SECRET~~

~~SECRET~~

~~(S)~~ [REDACTED]

(U) ICBM Targeting (6)

~~(S)~~ [REDACTED]

~~SECRET~~

~~SECRET~~

(S) [REDACTED]

(S) [REDACTED]

(U) About 14 days before the scheduled SIOP switchover date, the new execution plans and the target constants generated by the LCC are transmitted to the missiles by radio or cable. The switchover from the now-old SIOP to the new SIOP is made at the designated time by having one LCC in each squadron send an appropriate message to all missiles in the squadron.

Page 26 is deleted.

~~SECRET~~

~~SECRET~~

(S)

(U) MX Targeting. The initial basing for the MX (Missile, Experimental) ICBM, according to early 1982 planning, will be in MM III silos and will incorporate existing MM procedures to the maximum extent possible. MX targeting procedures may therefore be reasonably well described by the discussion above. On the other hand, later MX deployments may use a different basing mode. Although the now-rejected Multiple Protective Shelter (MPS) basing mode presumably would not be reintroduced, a description of MX targeting as planned earlier for MPS basing is presented below.

(U) The MX system in the MPS basing mode consists of a number of transportable cannisterized missiles, multiple protective shelters, and one Operational Control Center (OCC) and one Alternative Operational Control Center (AOCC) for a wing of 200 missiles. The OCC and the AOCC are soft and not expected to survive blast damage in an attack. They have no wartime role. Consistent with the use of transportability and position secrecy to gain survivability for the MX, the MX system has no counterpart to the fixed-location LCC in the Minuteman system. Target selection and launch of the MX in wartime will be a responsibility of the ALCC.

(S)

~~SECRET~~

Page 28 is deleted.

~~SECRET~~

(S)

(U) SELECTED NON-SIOP TARGETING PLANNING (7)

(U) Two alternatives exist with respect to the selection of targets for NSOs. Either the targets to be attacked can be specified in advance of the NCA decision to execute the option, or they cannot. The consequences of this distinction differ for bombers and for ICBMs, which are the weapon systems of major interest for use in NSOs. Each will be discussed separately below.

(U) The preparation of a new NSO is a three-step process. The first is a decision by the NCA that is relayed to Headquarters Strategic Air Command (SAC) by the JCS. The second is the process of selecting delivery systems, weapons, and operational units by Headquarters SAC. The third is preparation of the strike sortie by the designated unit. Only the latter two of these will be discussed here.

(S)

~~SECRET~~

~~SECRET~~

[REDACTED]

(U) Bombers

(S) [REDACTED]

(S) [REDACTED]

(U) The heart of the targeting problem for bombers is preparation of the materials required by the aircrew to execute the mission. As mentioned above, for SIOP strike sorties these materials are called Combat Missions Folders. For NSOs, these materials are called Contingency Strike Folders. The contents of a Contingency Strike Folder are generally similar to the contents of a Combat Mission Folder, with some changes that provide for operational flexibility. For example, Contingency Strike Folders are normally constructed in two parts, a "route" part and a "strike" part, consistent with the Area Concept of responsibility. The route part between the home station and a low-level entry point and between the low-level exit point to a post-strike base can be preplanned. The "strike" part contains the information unique to the individual sortie, from the low-level entry point to the target and back to a low-level exit point, and can be preplanned only if the target can be specified in advance.

(S) [REDACTED]

~~SECRET~~

~~SECRET~~

[REDACTED]

(S)

[REDACTED]

(S)

(S)

(U) ICB

(S)

[REDACTED]

~~SECRET~~

~~SECRET~~

(U) RECONSTITUTED BOMBER TARGETING PLANNING⁽⁹⁾

(U) Individual or small numbers of bombers returning to the United States after execution of an NSO in peacetime or crisis should experience minimal difficulties because most if not all SAC and support units and facilities will be undamaged and fully functioning. The bomber recovery and reconstitution problem in wartime after a SIOP strike against the Soviet Union would be quite different and vastly more difficult, however. Current planning and capabilities for this latter situation are described here.

(S)



(S)

(S)

~~SECRET~~

Pages 33 and 34
are deleted.

~~SECRET~~

(U) NOTES TO SEC. II


(U) 1. Comprehensive descriptions of U.S. strategic force targeting procedures are rare. The material presented here is drawn from three sources: (1) Jerome F. O'Malley, Major General, USAF, "JSTPS, The Link Between Strategy and Execution," *Air University Review*, May-June 1977, pp. 38-46; (2) Mark D. Mariska, Capt., U.S. Army, "The Single Integrated Operational Plan," *Military Review*, March 1972, pp. 32-39; and (3) some recent congressional testimony: U.S. Congress, House Committee on Armed Services, *Department of Defense Authorization for Appropriations for Fiscal Year 1980, Title II-Research, Development, Test, and Evaluation*, Vol. 3, Bk. 1 of 2, Hearings, 96th Congress, 1st Session on H.R. 1972 (H.R. 4040), H.A.S.C. 96-5, Washington, D.C., 1979, pp. 6-32.

(U) 2. The Defense Intelligence Agency has primary responsibility for providing target intelligence. It maintains the Automated Intelligence File (AIF), a vast collection of intelligence data of varying completeness, and the Target Data Inventory (TDI), a listing of all installations sufficiently defined to be candidates for attack.

(S) 3. 

(U) 4. This material on bomber targeting was obtained primarily during discussions with a number of USAF officers with current and recent Strategic Air Command assignments

(U) 5. This material on SLBM targeting was obtained primarily during discussions with personnel in the U.S. Navy Strategic Systems Project Office.

(U) 6. This material on ICBM targeting was obtained primarily during discussions with personnel of the USAF Ballistic Missile Office and the 1st Strategic Aerospace Division. In addition, *Minuteman Attack Reprogramming Study* (U), TRW, Defense and Space Systems Group, TRW(TS)-32983-0003, DNA 4861F, 28 February 1979  is a good source of data on selected targeting aspects of the Minuteman system.

~~SECRET~~

~~SECRET~~

(U) 7. This material is drawn primarily from *Nuclear Option Planning* (U), Headquarters Strategic Air Command, Strategic Air Command Regulation-Operations, SACR 55-7, Volume IX, 7 January 1976 [REDACTED]

(S) 8 [REDACTED]

(U) 9. This material is drawn primarily from *Post Attack Command and Control System (PACCS)* (U), Headquarters Strategic Air Command, Strategic Air Command Regulation-Operations, SACR 55-14, Volume I, 30 June 1980 [REDACTED] and *SAC Aircraft Recovery and Reconstitution* (U), Headquarters Strategic Air Command, Strategic Air Command Regulation-Operations, SACR 55-16, Volume I, 30 June 1980 [REDACTED]

~~SECRET~~

UNCLASSIFIED

(U) III. A BROADENED VIEW OF RETARGETING

(U) The process of targeting is customarily understood as preparing a specific weapon system—a bomber or missile—to attack one or more specific enemy installations or activities, so the process of retargeting is the process of changing from one such assignment to a new one. U.S. strategic forces are targeted in peacetime in accordance with the SIOP, so U.S. strategic forces are retargeted, again in peacetime, whenever required by changing conditions or by a change in the SIOP. This study takes a broader view of retargeting in two respects: First, situations other than peacetime retargeting in accordance with the SIOP are considered; and, second, activities essential to the retargeting process in addition to preparing a specific weapon to attack a designated target are considered.

(U) RETARGETING SITUATIONS

(U) It is easy to understand why dynamic or time-urgent retargeting for U.S. strategic forces has received little attention to date. The retargeting of U.S. strategic forces that might be required, as those forces are conceived and operated today, is not time-urgent.

(U) As described above, JSTPS combines four basic kinds of data in the preparation of the SIOP: policy guidance, intelligence material, quantities of forces, and weapon system characteristics and capabilities. Intelligence materials are of several kinds. These include target intelligence, Orders of Battle (e.g., fighter-interceptor deployments), and technical intelligence (e.g., surface-to-air missile performance). The resulting SIOP is then used as the basis for assigning a specific missile or a specific aircrew and bomber to be prepared to attack a specific set of targets.

(U) There are six kinds of changes in the factors entering the targeting process that can potentially require a change in the assignment of a specific aircrew and bomber to a specific set of targets, i.e., potentially require retargeting. These are: changes in policy guidance, changes in target intelligence, changes in force quantities,

UNCLASSIFIED

~~SECRET~~

changes in force capabilities, changes in the defenses to be encountered, and changes in the availability of the personnel and equipment of operational units. Only two of these tend to be at all relevant in the context of dynamic retargeting, however.

(S)



(U) Most targets judged suitable for attack by strategic forces, at least since the creation of the Strategic Air Command, tend to be military facilities or large industrial or economic installations. These are fixed targets. The possibility of using strategic forces to attack mobile battlefield-related targets has received intermittent attention over the years beginning in 1950 with the assignment to SAC of the ROMEO or retardation mission, but a variety of problems have essentially precluded serious implementation of the concept by SAC forces. The number of major military facilities and large industrial or economic installations changes slowly. A major new airfield or

~~SECRET~~

~~SECRET~~

equipment factory does not emerge frequently or overnight. Lists of such candidate targets remain valid for years.

(U) The U.S. strategic force has changed significantly over the years, most recently with the phase-out of the Polaris SLBM, and the phase-in of the Trident, with its MIRVed payload. Such changes as these are programmed long in advance, however, so the necessary targeting changes can be accommodated quite easily in the scheduled SIOP revisions.

(S)



(U) Finally, scheduled or unscheduled bomber crew unavailability or missile and bomber equipment failures could require retargeting to insure desired coverage of the highest priority targets. Except in the case of a catastrophic failure, however, such as the Titan II explosion in Arkansas in late 1980, crew rescheduling and normal maintenance would be expected to restore the force to its full capability level relatively promptly.

(U) In summary, the targeting and retargeting that occurs today tends to be non-time-urgent. It is the possibility of a specific

~~SECRET~~

UNCLASSIFIED

future requirement for retargeting that might be time-urgent, or dynamic, that led to this study. This requirement could derive first of all from the creation of a significant number of additional options for selective strategic force employment. These additional selective strategic force employment options would not cancel the appropriateness of any of the present options, however. They might in some cases be, or be required to be, components of existing strike options so that execution of the selective option would simply constitute partial execution of one of the SIOP options. No additional retargeting requirement would arise if selective force employment options had this "nesting" characteristic. In other cases, however, the selective option might involve some SIOP targets selectively or might even be directed against non-SIOP targets exclusively. In these cases, execution of the selective force employment option would not constitute partial execution of the SIOP, and a force pretargeted for one contingency would not necessarily be appropriately targeted for the other. However, the force was targeted initially, a dynamic retargeting requirement could arise.

(U) In addition, however, there are other possible sources of a time-urgent retargeting requirement. For example, a recent Rand study of U.S. Strategic Reserve Forces, which include but are not limited to the U.S. Secure Reserve Force, concluded that mission planning for reserve forces could not be separated from planning for war fighting and that the essential unpredictability of many aspects of strategic war leads inescapably to a requirement for, among other things, in-war war retargeting that may be time-urgent. (2)

(U) For the purposes of this study, therefore, we chose to analyze a relatively comprehensive range of possible situations where dynamic retargeting might be required. This analysis included both peacetime and wartime situations, and it included in the wartime category both wars that involved major nuclear attacks on the homelands of the United States and the Soviet Union and wars that did not.

(U) Accordingly, six different categories of situations were identified where some degree of dynamic retargeting might be required. Two of these were peacetime and four were wartime. The first peacetime category includes the retargeting situation today. The remaining five,

UNCLASSIFIED

UNCLASSIFIED

therefore, represent the extensions introduced by this study. For subsequent reference in the analysis in the next section, the six categories are named as follows. The category containing the current retargeting situation is called *normal peacetime operations*. The other peacetime category is called *crisis operations*. The two non-general war situations are called *theater war* and *Soviet limited nuclear operations*. The two categories of general war situations are called *pre-planned strategic operations* and *follow-on strategic operations*. This particular classification scheme, although somewhat arbitrary, of course, can be used to structure an analysis that will cover the full range of important situations.

(U) RETARGETING ACTIVITIES

(U) The second dimension of this study that is broader than the usual view is the range of activities considered to be part of the retargeting process. The usual view of the targeting-retargeting problem includes only those activities that begin after a specific target or set of targets has been selected as appropriate for attack, after a choice has been made as to whether the attack should be by bomber, ICBM, or SLBM, and after the targets have been "footprinted" if a MIRVed missile was chosen, or they have been combined into a specific bomber sortie. The process then ends when the missiles are ready to be launched or the bomber ready to sortie. In the approach of this study, however, the preparation of specific ICBMs, SSBN Fire Control Systems, and bombers and their crews is only the final step in a longer process.

(U) In this larger view the retargeting process begins with a "trigger event" that initiates the actions that will culminate in retargeting the weapon system itself. In fact, even the flow of information that identifies the trigger event must be considered to gain a comprehensive view of the retargeting problem.

(U) The several activities between the trigger event and a new condition of launch readiness differ significantly in kind and can be divided into three groups. The first group of activities consists essentially of option review, generation, evaluation, and selection. It begins with the trigger event and ends with an event called here

UNCLASSIFIED

the *NCA decision*. The agencies primarily involved are the NCA, the JCS, and the nuclear CINCs and their staffs. This decisionmaking function is clearly an essential part of a comprehensive analysis of retargeting because it initiates and guides all the subsequent activities.

(U) The second group of activities consists essentially of the preparation and distribution of operations orders. It begins with the *NCA decision* and ends with *operations orders distributed*. The agencies primarily involved in this step are specialized targeting agencies such as JSTPS and intermediate military headquarters between the NCA and the operational units. This order preparation and distribution function is clearly essential because it provides the necessary link between the highest level of decisionmaking and the ultimate operational level.

(U) The third group of activities in this process consists of all those activities usually associated with retargeting--the preparations of the personnel and the equipment within the operational units to execute the ordered attacks. This period begins with the *operations order distributed* and ends with a state of *launch readiness*. The agencies involved here are the operational units themselves or, in the event of unmanned or remotely manned units, the remote launch control authorities.

(U) The nature of the information flow that precedes the trigger event and supports the decisionmaking process is important because it can change from whatever is normal in peacetime upward to an enhanced status in time of crisis, when attention is focused and higher alertness is achieved, and downward to a reduced or degraded status when information and reconnaissance systems have been brought under attack in wartime.

(U) The analysis of dynamic retargeting contained in the next section of this report will use the distinctions established above, the six alternative types of situations where dynamic retargeting might be required or desired, and the three major kinds of activities--plus the flow of information--that constitute the retargeting process broadly defined.

UNCLASSIFIED

UNCLASSIFIED

NOTES TO SEC. III

(These Notes Are Unclassified)

1. For example, see Secretary of Defense Harold Brown's speech at the Naval War College on August 20, 1980, as reported in *Survival* November/December 1980, pp. 267-269.

2. Victor G. Jackson, *Strategic Reserve Forces: Missions and Mission Implications* (U), The Rand Corporation, R-2686-NAVY, January 1981 [REDACTED]

UNCLASSIFIED

UNCLASSIFIED

(U) IV. RETARGETING SITUATION ANALYSIS

(U) The six different categories of situations identified above where dynamic retargeting might be required are: *normal peacetime operations, crisis operations, theater war, Soviet limited nuclear options, preplanned strategic operations, and follow-on strategic operations*. Each of these will be analyzed in sequence. The analysis will cover the spectrum of activities beginning with the flow of information that leads to the *trigger event* to the *NCA decision* to the *preparation and distribution of operations orders to launch readiness*.

(U) The chart below illustrates the richness of this broadened retargeting problem and may aid in following the analysis. Each of the six different categories of situations where retargeting might be required will be discussed in sequence. The discussion for each category will cover all the activities from information gathering to launch readiness before the next category is addressed.

Retargeting Situation Categories		Activities and Events			
		Trigger Event	NCA Decision	Operations Orders Distributed	Launch Readiness
		Information and Intelligence Gathering	Option Generation, Evaluation, and Selection	Preparation and Distribution of Operations Orders	Crew and Unit Equipment Preparation
Peacetime Situations	Normal Peacetime Operations				
	Crisis Operations				
Non-General War Situations	Theater War				
	Soviet LNOs				
General War Situations	Preplanned Strategic Operations				
	Follow-On Strategic Operations				

UNCLASSIFIED

(U) Dynamic retargeting in a broadened context

~~SECRET~~

(U) NORMAL PEACETIME OPERATIONS

(U) For the purpose of this analysis, the output of the normal peacetime reconnaissance and information gathering processes of interest can be of three types: information that establishes the existence of a crisis which, for a serious crisis, becomes strategic warning;⁽¹⁾ information that leads to tactical warning;⁽²⁾ or information leading to the conclusion that the current targeting for immediate employment of U.S. strategic nuclear forces may be inappropriate for the situation at hand. Information leading to identification of a crisis or establishing strategic or tactical warning will be considered below. The information of interest here is that which suggests that current targeting is inappropriate in some aspect.

(S)



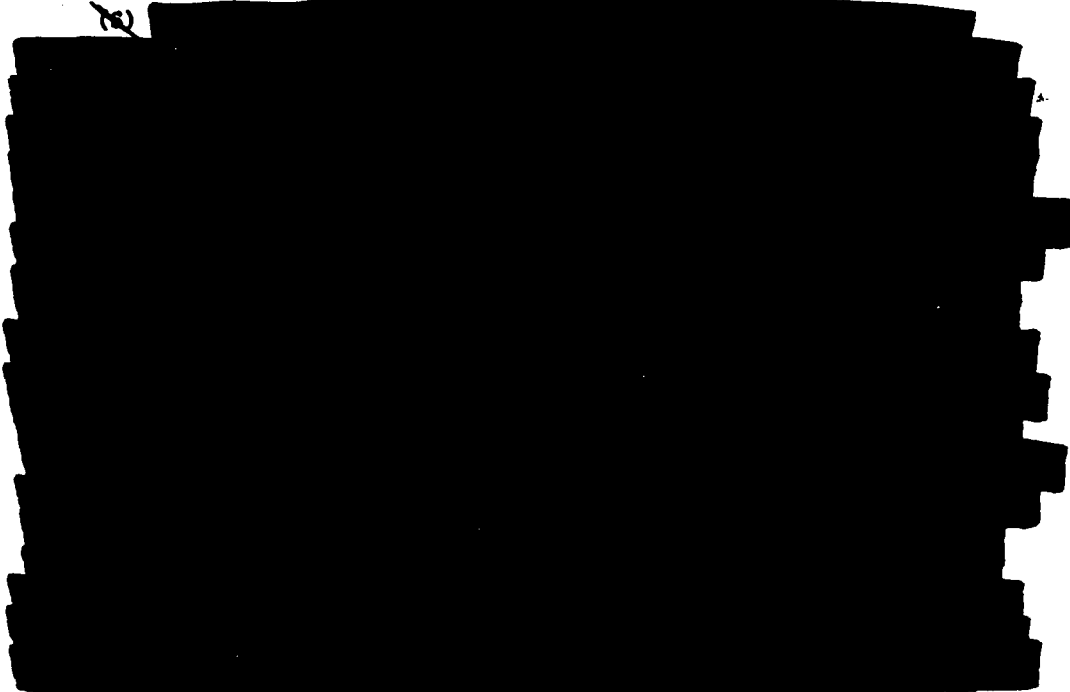
(U) The analysis outlined in Sec. III applies in this situation. The kinds of changes in the factors that shape the SIOP are: changes in policy guidance, changes in target intelligence, changes in force quantities, changes in force capabilities, changes in the availability of the personnel and equipment of operational units, and changes in the defenses to be encountered. Only the last two of these tend to be relevant in the context of dynamic retargeting and only the last one, changes in defenses, is significantly so.

(U) Changes in the factors that lead to changes in targeting policy guidance seldom if ever emerge precipitously. They emerge slowly and allow ample opportunity to make the necessary changes during one of the regularly scheduled SIOP revisions.

~~SECRET~~

~~SECRET~~

(U) Three alternatives exist regarding new targets: routine construction and recognition, sudden recognition of previously unknown or unrecognized targets, and "breakout" creation of many new targets. Concerning routine target construction and recognition, it can be expected that routine Soviet peacetime activities in developing and deploying military forces and constructing economic and industrial facilities will routinely present a slowly changing target data base. Some of this activity will be routinely detected and monitored by U.S. reconnaissance and surveillance systems. Similarly, U.S. intelligence processes may routinely add small numbers of known but previously unidentified targets to the lists of established targets in the data base. Since most such targets are likely to be one or a few more of an established class, such as specific kinds of military or industrial installations, and minor at that, there is little urgency to add them to the target list.

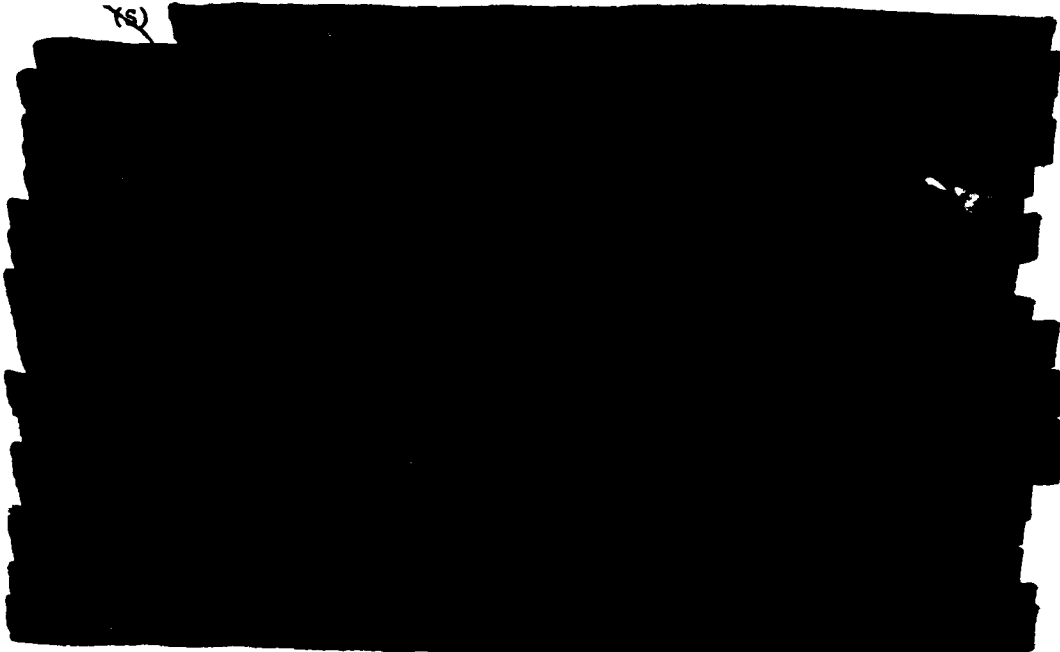


(U) Similarly, it is unlikely that the deployment of new weapon systems, such as the Trident SLBM or the air-launched cruise missile, or the retirement of old systems, such as the Polaris, will generate a requirement for dynamic retargeting. The production, deployment,

~~SECRET~~

~~SECRET~~

and transition to operational status of new weapon systems and the phase out of old systems is a carefully scheduled process that can be well anticipated in the periodic SIOP updates. A delay in the phase-down of an old system, such as the stretch-out in the B-47 retirement program that occurred during the Berlin Crisis in 1961, is not likely unless there is in fact a crisis (again, see below).



(U) The major source of a requirement for dynamic retargeting in normal peacetime conditions probably is a change in the air defense environment that degrades to an unacceptable degree the probability of success of one or more bomber sorties. If only a single target were thereby affected, the problem could probably be ignored, but the effect might extend to all the targets of that particular sortie, as well as to other bombers if their sorties were planned to provide mutual support. In addition, any increase in bomber attrition reduces the probability that the bomber can be recovered for reuse.

(U) The remedial action appropriate for an unexpected improvement in Soviet air defense is not limited to retargeting. Flight plans can be redrawn or electronic countermeasures can be utilized. If retargeting were to be chosen as the preferred response, however, the conditions

~~SECRET~~

UNCLASSIFIED

for doing so would be ideal. All normal information, reconnaissance, and surveillance capabilities would be operating without impairment and additional resources could be tasked as desired, new policy guidance presumably would not be required, involvement of the NCA would not be required, intermediate agencies and headquarters would have full normal capabilities and presumably would be as available as could be expected at any time, and all capabilities at the operational unit would be intact.

(U) Although all the facilities and capabilities required to accomplish whatever retargeting might be appropriate in this situation would be available,⁽⁴⁾ choosing the preferred course of action would still not necessarily be a trivial matter. Several bomber and missile sorties might be closely related regarding defense suppression, mutual support, and deconfliction timing. Changes to any one sortie might have cascading implications for several others. A decision as to whether or not to do any retargeting in response to an observed change in defenses could be reached after a comparison of costs and benefits of different amounts of retargeting.

(U) CRISIS OPERATIONS

(U) This category of situations where dynamic retargeting might be required can be divided into two parts reflecting two different kinds of situations that have come to be called crises. The first of these is more or less out-of-the-blue isolated events, such as the capture of the U.S. intelligence ship Pueblo by North Korean patrol vessels in the Sea of Japan on January 23, 1968; the seizure of the container-ship Mayaguez by the new Revolutionary Government of Cambodia in the Gulf of Siam on May 12, 1975; and the Israeli attack on the U.S. electronic-reconnaissance ship Liberty on June 8, 1969, during the Six-Day War. Such crises seldom if ever lead to war or even serious threat of war although they may result in military action, such as the strikes by aircraft of the USS Coral Sea against Cambodia in the Mayaguez incident. The second category of crisis does offer a serious threat of war. Examples here would be the Berlin Blockade in 1948-1949, the Berlin Crises of 1958-1959 and 1961, and the Cuban Missile Crisis of

UNCLASSIFIED

UNCLASSIFIED

1962. None of either of these two types of crises did lead to war, however. Normal peacetime conditions prevailed within weeks of the end of each crisis. Two other crises of interest did lead to war: the North Korean invasion of South Korea on June 25, 1950, and attacks on U.S. destroyers C. Turner Joy and Maddox by North Vietnamese torpedo boats on August 2 and 4, 1964. U.S. strategic bombers participated in both these wars (see below).

(U) The *crisis operations* category of situations differs from the *normal peacetime operations* category in several significant respects. The first important difference between the two is in the flow in information and surveillance and reconnaissance data. Under normal peacetime conditions, the detection of a new target or any change in warning indicators may trigger either a survey of other indicators or an expansion of surveillance and reconnaissance to see if the detected change was an isolated event or part of a pattern. If the detected change proved to be an isolated event, then the information and intelligence activities would quickly revert to normal. If the detected change proved to be part of a pattern or the first of a sequence of signals that established the existence of a crisis or that constituted strategic warning, then, by hindsight, the first detection would be called the trigger event and a number of drastic changes of several kinds would follow.

(U) The first change would be a sharply increased flow of information and intelligence as a consequence of new reporting demands and new tasking. More frequent and more detailed reporting of information on U.S. forces and force status would probably be required by both the NCA crisis management team (see below) and the operational force commanders preparing for force planning and possible force use. An increased flow of information from some kinds of operational units presumably would not diminish the normal flow of information from others. On the other hand, there may be little opportunity to expand significantly the flow of reconnaissance and surveillance data if current intelligence gathering assets are fully utilized. Some technical intelligence sensors such as radars could be redirected to a warning role, thereby increasing the flow of operational intelligence,

UNCLASSIFIED

UNCLASSIFIED

and other sensors could be redirected in other ways. The flow of intelligence from the affected area would surely increase, however, and it would receive more than normal attention at high levels of command.

(U) An exception to this general expectation of a constant or increased flow of information and intelligence would be the case in which attacks on one or more of the reconnaissance and surveillance sensors either precipitated the crisis or accompanied it. An attack on such intelligence gathering sensors in the absence of any other aspect of crisis seems unlikely, however.

(U) The second major difference between the normal peacetime case and crisis case would be a massive increase in the participation of the NCA. In the normal peacetime case the NCA would probably never even learn of the occasional identification of new targets, or of a minor change in the status of either U.S. forces or Soviet defenses of the kinds that might require retargeting. In the event of a crisis comparable to those listed above, however, the NCA probably would demand at least daily status reports in addition to an intensive review of pre-planned options, the reevaluation of those options in the light of then-existing conditions, and the generation and evaluation of new options. The agencies primarily involved in this options review, generation, and evaluation process would be the NCA and upper-echelon military agencies--the JCS, the nuclear CINCs, and the Commanders of the Rapid Deployment Joint Task Force (RDJTF) and the Strategic Projection Force and their staffs, etc. Some operational units might become involved if they were queried regarding option possibilities or given advance notice to prepare for possible future commitment.

(U) The third major difference between the normal peacetime case and the crisis case would be the increased likelihood of a significant number of new targets. An increased emphasis on intelligence gathering in specified areas could be expected to identify new targets of either or both of two kinds: first, targets that had existed all along but that had remained undetected or unidentified by routine intelligence operations; and, second, the changes in the target data base that would result because of the opponent's actions in the unfolding crisis.

UNCLASSIFIED

UNCLASSIFIED

(U) Finally, a fourth major difference between the normal peacetime case and the crisis case would be an increase in the time-urgency of the retargeting. In the normal peacetime case, where a launch execution order would be very unlikely, it matters little when or even if the appropriate retargeting might occur. In a rapidly escalating crisis, however, a launch order might be received with little advance notice and the target might be fleeting. Launch against the specified targets within a designated time interval may be required for either narrowly military or more broadly political reasons.

(U) The amount of retargeting needed in the crisis case would be highly variable, of course, and would depend upon the nature of the crisis, but it would almost certainly be larger than the amount required in the normal peacetime case. Retargeting would include both the preparation and distribution of operations orders and the subsequent preparation of the crews and equipment, all after the NCA reached a decision. The time required to prepare and distribute plans and operations orders wherever retargeting might be required presumably would be proportional to the total retargeting burden and the size of the force involved. Retargeting activities within individual operational units, on the other hand, could proceed in parallel independently of each other.

(U) Retargeting in the peacetime crisis situation would be similar to retargeting in the normal peacetime situation in that most if not all the constituent agencies and activities⁽⁵⁾ would be undamaged and functioning without impairment.

(U) THEATER WAR

(U) The theater war category of situations where time-urgent retargeting problems may arise can be divided in two parts reflecting the base location of the strategic forces involved. In some cases, part or all of a self-contained force of aircraft such as the CINCSAC Strategic Projection Force (SPF) may be deployed forward to bases within unrefueled range of the target area. The targeting and retargeting of the SPF would be directed by the operations planners in a forward command post, using information provided by an Intelligence Fusion Center in the area.⁽⁶⁾ In other cases, U.S. strategic forces would

~~SECRET~~

not be deployed away from their peacetime bases or normal operating areas. They would simply be tasked to execute one or more of the Non-SIOP Options (or, possibly, one of the selective force employment options currently receiving considerable attention).⁽⁷⁾ This tasking could arise as a means of providing additional support for the SPF, the Rapid Deployment Joint Task Force (RDJTF) if previously deployed, or to some other overseas organization such as NATO, or possibly even to an area devoid of any prior U.S. force commitment.

(S)



(U) The implications of a theater war for the other parts of the retargeting process--option review, generation, and evaluation; the preparation and distribution of operations orders; and crew and equipment preparation--would differ significantly depending upon whether the U.S. strategic forces involved were forward-based Strategic Projection Forces or just part of the general strategic force.

(U) The problem of generating or modifying options for strategic force employment in real time in a theater war probably will be significant because the number of options that can be adequately preplanned may be small. The ones that could be preplanned and executed without significant change probably anticipate a stylized scenario for nuclear war in a theater of major importance, such as a NATO-Warsaw Pact war in central Europe. It can be expected in any event that the

~~SECRET~~

~~SECRET~~

NCA will be actively involved in reviewing preplanned options and, in all likelihood, requesting the generation and evaluation of others.

(U) The United States has used strategic bombers in two theater wars since World War II. During the Korean War, four groups of SAC B-29 bombers were deployed from the United States to Okinawa and attached to the Far East Air Forces (FEAF) component of General MacArthur's Far East Command, to join other B-29s already assigned to FEAF in attacks on North Korea. NCA and JCS participation in target selection and operational planning was minimal beyond specifying, first, that the two SAC B-29 groups deployed in August 1950 could attack only industrial targets in North Korea and, second, denying a FEAF recommendation to use area bombing tactics and incendiary munitions.⁽⁹⁾ A quite different situation existed during the Vietnam War. Bomber aircraft were again deployed forward--this time they were B-52s operating from Thailand and Guam--but now the NCA was involved heavily in such detailed matters as target selection.⁽¹⁰⁾ Most planning for the SPF envisages operations with conventional high-explosive weapons. The precedent set in the Vietnam War of heavy NCA participation in strike planning may or may not be followed for the SPF. However, it seems reasonable to expect that the NCA would be heavily involved in the process of option review, generation, and evaluation in any future theater war that involved nuclear weapons. The NCA, JCS, and the nuclear CINCs presumably would be operating without the threat of or impairment of attack on themselves, however.

(S)

~~SECRET~~

~~SECRET~~

[REDACTED]

(U) For ICBMs, bombers not specifically assigned to or attached to the SPF or an overseas command and operating from their home bases, and SLBMs in their normal operating areas, the preparation and distribution of operations orders would be accomplished by JSTPS or other intermediate headquarters. In any case, the facilities and capabilities of JSTPS and intermediate headquarters in the United States⁽¹²⁾ would remain unattacked and fully functional, thereby able to perform such ancillary tasks as footprinting MIRVed missile payloads and deconflicting multiple sorties into the target area. Attacks on the overseas SPF bases, presumably with high explosives, could, of course, destroy either the bomber aircraft themselves or their planning and targeting capabilities or both.⁽¹³⁾

(U) SOVIET LIMITED NUCLEAR OPTIONS

(U) The meaning of the word *limited* in the expression *limited nuclear options* (LNO) is more ambiguous than the meaning of the word *nuclear*, which is clear. First, *limited*, in this context, means fewer in number than would be appropriate if general war as normally understood were at hand. Second, *limited*, in this context, means that the purpose of the attack is not solely or even primarily military. The attack may be effective militarily with respect to its specific target, but the primary purpose of the attack may be generally political or psychological. For the purposes of this brief analysis, Soviet LNOs are considered to be any use of a small number of nuclear weapons that either leads to a U.S. retargeting requirement or affects U.S. retargeting capabilities.⁽¹⁴⁾

~~SECRET~~

UNCLASSIFIED

The targets of the Soviet attack are unspecified. They could be military, non-military, or even an empty point in space. If military, they could be one or more of the components of U.S. forces that play a role in targeting and retargeting.

(U) A Soviet LNO of the first type--one that leaves U.S. retargeting capabilities unaffected but leads to a retargeting requirement--is essentially a variant of the peacetime crisis category of situations discussed above. It differs from the crisis category only in that forces are being used. All U.S. information and intelligence gathering activities would be fully functional and could be tasked or concentrated as desired. The NCA would undoubtedly be intimately involved in the process of option review, generation, and evaluation. Since the purpose of LNOs may include but is never limited to military effectiveness, and their targets depend upon the circumstances of the moment, the potential for preplanning them is limited. All aspects of the process of preparing and distributing plans and operations orders may have to be done in real time. Finally, since it is unlikely that the targets selected for attack in the U.S. response would be those for which the U.S. force was pretargeted in peacetime, all the preparation of crews and equipment would have to take place after the Soviet attack. The U.S. response presumably would be small, however, so the total retargeting problem would be small. Since, by definition, the Soviet LNO of concern here did not affect U.S. retargeting activities--the review, generation, and evaluation of options; the preparation and distribution of operations orders; and the preparation of crews and equipment--could take place without degradation or impairment.

(U) The second type of Soviet LNO defined here is one that does in some way reduce U.S. retargeting capabilities. It is doubtful that U.S. retargeting capabilities would be the direct or sole object of the Soviet attack, however. Rather, a reduction in U.S. retargeting capabilities might be a by-product or bonus for the Soviet Union achieved as a consequence of an attack with a more basic objective.

(U) For example, suppose that the Soviets believed, in the middle of a crisis, that the probability of war was high but not sufficiently high to justify preemption, thereby making war certain. Suppose also

UNCLASSIFIED

that the Soviets believed that U.S. space-based reconnaissance and surveillance assets would be so important in U.S. wartime operations that the United States could not fight effectively without them. The Soviets might choose to attack such space-based systems to try to induce the United States to avoid steps that would lead to war or, if the war were inevitable, to degrade U.S. capabilities to wage it effectively. The loss of the information from destruction of U.S. space-based reconnaissance and surveillance would hamper U.S. retargeting as a by-product of a larger goal. Similarly, Soviet LNO attacks on JSTPS or other selected intermediate headquarters would hamper the processes of the review, generation, and evaluation of options and the preparation and distribution of operations orders as a by-product of more comprehensive reasons for attacking U.S. command capabilities.

(U) U.S. forces themselves presumably would not be directly attacked in Soviet LNOs except in small numbers or as a gesture, or unless small numbers of special purpose forces were selected for special purpose attack as suggested above. U.S. capabilities to prepare crews and equipment for attack on newly assigned targets would be unimpaired throughout most of the force.

(U) The seriousness of the loss of selected components of U.S. activities involved in retargeting is difficult to evaluate in general terms, but the consequences for retargeting capabilities of the kind of LNOs discussed here presumably are relatively minor. By definition the Soviet attacks of concern are relatively small, U.S. strategic forces are varied and have a variety of inherent capabilities to adapt and improvise, and the United States is not limited to only a time-urgent response. Whatever the context that led the Soviets to limit their action to an LNO in the beginning, the extensive inherent capabilities of all aspects of U.S. targeting and retargeting activities⁽¹⁵⁾ will almost certainly permit an adaptive U.S. response.

(U) PREPLANNED STRATEGIC OPERATIONS

(U) Two different kinds of preplanned strategic combat operations have been established. The first and best known of these is execution of one or more options in the SIOP. The second is execution of one or more Non-SIOP Options. A third type of possible

UNCLASSIFIED

~~SECRET~~

preplanned combat operation where strategic forces might be used has also begun to receive attention, however. This third type has not yet been formally established nor has it received a generally accepted name but here will be called Selective Force Employment Options (or Selective FEOs). Selective FEOs would be another kind of NSO. They would be designed to provide an option for the use of strategic forces to achieve a specific objective in a situation where no other options--and, in particular, none of the SIOP options--would be judged appropriate. Selective FEOs would be similar to NSOs in that the targets of interest would tend to be Soviet targets and the number of weapons in the attack would be much smaller than in any of the SIOP options. Selective FEOs would differ from NSOs in that some NSOs may be primarily demonstrative, whereas selective FEOs are designed for a deliberate effect, to destroy specific enemy capabilities and thereby achieve a desired objective. Selective FEOs may be similar to RNOs in that the targets selected may be regional, but they are different in that they need not be. The primary purpose of a selective force employment option is the destruction of specific military, or perhaps economic or industrial, capabilities. (16)

(U) The bulk of the U.S. strategic force presumably is targeted in peacetime according to the SIOP. Retargeting, therefore, is not required before implementing one of the SIOP options. The range of options specified by the SIOP is achieved in practice by assigning different targets to different weapon systems and then launching the force selectively using one of the large number of separate execution plans.

(S)



~~SECRET~~

UNCLASSIFIED

(U) Retargeting in this situation would not require any new information about the targets themselves, only the information that the previously planned attack was not executed and that an alternative delivery vehicle was available.

(U) Similarly, by definition, no new options would have to be generated as long as the objective was simply to insure the execution of the preplanned option (see below for discussion of the situation in which unforeseen wartime conditions might lead to mid-war recognition that a change of plans was appropriate). In fact, the NCA presumably would never even know any of the details of this SIOP-following process.

(U) Whether or not new operations orders would have to be prepared and distributed would depend upon the relationship between the organizational unit that was unable to execute its assigned mission and the organizational unit supplying the replacement delivery vehicle. If a failed SLBM were to be replaced with another from the same SSBN, or a failed bomber replaced by another from the same wing, then minimal new planning would be required. If new bomber sorties had to be prepared from uncovered targets previously included in several different sorties and then assigned to a bomber in a unit not involved in the original plans, then the full process of preparing and distributing a new operations order would be required.

(U) A somewhat different situation would exist with respect to execution of preplanned NSOs and selective FEOs. The SIOP is not only preplanned in peacetime, the appropriate parts are also distributed in peacetime to the forces involved. The NSOs and selective FEOs of concern here would also, by definition, be prepared in peacetime, but they would not necessarily be distributed to operational units in advance of the decision to execute the attack. Advance distribution of as much of this material as possible would minimize both communications burdens and time delays at the time employment was desired, but whether or not these factors would be important would depend upon the details of the situation and the nature of the option.

(U) If operations orders are not prepared and distributed in advance or, if distributed in advance the forces are targeted for the

UNCLASSIFIED

UNCLASSIFIED

SIOP and not for these Non-SIOP Options, then the crews and equipment would have to be readied after receipt of the appropriate orders. Since the number of targets included in these options would tend to be small, single-RV missiles such as the Minuteman II ICBM would be preferred over MIRVed missiles, particularly if the targets were dispersed. Since targeting and retargeting the Minuteman II is a relatively cumbersome process requiring physical entry into the silo, Minuteman II ICBMs earmarked for possible NSO use could have one or more of the target slots assigned to these options and therefore immediately available by remote reprogramming (i.e., selecting from among multiple prestored targets).

(U) FOLLOW-ON STRATEGIC OPERATIONS

(U) A comprehensive analysis of intrawar retargeting—i.e., retargeting surviving withheld and reconstituted forces after execution or preplanned strikes—begins with the handicap of vast uncertainty regarding the details of the operational context in which the retargeting problem might arise. Unfortunately for our purposes, there is no generally accepted body of knowledge and understanding in the United States about the conduct and termination of strategic war after a canonical SIOP-RISOP (Red Integrated Strategic Offensive Plan) exchange. The time and effort spent in the United States in the last two or three decades on the conduct of strategic operations after an initial preplanned strike is an infinitesimal fraction of the time and effort spent on the problems of developing, procuring, and deploying forces in peacetime and then ensuring the generation, transmission, and receipt of the Emergency Action Message that will trigger the initial U.S. attack. Accordingly, there is no generally accepted body of knowledge and understanding of this intrawar context. It is obvious that the final step in the retargeting process—the action required to prepare a specific weapon system for launch against a specific target—is fixed by the system design and can therefore be known in advance but little else can be known with the same certainty. The kind of military operation that should be conducted is uncertain, the quality and types of U.S. forces that will be available for follow-on opera-

UNCLASSIFIED

UNCLASSIFIED

tions are uncertain, and the damage likely to be suffered by the support infrastructure is uncertain.

(U) We assume the continued survival of a duly constituted NCA and some residual operational forces,⁽¹⁸⁾ otherwise there is no retargeting problem. Given the forces and an NCA to which the forces would have to be responsive, the first requirement of the retargeting process would be information upon which to base decisions. If some U.S. forces survived, then some communications capability would probably also survive. Information regarding available U.S. forces, therefore, presumably would be available to intermediate headquarters and the NCA, although perhaps with appreciable time delays. Wartime information regarding the Soviet Union would be much less complete. Bomber strike reports and missile-away reports could provide some information regarding previously identified and attacked targets. This information would be useful both to assist the NCA in choosing a preferred course of action and to retarget specific weapons to cover missed targets. Reconnaissance and surveillance sensors have a potential capability to confirm the destruction of specific targets and identify new ones as long as all their communications links and the required data processing centers also survive. The enduring survival in wartime of the relatively limited number of critical elements in such systems is highly doubtful, however. Shortly after the start of a general war, information on Soviet targets would be limited to less-than-perfect knowledge of the current status of targets known to exist before the war.⁽¹⁹⁾

(U) The example and history of the Executive Committee formed by President Kennedy to assist him in decisionmaking at the time of the Cuban Missile Crisis in 1962 suggests both how difficult and how important this essential function is, even without any wartime disruption and with a period of a week or so to reach a decision. Conditions after a major nuclear exchange would be almost infinitely worse. As indicated above, an NCA in some form could be assumed to exist in this intrawar period but we must assume that the NCA and most of its support system would have been attacked. The NCA decisionmaking process would have to operate under the urgency of a dangerous and unprecedented

UNCLASSIFIED

situation, with impaired support, reduced and delayed information, reduced data bases and data processing capabilities, and disrupted and delayed communications. Similar conditions would exist with regard to the JCS upon which the NCA depends for information and the development and evaluation of options. Decisions could be reached and transmitted as long as the NCA, the JCS, and the communications existed but the NCA and the JCS might be unable to perform all their normal prewar functions, let alone assume any significant number of new responsibilities.

(U) Limitations on the ability of the NCA and the JCS to assume major new responsibilities are particularly worrisome because intermediate military agencies with a role in the targeting process, such as JSTPS and the nuclear CINCs and their staffs, would also be subject to attack. All those activities necessary to provide operational units with appropriate instructions normally performed by these intermediate military agencies--summarized here as the preparation and distribution of operations orders--would at least be severely disrupted.

(U) If essential functions normally performed by intermediate military agencies could not be performed at higher levels, then they would have to be performed at lower ones. The minimum essential prior requirements for targeting U.S. forces in the field is designation of the targets to be attacked. Bomber crews together with either Wing Operations personnel or the ARB Team Operations Element can plan their own flights, given a list of targets. Similarly, SSBN crews can footprint and target their missiles. Minuteman LCC crews are not able today to footprint their missiles directly, although they can indirectly by trial and error. (This limitation arises solely because the capability has not been provided. It is surely feasible and much more simple than the corresponding SLBM footprinting problem, which SSBN crews have been given the means to solve.)

(U) That is, "direct-to-forces" targeting is feasible as long as, first, the NCA/JCS or duly constituted authority can prepare a list of targets to be attacked and, second, a communications link exists between the NCA/JCS and an operational unit in the field. Target planning of this sort, essentially ad hoc targeting, would surely be less efficient

UNCLASSIFIED

UNCLASSIFIED

than centralized and coordinated planning of the sort performed by JSTPS today but it could be done. The magnitude of the task facing the personnel of the operational unit would depend on whether or not any of the required preprocessing of target data--including such factors as footprinting for MIRVed missiles--had been completed before the targets were assigned to a specific operational unit. If no prior processing had been accomplished, the task would be maximal but still feasible within the time delays identified in Sec. II.

UNCLASSIFIED

(U) NOTES TO SEC. IV

(U) 1. Strategic warning is "...notification that enemy-initiated hostilities may be imminent," *Dictionary of Military and Associated Terms*, Department of Defense, JCS Pub. 1, 3 September 1974, p. 314.

(U) 2. Tactical warning is "...notification that the enemy has initiated hostilities," *ibid.*, p. 326.

(U) 3. "...Our countervailing strategy requires that our plans and capabilities be structured to put more stress on being able to employ strategic nuclear forces selectively...", Secretary of Defense Harold Brown, "American Nuclear Doctrine," *Survival*, November/December 1980, p. 268.

(U) 4. The retargeting facilities and capabilities appropriate for this situation are those reviewed in Sec. II.

(U) 5. These agencies and activities are reviewed in Sec. II.

(U) 6. For a summary description of the Strategic Projection Force and its proposed mode of operations, see *CINCSAC Strategic Projection Force* (U), Headquarters Strategic Air Command, 25 March 1980
[REDACTED]

(U) 7. See, for example, the recent study by Victor G. Jackson et al., *Target Planning with Target Building Blocks* (U), The Rand Corporation, R-2765-DNA, April 1981
[REDACTED]

(U) 8. *CINCSAC Strategic Projection Force* (U), op. cit., p. 49.

(U) 9. Alfred Goldberg (ed.), *A History of the United States Air Force*, D. Van Nostrand, New York, 1974, p. 247.

(U) 10. According to Admiral U.S.G. Sharp, Commander in Chief, Pacific, during four years of the war "The final decision on what targets were to be authorized, the number of sorties allowed, and in many instances even the tactics to be used by our pilots, was made at a Tuesday Luncheon in the White House...[at which] no professional military man...was present...." *Strategy For Defeat*, Presidio Press, San Rafael, California, 1978, pp. 86-87.

(U) 11. *CINCSAC Strategic Projection Force* (U), op. cit., pp. 14, 49-50.

(U) 12. The facilities and capabilities of JSTPS and intermediate headquarters in the United States of relevance here are those reviewed in the subsection of Sec. II entitled "Preparing the SIOP."

~~SECRET~~

(U) 13. Although summary descriptions of SPF planning use such expressions as "...operating from bases that are not subject to attack from tactical air..." (*CINCSAC Strategic Projection Force* (U), op. cit., pp. 17-22), it is obvious that any forward SPF base could be attacked by a determined enemy using Backfire or other long range bombers or submarine-launched cruise missiles.

(S) 14. [REDACTED]

(U) 15. The retargeting capabilities of particular interest in this situation are those reviewed in Sec. II.

(U) 16. These comments are somewhat speculative but quite consistent with the public justification and exploration of PD 59 provided by Secretary of Defense Brown, for example.

(S) 17. [REDACTED]

(U) 18. A recent Institute for Defense Analyses study provides estimates of the possible number of surviving U.S. ICBMs, SLBMs, and bombers after a SIOP-RISOP exchange for several different scenarios. See R.E.L. Johnson, Jr., et al., *Study of Recovered and Reconstituted Strategic Forces* (U), IDA, Paper P-1257, February 1977 [REDACTED]

(U) 19. Given the known Soviet emphasis on the concept of *maskirovka*, which is generally understood to include much more than simple camouflage, and past examples of Soviet deception in wartime

~~SECRET~~

UNCLASSIFIED

(World War II), peacetime (the bomber and missile gaps), and crisis-time (the Cuban Missile Crisis and the 1968 invasion of Czechoslovakia), it would be very surprising if Soviet deception did not confront the United States with some significant surprises with retargeting implications at the outbreak of general war. For examples see Cynthia M. Grabow, *A Handbook of Warning Intelligence* (U), Defense Intelligence Agency, June 1974 [REDACTED] Barton Whaley, *Stratagem: Deception and Surprise in War*, Massachusetts Institute of Technology, Center for International Studies, C/69-9, 1969; and Arnold L. Horelick and Myron Rush, *Deception in Soviet Strategic Missile Claims, 1975-1982* (U), The Rand Corporation, R-409-PR, May 1983 [REDACTED]

UNCLASSIFIED

UNCLASSIFIED

(U) V. PROBLEMS AND POSSIBLE SOLUTIONS

(U) The preceding sections of this report have introduced and discussed a series of topics important in one way or another in a comprehensive study of U.S. strategic force retargeting. The following material recombines the essential elements of this prior material to focus on problems and possible solutions and then candidate changes in U.S. systems and procedures to improve U.S. retargeting capabilities and reduce retargeting limitations.

(U) THE RETARGETING CONTEXTS OF PRIMARY CONCERN

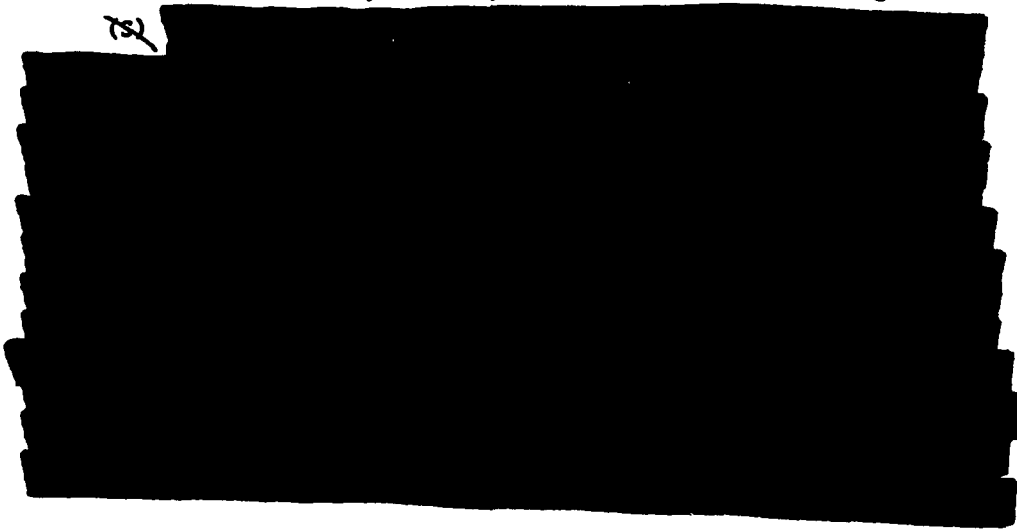
(U) The first major implication of the preceding material is that the categories of situations of major concern are the categories of *preplanned strategic operations* and *follow-on strategic operations*. The four other categories of situations identified in Sec. III and analyzed in Sec. IV are of relatively little concern, not because they do not introduce a potential requirement for retargeting, but because either the required retargeting is not particularly time-urgent or because the retargeting would occur in an essentially uninterrupted environment. All the resources of the system in place today could be marshalled to accomplish the relatively modest amount of retargeting that would be required. To conclude that strategic force retargeting in such conditions of peacetime or in less-than-general war is of relatively less concern is not to suggest that it should not receive attention, of course. It is almost always the case that any function--in this case retargeting for a range of special situations--will be performed more efficiently and effectively if it is the primary responsibility of a specific organization rather than the secondary concern of an agency with other primary interests. To judge whether or not present capabilities for retargeting for this range of special situations identified here could be significantly improved by new systems and procedures would require more knowledge of the details of target planning for Non-SIOP Options than provided in this study. The major conclusion of interest here is that the

~~SECRET~~

two categories of situations called *preplanned strategic operations* and *follow-on strategic operations* are of major concern because re-targeting will be either required or at least desirable, the re-targeting will be time-urgent in many cases, and the normal peacetime capabilities for accomplishing retargeting will almost certainly have been disrupted and degraded.

(U) A RETARGETING-ORIENTED TARGET CLASSIFICATION

(U) All of the targets of possible interest in any of the six categories of situations where retargeting might be required can be classified for the purposes of this analysis as either National Target Base (NTB) targets--i.e., the list of targets included in the SIOP or theater nuclear attack plan--or non-NTB targets. Non-NTB targets can be either newly discovered targets or targets that were previously known and were included in the Target Data Inventory, the Basic Encyclopedia (BE), or the Automated Intelligence File but were not selected for inclusion in the NTB. This distinction between NTB and non-NTB targets is relevant because it is almost certain that none of the non-NTB targets will previously have been sufficiently developed to be realistic candidates for attack without further analysis. Information about them will be incomplete and, perhaps more important, limited in its distribution. The operational forces will not routinely have any information on non-NTB targets.



~~SECRET~~

~~SECRET~~



(U) All targets either in the current SIOP or currently assigned to the SRF can be further classified as packages of selected multiple targets--primary mission packages for bombers or MIRVed missiles--or individual targets. Retargeting complete primary mission packages can be required for bombers, for example, if a specific bomber failed to reach any of its assigned targets because, again for example, it was attacked and destroyed on its base or aborted and was lost en route to its first target. Individual targets could become candidates for retargeting because they survived attack by a single-RV Minuteman II or Titan II ICBM, or because the Minuteman II or Titan II was destroyed before it had the chance to launch, or they were targets that happened to survive attack by a bomber or MIRVed missile. This distinction between retargeting entire primary mission packages and retargeting individual targets is important because retargeting for individual targets will require that either single-RV missiles be used (or that all the RVs of a MIRVed missile be assigned to the same target) or that new footprints and bomber sorties be created, if feasible, for any attack not using the Minuteman II or Titan II. Whether or not prior sortie planning for a bomber or prior footprint construction for a MIRVed missile can be utilized without change for retargeting a complete primary mission package depends upon such factors as, for example, the bomber departure base and the availability of inflight refueling.

(U) The targets of interest in the category of *preplanned strategic operations* are those described above as SIOP or SRF targets (in the larger category of NTB targets, of course). Retargeting of a full package may be required if specific bombers or missiles were destroyed on the ground before launch or if they failed in flight before releasing any of their weapons. Retargeting of part of a

~~SECRET~~

UNCLASSIFIED

package, one or more individual targets, may be required if a bomber was shot down after having attacked its first target but before attacking the last, or if a specific attacked target nevertheless survived because of such factors as poor accuracy or unreliability. There are two major points of interest regarding the retargeting problem in the category of preplanned strategic operations. First, no new target data are required. The locations and other relevant features of all targets will have been identified in peacetime and could be as widely distributed to operational units or multiple data-storage sites as desired. Second, in some cases the prewar planning of complete target packages for the multiple weapons of a bomber or a MIRVed missile will remain appropriate for reassignment of the complete package to an alternative weapon system, but in other cases it will not. In these other cases, the scattered survivors of the initial attack will require construction of either new bomber sorties and MIRV footprints (or, again, reattack by several single-RV systems such as the Minuteman II ICBM).

(U) The targets of interest in the category of *follow-on strategic operations* are not limited to only the NTB subset identified above. They may include other targets in the NTB, the TDI, the BE, the AIF, or even previously unknown targets that were identified only after the outbreak of war. Again, there are two major points of interest regarding the retargeting problem in this category. One of these is similar to the retargeting problem in the category of preplanned operations. That is, the prewar targeting planning for complete packages of multiple bomber and missile weapons will remain useful in some cases and in other cases it will not. New sorties and MIRV footprints will have to be constructed for the survivors of prior attacks and the newly identified targets, or single-RV systems will have to be used. The second point is different, however. The appropriate data for all targets cannot have been distributed to any operational unit in advance because, by definition, the possibility of new targets has been introduced. The number of such new targets may be small but an increased communications load will exist whenever re-targeting for new targets is required.

UNCLASSIFIED

UNCLASSIFIED

(U) ESSENTIAL FUNCTIONS IN THE TARGETING PROCESS

(U) The broadened perspective of targeting and retargeting introduced in Sec. III suggested that the step of preparing crews and delivery vehicles to attack specific targets is only the final step in a longer process that includes the gathering of information, decision-making, and the preparation and distribution of operations orders. Crews and vehicles can be targeted only after all these prior steps have occurred. Since the process that has been called preparation and distribution of operations orders is highly likely to have been disrupted and degraded in the two categories of situations of major concern, it is appropriate to consider it in more detail. For reasons that will become obvious in the discussion below, we divide the process of preparing and distributing operations orders into three parts: selection, sorting, and grouping (or packaging).⁽¹⁾

(U) Finally, for the personnel of the operational unit to complete the final step in the retargeting process, they may need more than just the list of targets to be attacked. They may need, in addition to surviving delivery vehicles, of course, special equipment such as computers and fire control systems to process the target information they receive, and special materials such as maps and tapes for use by the crews or equipment.

(U) PROBLEMS AND POSSIBLE SOLUTIONS

(U) The descriptive material in Sec. II identifies the agencies responsible for each of the essential targeting functions considered in this study. The NCA (with JCS and CINC support) is responsible for the first function, decisionmaking. The last function, preparing individual delivery vehicles and personnel, is the responsibility of the operational unit. The remaining function, the preparation and distribution of operations orders, which we expand here to include the selection, sorting, and packaging of targets, is the responsibility in peacetime of the JSTPS. All these organizations are potentially vulnerable to attack, of course. In addition, unless special provisions are made, a full wartime retargeting capability may not exist even if

UNCLASSIFIED

UNCLASSIFIED

all the organizations involved survive. These factors are the source of the potential retargeting problems identified here.

(U) Degradation or Disruption of Decisionmaking Support

(U) Nothing in this study contemplates the absence of the NCA or anticipates independent actions by operational units acting autonomously. The continued survival of the NCA or duly authorized successors is assumed throughout. The wartime problem of concern here facing the decisionmaking function is likely to be the degradation or disruption of the support required by the NCA during the decisionmaking process. This support has two parts. One part is the direct dedicated support provided by the National Military Command System--the National Military Command Center, the Alternate National Military Command Center, and the National Emergency Airborne Command Post--operated by the JCS. The second part is the indirect support provided by other agencies, such as the nuclear CINCs and their staffs.

(U) We do not specifically address in this study the wartime support requirements of the NCA or the means of satisfying those requirements. Further, in addition to assuming the continued survival of the NCA, we also assume the continued survival of a military chain of command. Some part of the Office of the Joint Chiefs of Staff will survive or replacements will be available.⁽²⁾ Similarly, some part of the staffs of the nuclear CINCs or their constituent components will survive and assume command or be appointed. Communications up and down the chain of command can be assumed to be maintained or reestablished after disruption, although undoubtedly with delays and reduced capabilities.

(U) Loss of All Retargeting Capability Through Loss of Target Selection, Sorting, and Packaging Capabilities

(U) The peacetime dependence on JSTPS of the target selection, sorting, and packaging functions need not carry over into wartime. Three alternative options exist for seeking to insure that these crucial functions can be performed in wartime. The first is to multiply the number of agencies that can accomplish the full array of functions. The second is to reallocate the functions normally performed by JSTPS,

UNCLASSIFIED

assigning some upward to the NCA and its direct JCS support, and assigning others downward to the nuclear CINCs and the operational units so that all the essential targeting functions can be performed in the absence of JSTPS. The third is a combination of the first two, to provide additional organizations able to substitute for JSTPS and to increase the capabilities of existing participants to play a broader role.

(U) The first option, providing additional agencies with the capability to perform the essential functions, is surely feasible. As a solution to the problem of the potential vulnerability of JSTPS, it is not necessarily a high-confidence solution, however, because any other agency where these essential capabilities might be replicated would likely be a priority target for attack at the same time as JSTPS. Air-mobile command posts presumably would have good survival prospects if they were continuously airborne or received sufficient warning, in spite of the vulnerability of the assets required to sustain airborne operations. But their prospects for endurance would be uncertain otherwise. Both air-mobile and ground-mobile command posts will have limited data storage and processing capabilities. Distributed data storage and processing systems and the communications to provide access to them would be heavily burdened in time of war.

(U) The second option identified for solving this problem is to reallocate these three threatened essential functions between the NCA and its direct JCS support and the operational units. Different factors affect the preferred allocation for each function.

(U) The job of selecting the targets appropriate for a specific course of action is probably infeasible at the level of the operational unit. If this is true, and if the assignment of this function to existing or new agencies as a backup for JSTPS is a poor solution because of their vulnerability also, then it is essential that the JCS support available to the NCA have the capability to perform the function. That is, if any high-confidence wartime capability is desired, then the NCA/JCS must be able to perform this function if necessary.⁽³⁾

(U) The second essential part of the function of preparing and distributing operations orders is the sorting of the targets to be

UNCLASSIFIED

~~SECRET~~

attacked according to the type of weapon system to be used. Once a list of targets to be attacked has been assembled, together with such additional factors as the damage expectancy required to support the objective of the attack, it is a relatively straightforward process to identify the preferred weapon systems by considering the forces that are available, their range and location, their probability of penetrating to target, and the probability of damage. Nomographs relating these factors could be prepared in advance and provided to the JCS staff supporting the NCA. Alternatively, the nuclear CINCs and their staffs or even lower level units could be provided with lists of all targets that the NCA wanted to attack and then each nuclear CINC could do the target sorting, although this is a less desirable procedure. On balance, providing the NCA/JCS with the capability seems preferred.

752 [REDACTED]

(U) The third option identified for solving the problem of insuring that the three functions normally performed by JSTPS can be performed is a mixture of the first two--to provide other agencies including the nuclear CINCs with the capability to support the NCA in its decision-making activities and to perform the three JSTPS functions if significant fractions of their capabilities survive, but to insure that the NCA with its direct JCS support and the operational forces can do the job alone if necessary.

(U) Inability to Retarget Surviving Minuteman II ICBMs

(S) Although MIRVed missiles can be used to attack single targets (risking fratricide if all RVs are sent against the same target, or wasting capability and causing collateral damage if they are "thrown away"), single-RV missiles such as the Minuteman II ICBM may be particularly valuable for attacks against isolated targets in follow-on

~~SECRET~~

~~SECRET~~

strategic operations. Retargeting the Minuteman II today requires both physical entry into the missile launch facility and possession of special tapes containing the target data. Neither of these requirements is likely to be met in the immediate postattack period. Surviving Minuteman II ICBMs will probably be available for use against only one of the eight targets stored in advance in the guidance system computer.

(S)



(U) Inability to Retarget Bombers

(U) Bomber sortie planning normally requires, among other things, three different kinds of maps: the 1 to 2,000,000 scale Jet Navigation Charts used in high altitude flight, the 1 to 500,000 scale Operational Navigation Charts used in low altitude flight over enemy territory, and the 1 to 200,000 scale Air Target Charts of the target area and its approaches. In normal practice, individual bomber wings are provided with Air Target Charts for only their assigned sorties and areas of responsibility. In practice, therefore, only the units assigned to the Secure Reserve Force, which may be required to strike any of a large number of targets, are routinely provided with all the maps necessary for retargeting promptly to any newly specified targets. Missions can be set up using Jet Navigation and Operational Navigation Charts alone, of course, but even this potential retargeting limitation could be readily solved by distributing all Air Target Charts to all units and bases to which surviving aircraft might be dispersed or recovered (or to off-site locations near possible recovery bases).

~~SECRET~~

UNCLASSIFIED

(U) Inability to Target Air-Launched Cruise Missiles (ALCMs)

(U) Although ALCMs have not been considered explicitly in this study because they represent a future capability, it can be noted that their targeting depends upon suitably prepared digitized terrain maps for specified navigation checkpoints. Without these maps the ALCM is essentially useless. ALCMs attacking targets in the same general area may be able to use many if not all the same enroute checkpoints, but the checkpoints for widely separated target areas will be totally different. Hence, a full retargeting capability for ALCMs will require ready access to all these specially prepared maps, a problem that can be readily solved by distributing them in advance to all units equipped with ALCMs.

~~SECRET~~

(U) NOTES TO SEC. V

(U) 1. As suggested earlier, the list of functions essential to retargeting could be further expanded to provide still greater attention to detail. For example, we have omitted here any mention of the task of preparing and maintaining comprehensive, up-to-date target lists. In wartime this function would consist of updating such basic lists as the NTB by deleting--on the basis of strike reports and poststrike reconnaissance--those targets already attacked and destroyed, and adding new targets identified by whatever process. Although the existence of such lists is obviously essential, we view the problems and procedures for preparing and maintaining such lists as outside the scope of this study.

(U) 2. For example, see the *USAF War and Mobilization Plan, Volume I, Basic Plan* (U), Headquarters, United States Air Force, WMP-1 (Secret), pp. G-I-2 through G-I-4 and G-I-3-1 through G-I-3-5 for a description of USAF plans to provide Air Force personnel for a reconstituted JCS.

(S) 3. 

(S) 4. 

~~SECRET~~

~~SECRET~~

(U) VI. CHANGES AND PRIORITIES

(U) The preceding analysis has identified a number of problems and possible solutions for retargeting U.S. strategic forces. The changes in systems and procedures required by these solutions are summarized here and priorities for implementing these changes are suggested.

(U) POSSIBLE CHANGES IN SYSTEMS AND PROCEDURES

(U) Four different types of changes to improve U.S. retargeting capabilities can be identified. These concern the NCA and its JCS support, the nuclear CINCs and intermediate military commands, and operational units. Some miscellaneous remarks will also be offered.

(S)

(S)

1.

(S)

2.

(S)

3.

(S)

~~SECRET~~

~~SECRET~~

[REDACTED]

[REDACTED]

- ✓ 4.
- ✓ 5.
- ✓ 6.
- ✓ 7.

[REDACTED]

[REDACTED]

(U) A concern to ensure that any surviving delivery vehicle can be targeted and employed, in combination with recognition that the surviving capabilities of all agencies in the chain of command above

~~SECRET~~

~~SECRET~~

the organizational units will be limited, suggests changes at the level of the organizational unit.

~~(S)~~

~~(S)~~

8.

~~(S)~~

9.

~~(S)~~

10.

~~(S)~~

~~(S)~~

11.

~~(S)~~

~~(S)~~

12.

~~(S)~~

13.

~~(S)~~

14.

~~SECRET~~

~~SECRET~~

[REDACTED]

(S) [REDACTED]

(U) Regarding miscellaneous factors:

(S) 15. [REDACTED]

(U) *Impact:* This action will validate existing and proposed capabilities, improve the efficiency of operations, and perhaps identify new requirements. Without this action retargeting performance in time of crisis or war could be inefficient or haphazard because of inadequate training and practice, or even prevented entirely because of unforeseen problems.

(U) PRIORITIES FOR IMPLEMENTATION

(S) [REDACTED]

~~SECRET~~

~~SECRET~~

[REDACTED]

(S)

[REDACTED]

(U) After all forces are retargetable so that if they survive they can be used, then maximizing the retargeting flexibility of the system for adaptability in a disrupted and uncertain environment should probably have next priority. This reasoning thus suggests that providing alternative avenues for the performance of the essential JSTPS-type functions, to maximize the efficiency with which re-targeting can be done, is, however useful, a third priority task.

Page 82 is blank.

81

~~SECRET~~

UNCLASSIFIED

GLOSSARY

(This Glossary Is Unclassified)

ABNCP	Airborne Command Post
AIF	Automated Intelligence File
ALCC	Airborne Launch Control Center
ALCM	Air-Launched Cruise Missile
ALCS	Airborne Launch Control System
ANMCC	Alternate National Military Command Center
AOCC	Alternative Operational Control Center
ARB	Alternate Reconstitution Base
ATR	Automatic Target Reassignment
AUXCP	Auxiliary Command Post
BE	Basic Encyclopedia
CINC	Commander in Chief
CINCEUR	Commander in Chief, Europe
CINCLANT	Commander in Chief, Atlantic
CINCPAC	Commander in Chief, Pacific
CMF	Combat Mission Folder
DGZ	Designated Ground Zero
EAM	Emergency Action Message
EAUXCP	East Auxiliary Command Post
ECM	Electronic Countermeasures
FEAF	Far Eastern Air Forces
FEO	Force Employment Option
HERT	Headquarters Emergency Relocation Team
ICBM	Intercontinental Ballistic Missile
JCS	Joint Chiefs of Staff
JSCP	Joint Strategic Capabilities Plan
JSTPS	Joint Strategic Target Planning Staff
LCC	Launch Control Center
LF	Launch Facility
LNO	Limited Nuclear Option
MAO	Major Attack Option

UNCLASSIFIED

MIRV	Multiple Independently Targetable Reentry Vehicle
MM	Minuteman
MPS	Multiple Protective Shelters
MX	Missile, Experimental
NATO	North Atlantic Treaty Organization
NCA	National Command Authorities
NEACP	National Emergency Airborne Command Post
NMCC	National Military Command Center
NMCS	National Military Command System
NSDD	National Security Decision Directive
NSDM	National Security Decision Memorandum
NSO	Non-SIOP (Single Integrated Operational Plan) Option
NSTL	National Strategic Target List
NSWC	Naval Surface Weapons Center
NTB	National Target Base
NUWEP	Nuclear Weapons Employment Policy
OCC	Operational Control Center
PACCS	Post-Attack Command Control System
PD	Presidential Directive
RDJTF	Rapid Deployment Joint Task Force
RFTL	Reserve Forces Target List
RISOP	Red Single Integrated Offensive Plan
RNO	Regional Nuclear Option
RR	Radio Relay
RV	Reentry Vehicle
SAC	Strategic Air Command
SAO	Selected Attack Option
SIOP	Single Integrated Operational Plan
SLBM	Submarine-Launched Ballistic Missile
SPF	Strategic Projection Force
SRAM	Short-Range Attack Missile
SRF	Secure Reserve Force
SSBN	Nuclear-Powered Fleet Ballistic Missile submarine
TDI	Target Data Inventory
WAUXCP	West Auxiliary Command Post

UNCLASSIFIED