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REPORT BY THE COMPTROLLER
GENERAL OF THE UNITED STATES

POTENTIAL OF THE LOAD
BALLISTIC MISSILE DEFENSE
SYSTEM FOR PROTECTING THE
MX MISSILE SYSTEM

D I G E S T

An objective of U.S. national defense policy is to maintain a force of land-based intercontinental ballistic missiles (ICBMs) capable of surviving a Soviet attack in numbers adequate for a retaliatory strike. Because of concern over the survivability of the Minuteman missiles, the Department of Defense (DOD) plans to deploy a new ICBM system, called MX, in multiple, protective shelters.

To offset additional increases in the Soviet threat to U.S. land-based ICBMs which are possible under the Strategic Arms Limitation Talks II Treaty, the initial MX system could be expanded by deploying more MX missiles and shelters. If the treaty is not ratified or is canceled and the Soviet threat continues to increase, DOD could either expand the MX system and/or defend the existing MX missiles with a ballistic missile defense system, assuming that the Anti-Ballistic Missile Treaty had been modified or terminated.

To provide the option for defending U.S. ICBMs, the Army is conducting a preprototype demonstration of a ballistic missile defense system called the low-altitude defense (LOAD) system. The demonstration program's goal is to provide the capability for deploying LOAD soon after the preprototype demonstration is completed. Deploying LOAD would require terminating or modifying the Anti-Ballistic Missile Treaty, which sharply limits the United States' and Soviet Union's development and deployment of ballistic missile defense systems.

The LOAD preprototype demonstration represents a major effort within the Army's ballistic missile defense program. The Army plans to

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fund LOAD by reducing other ballistic missile defense efforts and increasing its overall ballistic missile defense budget.

The LOAD defense unit, as defined for the MX defense mission at the time of GAO's review, is to include a radar, data processor, and missiles armed with nuclear warheads. One LOAD defense unit would be needed for each MX missile to be defended.

The MX basing mode is still uncertain. In April 1980 plans were for MX to be based in multiple, protective shelters with each missile being deployed in 1 of 23 shelters arranged in a cluster. Other basing modes are also under consideration which may affect LOAD's configuration. MX deployment is to start in 1986 and is initially expected to include 200 missiles and 4,600 shelters. Proliferation of more missiles and shelters could be necessary for survival of an adequate retaliatory force against the maximum threat level. (See pp. 1 to 6.)

LOAD APPEARS TO BE AN ECONOMICAL OPTION FOR MAINTAINING MX SURVIVABILITY

LOAD, if it can be developed to operate effectively, appears to be an economical way of assuring MX's survivability against threat levels exceeding the constraints of the Strategic Arms Limitation Talks II Treaty.

The validity of LOAD's cost advantage hinges on two major assumptions: (1) the Army and Air Force's cost estimates for each alternative are credible and (2) LOAD will be developed to operate effectively. However, LOAD's potential cost advantage over MX proliferation is substantial.

Assuming a large increase in Soviet reentry vehicles, LOAD could lose its advantage only if its cost increased 167 percent while the MX cost remained constant. Also, LOAD's predicted effectiveness could decrease substantially (assuming costs had not changed)

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before LOAD would lose its advantage over the MX proliferation alternative. (See pp. 7 to 11.)

LOAD IS NOT BEING DESIGNED TO MEET THE RESPONSIVE THREAT

To assure that LOAD will be effective, it must be designed to meet the Soviet threat that will exist during its deployed lifetime. Projections by the intelligence community must be used to develop a threat for use in designing the system. The projected threat, which the Army is using to design LOAD, is less severe than the threat projected in some intelligence assessments.

Unless the Army adequately considers the more severe threat in designing LOAD, it may not be a genuine option for assuring MX's survivability. (See pp. 12 to 25.)

AGENCY COMMENTS

DOD maintains that the Army's design approach for LOAD is proper in that the system is being designed to meet the projected threat and to provide options for responding to growth in the threat. It believes that Soviet responses to LOAD are long leadtime efforts which will allow sufficient time to change LOAD's design.

This position may be valid if it is assumed that the Soviets will not respond to LOAD by developing a means believed to overcome it. But, the contrary assumption could result in fielding a costly, ineffective system, much like the Army's Safeguard system. After developing and deploying that antiballistic missile system at a cost of over \$7 billion, the Safeguard system was deactivated because of its high cost and potential ineffectiveness against the increasing threat.

Changing LOAD to respond to the Soviet threat could involve more than simple modifications. DOD's belief that there will be sufficient time to respond to the severe Soviet threat

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after it is detected in testing may prove valid but at this point appears unfounded, since the Army has not identified how LOAD could be changed to make it effective. (See pp. 22 to 24.)

CONCLUSIONS

An effective LOAD appears to be an attractive option to develop as a hedge for protecting MX against an unconstrained threat.

However, LOAD is being designed against a projected threat which, according to some intelligence assessments, is much less severe than what LOAD may actually face. The more severe threat could prevent LOAD from being a genuine option for assuring MX's survivability.

GAO recognizes that the decision on the threat against which LOAD should be designed is largely subjective; that is, how the Soviets will respond to LOAD cannot be predicted with certainty. But, to design LOAD as though the Soviets will not respond in a way believed to defeat the system could result in adverse consequences, including the need to hastily double the MX deployment. Because of the importance of ICBM survivability to the U.S. defense posture and LOAD's promise for assuring this survivability, GAO believes that the matter should be thoroughly examined now while LOAD's development is in the early stages. (See p. 24.)

RECOMMENDATION TO THE SECRETARY OF DEFENSE

GAO recommends that the Secretary of Defense determine whether the assessment of the responsive threat to LOAD's performance has used appropriate assumptions. GAO believes that the Army used an inappropriate assumption leading to the erroneous conclusion that LOAD would not be adversely affected by the threat. (See p. 24.)

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RECOMMENDATION TO THE CONGRESS

GAO recommends that the Congress evaluate the Army's plans for developing LOAD and determine whether it concurs with the Army's plans for developing LOAD to meet a less severe threat than it may actually face. (See p. 25.)