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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
DIRECTORATE OF REQUIREMENTS

GOR NO. 171

DATE 6 August 1958

GENERAL OPERATIONAL REQUIREMENT
FOR A
QUICK REACTION INTERCONTINENTAL
BALLISTIC MISSILE WEAPON SYSTEM (U)

I. PURPOSE

This GOR documents the requirement for a quick reaction intercontinental ballistic missile which uses solid or storable liquid propellants. Such a missile dispersed and hardened should greatly increase the national security by providing an improved offensive capability for the Strategic Air Command. (U)

II. OPERATIONAL MISSION

The missile will assist in the accomplishment of the strategic bombardment mission of the USAF. (U) see GOR 190 dtd 18 Feb 1959 re complex [illegible] missile

III. ENEMY EFFECTIVENESS ESTIMATES

The Hq USAF GOR Intelligence Annex as amended contains applicable enemy effectiveness estimates. (U)

IV. FRIENDLY ENVIRONMENT

A. The weapon system will be designed to operate in environmental conditions found in all parts of the world; however, initially it will be employed from sites within the continental limits of the United States. (C)

B. To obtain the maximum deterrent potential the weapon system must be designed for dispersed operations from hardened sites. This dispersal and hardening will be of added importance as the accuracy and yield of the Soviet ICBM's improve. (C)

C. The level of hardness and degree of dispersal will be such as to minimize vulnerability to enemy attack. The most appropriate hardness level and separation distance will be selected to provide the best cost effectiveness of the weapon system. Hardening of the missile sites and control centers is extremely significant in terms of providing a capability of launch after absorbing an enemy attack. (C)

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V. OPERATIONAL EMPLOYMENT

These missiles when deployed in large numbers at properly dispersed and hardened sites may prove to be one of the prime weapon systems of the Strategic Air Command. In case the enemy initiates hostilities, these missiles will provide an immediately available source to attack high priority targets. (C)

VI. LIMITATIONS OF PRESENT SYSTEMS

ICBM's presently under development, being the first vehicles of this type, are understandably complex, bulky, and expensive. Hardness and dispersal increase these costs. The necessity for complex maintenance installations and storage sites for cryogenic fuel further increases the cost of complete dispersal of the present ICBM systems. The necessity for exposure of the missiles prior to launch increases the vulnerability to enemy actions. (S)

VII. OPERATIONAL PERFORMANCE

A. Readiness

The missile should be designed to permit it to be maintained in a constant state of readiness to provide an almost immediate launch capability from a hardened environment with a minimum exposure time. (S)

B. Range

A range of 5500 NM is required. Longer range is desired to provide flexibility in site location and more complete target coverage. (S)

C. Guidance

The guidance system must be as reliable and accurate as is technically feasible in ballistic systems. It must be capable of remaining in a state of alert for extended periods without serious loss of accuracy or excessive replacement of components. The design of the guidance system should be directed towards the use of self-contained guidance which does not rely upon ground guidance stations after launch. The guidance system should be designed to permit target changes to be made in a minimum of time prior to launch. (S)

D. Yield/CEP

The weapon system should be designed to provide the best initial yield and CEP capability achievable without delaying operational availability. The initial yield and accuracy will be improved as the state of the art permits. The ultimate objective should be to provide the capability of destroying any target of known location. This includes counter-force targets as well as government control centers and other soft area targets. As a guide to the proper yield and CEP, the initial goal should be one megaton and one mile. (S)

E. Reliability

All components of the missile should be designed to retain a high degree of reliability during long periods of storage; however, reliability and weapon system costs should be considered carefully in order not to obtain an unnecessarily high degree of reliability at excessive cost. (U)

VIII. GENERAL CONSIDERATIONS

A. Simplicity of Operation and Maintenance

Emphasis should be directed towards the attainment of utmost simplicity in the design of all equipment which is a part of this weapon system. Solid or storable liquid type propellant is required to provide rapid reaction, and to reduce the problems of storage, handling and launching. When feasible, the design should provide for the use of standard Air Force test equipment, vehicles and tools. (U)

B. Performance

The operational performance stated in Par VII may be varied to provide an early availability or to increase simplicity of the weapon system. Any variation that seriously degrades reaction time, yield, or CEP will be presented to Hq USAF for determination of acceptability. The over-all size and weight of the assembled missile should be as small as possible in consonance with the requirements for transportability, simplicity, and hardening. Technological advances which occur during the development of this weapon system will be used when practicable to provide larger yields, reduced complexity, greater accuracy, and increased range without increasing the missile size and weight. (S)

C. Maintenance

The missile should be designed for maximum storage life with a minimum requirement for inspection and maintenance. Consideration should be given to a design that will allow complete replacement of malfunctioning missiles rather than one which will require major maintenance at the launch site. Site maintenance should be limited to physical inspection and possibly the replacement of plug-in type subsystems. Automatic check-out equipment should be of the "go-no-go" type and should be capable of being operated from a control point remote from the actual launching site. (C)

D. Operations and Control

Each control point should be capable of monitoring and launching a large number of missiles and should be connected to the Strategic Air Command Control Center with a means provided for positive launch control. In addition, redundant control circuits should be provided where necessary to insure the capability of launching all missiles even if a control point is destroyed. (S)

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IX. AVAILABILITY

The strategic offensive potential of this weapon system dictates its requirement in operational units as early as possible. FY 1963 should be used as a target date for the availability of the first operational capability with this weapon system. (S)

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