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Revised as of
8 April 1958
E. W. Purdy

PROPOSED
PRELIMINARY OPERATIONAL CONCEPT FOR
MINUTEMAN

~~FORMERLY RESTRICTED DATA~~
When utilized in accordance with
Administrative and Criminal Sanctions, Handle
as Restricted Data in Foreign Dissem. Policy
Section 244b, Atomic Energy Act, 1954.

I. MISSION:

The mission of the MINUTEMAN is the destruction of strategic targets. It will be utilized to ensure full exploitation of the strategic strike force. (~~Secret~~)

II. GENERAL DESCRIPTION:

- A. The MINUTEMAN will utilize solid propellant rocket engines assembled in a three stage configuration and will be controlled in flight by an all-inertial guidance system. (~~Secret~~)
- B. The system is designed to provide a quick reaction capability from dispersed and hardened launch facilities. Minimum periodical monitoring, checkout and replacement will be required by the weapon installed in the launcher. (~~Secret~~)
- C. The system incorporates the capability of operational control from remoted command locations. (~~Secret~~)
- D. The system will augment the present ballistic missile force comprised of first generation missiles, i.e., SM-65, SM-75, SM-78 and SM-68. (~~Secret~~)
- E. The system includes the equipments, facilities, techniques and trained personnel to conduct operational missile launchings during hostilities and combat training launchings during peacetime conditions. (~~Secret~~)
- F. The length of the MINUTEMAN assemblage is approximately 57 feet; the diameter of the first stage rocket engine is approximately 6 feet; stabilizing fins may be used. (~~Secret~~)

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G. The MINUTEMAN will be air transportable in projected Air Force inventory support aircraft. (Secret)

H. Operations from remote locations necessitates innovations in the normal concept of system operation. Helicopters and light aircraft are compatible with the requirements for operational flexibility, site accessibility, transportation of personnel and surveillance. The utilization of these aircraft is being studied and may result in the establishment of a requirement for the development of a new helicopter. Qualitative requirements will be submitted in accordance with 'FR 57-3. (Conf)

III. ORGANIZATION:

A. MINUTEMAN encompasses unique design characteristics and as a result the organizational structure will be subject to change as development of the system progresses. The operational organization will be under the command of the Strategic Air Command. The initial units activated may be organized under a Table of Distribution until stabilized requirements are established for both personnel and equipment. For planning purposes the basic organization will be a squadron. (Conf)

B. Operational Phase:

1. In order to attain an operational capability at the earliest possible date, the operational phase will begin prior to completion of the development phase. The time phase overlap is anticipated to extend to approximately mid Cy 63. During this period, the Strategic Air Command will be responsible for the development of all operational plans and operations, in accordance with directives from Headquarters USAF. (Secret)

2. The Strategic Air Command will organize, train, and equip the initial squadron. Squadrons will be composed of units capable of

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supporting the various functions required by the system. The size of the squadrons and organizational build-up will be commensurate with the requirements and magnitude of development and operations. When the system becomes fully operational all equipment, training and personnel required will be obtained through regular established procedures. (Conf)

3. For those functions located off an active installation, support may be requested of any command which has the nearest adequate facilities. (Uncl)

4. The MINUTEMAN force will be comprised of large numbers of missiles installed in dispersed hardened silo-launchers to provide survival of a sufficient portion of the force capable of instantaneous reaction. The common denominator for launch control centers and missiles for a squadron will be determined to provide operational reliability and flexibility. Criteria for dispersal and hardness for the operational facilities will be determined. (Secret)

5. The squadron launch control center(s) will be provided the capability to perform the functions of missile monitoring, checkout and launch for those missiles assigned to the squadron and to perform the launch function for missiles assigned to other launch control centers to insure that the force can be launched irrespective of the status of one or more launch control centers. (Secret)

6. Operational facilities will be located near existing DOD installations where possible, and, in general, will be located in the less densely populated areas of the United States. (Secret)

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7. The capability to conduct combat training launchings from these facilities is desirable and the feasibility will be investigated. (Conf)

8. Fully qualified personnel are required for all functions. These personnel will be made available from resources from within the USAF and civilian sources. Specifications for trained personnel will be expressed in terms of existing specialties insofar as possible to facilitate assignment, training and utilization. Manning and personnel utilization will provide for operation on a normal commuting eight hour shift basis. (Uncl)

9. Based on present operational concepts and limited maintenance requirements "Minuteman" should require no increase in current skills associated with the missile systems. However, a study will be undertaken in this area to determine the probability of a need for more intensive and broader training to compensate for probable reduced manpower requirements. (Uncl)

10. Launch Functions:

a. The launching unit will be comprised of the personnel required to perform the functions involved in the daily operation at a hardened launch control center and associated hardened launchers. (Conf)

b. The equipment and personnel required will be commensurate with the requirement to provide a non-interrupted alert capability, performing monitoring, checkout, minor maintenance, security and surveillance and launch capability for its own missiles and for a portion of the missiles normally associated with any other designated launch control center. (Conf)

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c. Due to the geographical location of individual launch control centers, housing for the personnel manning the installation, and facilities for storage and maintenance of organic equipment may be required at or near the launch control center. (Conf)

d. The launch function of MINUTEMAN will be capable of being remotely controlled from alternate or higher command headquarters. The system will be capable of salvo or single missile launch operation. (Secret)

11. Control Function:

a. Headquarters SAC will exercise operational control by direct communication circuits of radio links with each IOC operating a launch control area. (Conf)

b. Alternate headquarters and intermediate command headquarters will be provided similar communications equipment to facilitate a continual command monitoring and control capability. (Conf)

12. Target Function:

a. Missile target assignments will be reflected in the current Headquarters SAC EWP documents. (Conf)

b. The computation of trajectories and preparation of target materials as required for use at the launching sites will be a function of the target trajectory preparation center of Headquarters SAC. (Conf)

c. Initially, each MINUTEMAN will employ a single target capability. A remote controlled target change capability is desired. (Secret)

IV. OPERATIONAL CAPABILITIES:

A. The MINUTEMAN force will augment the strategic strike force

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force providing large numbers of economical ICBM missiles requiring minimum support equipments, facilities, personnel and maintenance.

The system is capable of fast reaction from dispersed, hardened operational launch facilities. (~~Secret~~)

B. The MINUTEMAN operational strike force will be introduced into the operational inventory in limited numbers in July 1962. Thereafter, force build-up will be rapid, commensurate with demonstrated capabilities of the system and military requirements. (~~Secret~~)

C. MINUTEMAN is a three stage solid propellant ballistic missile equipped with an all-inertial guidance system capable of delivering a suitable warhead from deployed positions in the sparsely populated regions of the United States to selected targets at ranges extending to 6,500 nautical miles. (~~Secret~~)

D. Initially, the system will possess the following capabilities:

1. Delivery of _____ warheads to respective nominal ranges of 6,500 and 5,500 nautical miles, with a CEP of 1 to 3 nautical miles. (~~Secret~~)
2. Delivery of larger yield warheads to shorter ranges. (~~Secret~~)
3. Salvo or single launch operations within minimum elapsed time from the underground hardened launchers, with an exposure time prior to missile launch not to exceed 30 seconds. Advanced states of alert (missile subsystems operating) for operations during strategic alert conditions will be determined to improve the retaliation capability. (~~Secret~~)

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4. Single target capability, with the capability to change target information in 2 to 3 hours. A multiple target capability will be provided commensurate with a military evaluation of the feasibility and missile complexity and reliability. (Secret)

5. Judicious application of dispersal and hardening will insure that not more than one launch control center will be disabled by a 50 MT detonation. (Secret)

6. Judicious application of dispersal and hardening will insure that not more than one launcher/missile will be disabled by a 5 MT detonation. (Secret)

7. Unattended placement of missiles in hardened launchers for a minimum of 6 months except for replacement of missileborne target information. (Conf)

8. Control of launch functions from remoted locations. (Conf)

9. To effect missile launch at each individual launcher. (Conf)

10. The communications system will be hardened commensurate with the level specified for the launcher/missile/control center combination. (Conf)

E. Development of the weapon system will be continued:

1. Increase warhead yields to optimum. (Conf)

2. Increase effective missile ranges. (Conf)

3. Increase warhead re-entry speeds to optimum. (Conf)

4. Decrease CEP. (Conf)

5. Decrease reaction time. (Conf)

6. Increase the reliability of the remoted launch capability. (Conf)

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7. Increase force survival capability and determine the feasibility and parameters for super hard operations with a nominal portion of the MINUTEMAN strike force (i.e., withstand the effects of cratering). (~~Secret~~)

8. Investigate the feasibility of multiple warheads and decoy equipment. (~~Secret~~)

F. The system will possess the following capabilities by the end of CY 65:

1. Delivery of _____ warheads to respective nominal ranges of 7,000 and 6,000 nautical miles. (8,500 n. m. desired) with a CEP no greater than 1 nautical mile (~~Secret~~)

2. Delivery of larger yield warheads to shorter ranges. (~~Secret~~)

3. Salvo or single launch operations from the underground hardened facilities within 20 to 30 seconds during strategic alert conditions. (~~Secret~~)

4. Single target capability. A multiple target capability, with the capability to change target information remotely, will be provided commensurate with a military evaluation of the feasibility and missile complexity and reliability. (~~Secret~~)

5. Unattended placement of missiles in hardened launchers for a minimum of 3 years except for replacement of missileborne target information as required. (~~Secret~~)

V. UTILIZATION

A. As a goal, launching from each of the first twenty or more launch positions is desirable to determine and verify the combat effectiveness of individual operational launch positions. Thereafter, military

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requirements will determine the number of launchings from newly constructed silo-launchers for this purpose and may decrease commensurately with missile effectiveness demonstrated during the preceding launchings. (Secret)

B. The replacement rate of complete missiles is anticipated to be 25% to 35%, annually. (Conf)

C. Annual missile launches for combat training will approximate 10% to 20% of the total strike force. Missiles for this purpose will be those cited in paragraph B, primarily. (Conf)

D. Data appearing in current USAF Program Documents will supersede any conflicting data contained herein. (Uncl)

VI. COMMUNICATIONS AND ELECTRONICS:

A. The communications and electronics portion of the system will provide reliable, accurate and secure circuits between:

1. Headquarters SAC, intermediate command and alternate headquarters and launch control centers, for transmitting command, arming, launch, and force status administrative intelligence. (Secret)

2. Launch control centers and associated launchers for communication, monitoring, check-out, surveillance and launch purpose. (Secret)

3. Launch control centers and all or part of the launchers associated with adjacent or remote launch control centers for launch purposes, only. (Secret).

B. This portion of the system will be designed and implemented to insure survival commensurate with the rest of the weapon system. (Conf)

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VII. THEATER AND TIME DEPLOYMENT:

- A. The MINUTEMAN will be deployed in the United States. (Secret)
- B. The MINUTEMAN will be introduced into the USAF weapon inventory in July 1962. Production will be such to insure adequate numbers of missiles for attrition losses and an overall force structure in consonance with military requirements. (Secret)

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