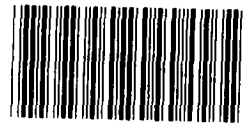
BY THE COMPTROLLER GENERAL

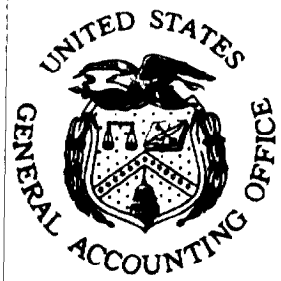
Report To The Congress

OF THE UNITED STATES

Decisions To Be Made In Charting Future Of DOD's Assault Breaker

DOD must still prove the Assault Breaker concept is feasible, assess its cost effectiveness and affordability against other weapons with comparable capabilities, and devise a management approach to handle the problems of the system's joint Army-Air Force development and operation.





MASAD-81-9

FEBRUARY 28, 1981

Request for copies of GAO reports should be sent to:

U.S. General Accounting Office
Document Handling and Information
Services Facility
P.O. Box 6015
Gaithersburg, Md. 20760

Telephone (202) 275-6241

The first five copies of individual reports are free of charge. Additional copies of bound audit reports are $3.25 each. Additional copies of unbound report (i.e., letter reports) and most other publications are $1.00 each. There will be a 25% discount on all orders for 100 or more copies mailed to a single address. Sales orders must be prepaid on a cash, check, or money order basis. Check should be made out to the "Superintendent of Documents".

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-201270

To the President of the Senate and the
Speaker of the House of Representatives

This report presents our views on the major issues concerning the future of the Department of Defense's Assault Breaker program.

For the past several years, we have reported annually to the Congress on the status of selected major weapon systems. This report is one in a series that is being furnished to the Congress for its use in reviewing fiscal year 1982 requests for funds.

We are sending copies of this report to the Director, Office of Management and Budget, and to the Secretary of Defense.

Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

DECISIONS TO BE MADE IN CHARTING FUTURE OF DOD'S ASSAULT BREAKER

D I G E S T

Assault Breaker is a Department of Defense (DOD) concept using standoff weapons to attack moving, rear echelon armor massed deep behind enemy lines. Presently, the only nonnuclear means for attacking these targets is by the use of manned, penetrating aircraft. The advantage of Assault Breaker is that it would permit attacking these targets with standoff weapons. The concept involves using an airborne radar; airborne or surface launchers; strike missiles with submunition dispensers; antiarmor self-guided submunitions that are dispensed over the target; and a communications, command, and control network.

Assault Breaker was conceived to obtain a uniquely high rate of kill at a much smaller risk and cost than present weapons permit. DOD officials believe Assault Breaker's fire rate could destroy in a few hours sufficient vehicles in Warsaw Pact reinforcement divisions to prevent their exploiting a breakthrough of North Atlantic Treaty Organization (NATO) defenses. Preliminary estimates of acquisition costs are about $5.3 billion.

Two modes of delivering Assault Breaker munitions are being considered. The Army has proposed a ground-launched missile and the Air Force proposes that the missile be air-launched. The Army's proposal contemplates fielding Assault Breaker as an addition to its planned Corps Support Weapon System. This system is to replace the existing nuclear LANCE system. The Army is considering using the Air Force's PAVE MOVER targeting radar for its Corps Support Weapon System. The Air Force proposes launching the Assault Breaker weapon from one of several aircraft candidates, including the B-52, and is considering using one of the Army missiles that would evolve from the Assault Breaker development effort.

The schedule for completing development of an Assault Breaker capability is uncertain. DOD is considering delaying the start of engineering development until 1983, or later, to provide more time for proving the concept's feasibility.

Assault Breaker's development began with a concurrent concept definition and advanced development phase looking towards an early deployment of the system. This tight schedule allows for only limited testing of several important program elements, involving medium to high risk, before a decision on full-scale engineering development is made. (See pp. 1 to 6.)

DOD faces major decisions before committing large resources to Assault Breaker development. It must decide

--whether the testing planned in advanced development is sufficient to demonstrate the feasibility of the Assault Breaker concept before full-scale engineering development is to begin (see pp. 8 to 11),

--how Assault Breaker compares in cost effectiveness to other weapons that could attack rear echelon armor (see pp. 11 to 15), and

--how Assault Breaker's development should be managed. (See p. 15.)

Other systems like the Army's Corps Support Weapon System and Multiple Launch Rocket System using a terminally guided warhead, and the Air Force WASP minimissile, are to be used to attack rear echelon reinforcements and are scheduled for fielding about the same time.

Analysis is needed to put in perspective the relative contributions to be anticipated from these systems in combat. This will require developing reliable cost and effectiveness data for purposes of comparison. Such data is not yet available. The choices may be influenced by such considerations as changes that may be needed in service force structures, the increased survivability

promised by the new technology that permits delivering munitions from standoff distances, the respective battle roles of the Army and Air Force, and funding constraints that are affecting the development and procurement of new weapons. (See pp. 13 to 15.)

Assault Breaker poses an unusual management challenge because

--it could involve changes in how to do the interdiction mission;

--it includes a proposal for a cooperative weapon system, where the Air Force owns the target acquisition system and the Army owns the strike weapon;

--it requires coordinating the Office of the Secretary of Defense, Army, and Air Force concepts on how the system should be developed and fielded; and

--the Office of the Secretary of Defense, which initiated the concept, lacks the resources to manage the acquisition of assets to implement this cross-service concept. (See p. 15.)

CONCLUSIONS

It is too early to assess whether Assault Breaker will fulfill its technical promise. The program includes new technologies involving medium-to-high risks. Proposals being considered which would postpone the start of Assault Breaker's engineering development by about 2 years provide an opportunity for more extensive testing in high risk areas before a full-scale development decision has to be made.

There are important reasons for closely monitoring and coordinating Assault Breaker's development. The subsystems involved are approaching the point where, if they are approved for engineering development, larger commitments of funds will be required. Assault Breaker, as presently conceived, may incorporate assets of both the Army and

the Air Force and should, therefore, involve the two services in the integrated testing of the subsystems. Funding the continuing development of the subsystems that make up Assault Breaker, making it available for integrated testing, and evaluating the competing Assault Breaker concepts, argue for establishing a more permanent organizational structure, with representation from the Office of the Secretary of Defense and the two services, to assume responsibility for the program's direction. DOD officials contend such action would be premature, considering Assault Breaker's current early stage of development. GAO believes the present arrangement of having a small group in the Office of the Secretary of Defense, supplemented by ad hoc committees to oversee a program of this magnitude, is insufficient.

RECOMMENDATIONS TO THE SECRETARY OF DEFENSE

GAO recommends that the Secretary of Defense improve the basis for investment decisions on Assault Breaker and competing programs by

--reviewing plans for the advanced development testing of Assault Breaker to assure that they will be sufficient to demonstrate the feasibility of the Assault Breaker concept before a decision is made on beginning full-scale engineering development;

--coordinating several DOD cost and effectiveness analyses of antiarmor weapons for attacking rear echelons to require similar scope, assumptions, and methodology to the extent practicable so that their relative contributions to combat effectiveness and their cost can be compared and conclusions drawn for the best combinations of weapons to procure; and

--establishing an office to centrally manage the development of the Assault Breaker.

GAO did not request official comments on this report because of the tight reporting deadline. Instead, a draft of this report was discussed with high level officials associated with management of the program to assure that the report is accurate and complete. Their points of view are included.

Contents

ABBREVIATIONS

CSWS	Corps Support Weapon System
DARPA	Defense Advanced Research Projects Agency
DOD	Department of Defense
ERAM	extended range antitank mine
GAO	General Accounting Office
MLRS	Multiple Launch Rocket System
NATO	North Atlantic Treaty Organization
OSD	Office of the Secretary of Defense
SADARM	sense and destroy armor

ABBREVIATIONS

SOTAS	Standoff Target Acquisition System
WAAM	wide area antiarmor munitions

CHAPTER 1

INTRODUCTION

Assault Breaker is the name given by the Department of Defense (DOD) to a concept to attack moving, rear echelon armor massed deep behind enemy lines. Presently, the only means for attacking these targets is by the use of manned, penetrating aircraft. The advantage of Assault Breaker is that it would permit attacking these targets with standoff weapons. Assault Breaker was conceived to obtain a uniquely high rate of kill at a much smaller risk and cost than present tactics permit. DOD officials believe Assault Breaker's fire rate could destroy in a few hours sufficient vehicles in Warsaw Pact reinforcement divisions to prevent their exploiting a breakthrough at the forward edge of the battle area. Two modes of delivering Assault Breaker munitions are being considered, ground-launched and air-launched missiles.

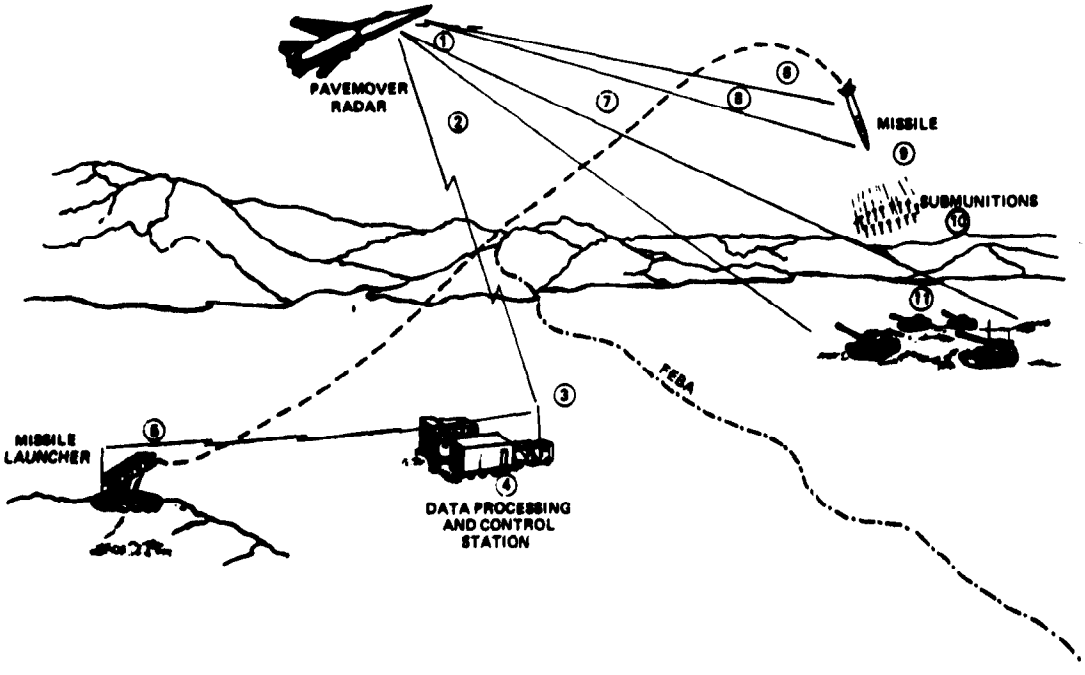
Assault Breaker involves the use of an airborne radar; airborne or surface launchers; strike missiles with submunition dispensers; self-guided submunitions that are dispensed over the target; and a communications, command, and control network to link the target acquisition, data transmission, and strike functions.

Figure 1 illustrates the sequence of operations for Assault Breaker. The radar aircraft orbits behind the forward edge of the battle area and (1) surveys a designated area. (2) Radar data are transmitted to a data processing control station on the ground where it is (3) processed and analyzed for potential targets. These data are (4) used by the battlefield commander to formulate engagement decisions. Once the engagement decision is made, the radar tracks the targets, and (5) missiles are launched. The missile (6) flies to the submunition dispense point. For moving targets, the radar (7) tracks the missile and target before submunitions are dispensed and (8) provides updated positions to the missile. At the dispense point, the missile (9) releases its submunitions over the target array. The submunitions then (10) acquire and (11) fly to the targets, and detonate their warheads.

Figure 1

Assault Breaker Ground-Launched Concept

Ground-Launched Missile; Ground-Based Command, Control and Communications

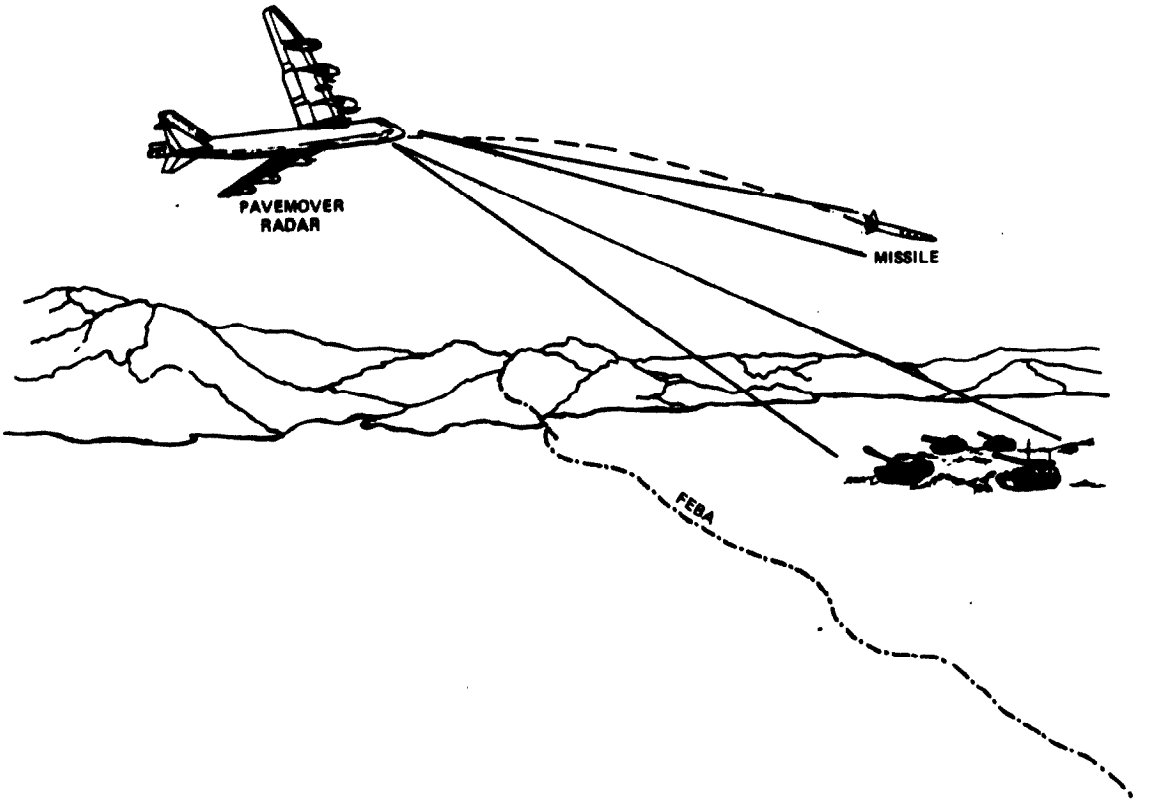


The air-launched version (fig. 2) contemplates using a B-52 or some other aircraft to launch the missile. The aircraft could also carry the radar and data processing and control station, which could provide a self-contained capability to acquire targets and to launch and guide missiles.

Figure 2

Assault Breaker, Air-Launched Concept

(Radar, data processing and command, control, and communications onboard airplane)



PROGRAM HISTORY

The Assault Breaker program dates from 1978, and from the start, its development has been under the direction of

DOD's Defense Advanced Research Projects Agency (DARPA). Several years before this initiative, the Army and Air Force had ongoing programs in development to attack rear echelon armor.

The Army has been developing a Standoff Target Acquisition System (SOTAS) to acquire distant moving targets for its artillery weapons. It is also studying the use of terminally guided submunitions for engaging armored targets.

The Air Force was employing a new technology for an airborne radar system to detect moving targets. This evolved into the PAVE MOVER radar system. It was also developing several wide area antiarmor munitions (WAAM) to be delivered by manned aircraft which would penetrate enemy defenses. These munitions were being designed to achieve a high kill rate.

Since the Assault Breaker program began, both services have proposed fielding standoff interdiction missiles with multiple conventionally armed submunitions. The Army proposes to field Assault Breaker as one part of a Corps Support Weapon System (CSWS). CSWS would replace the existing LANCE system and would include nuclear and, possibly, chemical warheads in addition to Assault Breaker conventional warheads. For a conventional antiarmor strike, CSWS would use the Air Force's PAVE MOVER targeting radar. Army assets like SOTAS might provide backup in instances where PAVE MOVER is engaged in other missions or otherwise unavailable. The Air Force proposes launching Assault Breaker missiles from B-52 aircraft and is considering using one of the Army missiles that would evolve from the Assault Breaker development effort.

ACQUISITION STRATEGY AND MANAGEMENT

To accelerate fielding the Assault Breaker weapon, DARPA started concurrent concept definition and advanced development. This concurrent phase is labeled the Assault Breaker "technology demonstration," and is scheduled for completion by mid-1982. During the technology demonstration phase, DARPA is directing development and testing is being carried out by the Army and Air Force developers. A joint executive committee, consisting of representatives from the Office of the Secretary of Defense (OSD), the Army, and the Air Force, is addressing broad policy issues. Another joint steering committee exists to plan for the services' follow-on full-scale development.

PROGRAM STATUS

The technology demonstration phase is adhering to a fairly strict schedule. Demonstration tests for the ground-launched concept are planned for completion in late 1981. Additional testing of air-launched missiles and PAVE MOVER radar will continue through mid-1982.

Schedules for follow-on development are uncertain. OSD and the Army are discussing 1983 as the earliest target for beginning full-scale development to provide more time for proving the concept's feasibility. The Air Force plans a full-scale development decision for its PAVE MOVER radar in March 1982.

FULL COST ESTIMATES NOT YET AVAILABLE

Estimates of total acquisition costs for an Assault Breaker capability are not available. How the capability will be fielded is still uncertain, and the services have not completed their estimates of how much of such a capability might be added to their force structures.

The services have made preliminary estimates for fielding a minimum capability to cover the two U.S. Corps fronts in the North Atlantic Treaty Organization (NATO). These estimates total about $5.3 billion in escalated dollars. These costs include the roughly $130 million DOD will have spent on the technology demonstration phase of Assault Breaker through 1982. Since the concept is still evolving, it is too early to estimate ownership costs with confidence.

The $5.3 billion cost estimate is broken down in the following table into the three programs that might be selected to implement the concept.

Cost Estimates for Assault Breaker Capability

System or component	Development	Production	Total
	------(dollars in millions)-------		
PAVE MOVER radar (quantity of 5)	$330	$ 180	$ 510
CSWS	795	3,430	4,225
Air-to-surface missiles (500 missiles)	300	90	390
Demonstration phase costs (advanced development)	130	-	130
Total	$1,555	$3,700	$5,255

OBJECTIVES, SCOPE, AND METHODOLOGY

We selected Assault Breaker for review because of its high potential cost, multiservice aspects, and accelerated development goals. Our recent reports related to the Assault Breaker capability and mission include: "The Army's Standoff Target Acquisition System--A Program Having Development Difficulties" (February 18, 1981, C-MASAD-81-2); "Building an Effective Antiarmor Capability in NATO" (Sept. 16, 1980, C-PSAD-80-28); and "Progress in Strengthening Interdiction Capabilities in the NATO Central Region" (July 26, 1979, PSAD-79-83).

The objectives of this review were to determine the program's status and identify the major management and technical obstacles to its development. We also sought to define its relationship to other armor interdiction weapons and to assess DOD development strategies.

Our primary sources of information were officials in OSD and the Departments of the Army and the Air Force having responsibility for the program. We discussed the program with them and reviewed OSD and service justification and position statements, program planning documents, internal memorandums, summaries of early subsystem tests, and preliminary analyses of system cost effectiveness. We also reviewed contractors' concept definition studies. DOD officials

with whom we met included representatives from the following offices:

OSD

--Office of the Deputy Under Secretary for Tactical Warfare Programs.

--Office of the Assistant Secretary for Program Analysis and Evaluation.

--DARPA, Tactical Technology Office.

U.S. Army

--Deputy Chief of Staff for Operations.

--Deputy Chief of Staff for Research, Development, and Acquisition.

--Deputy Chief of Staff for Program Analysis and Evaluation.

--Concepts Analysis Agency.

--Office of Test and Operational Analysis.

--Headquarters, Training and Doctrine Command.

--Research Development and Readiness Command, Headquarters, Missile Command.

U.S. Air Force

--Deputy Chief of Staff, Research, Development, and Acquisition.

--Deputy Chief of Staff, Operations, Plans and Readiness.

--Assistant Chief of Staff, Studies and Analysis.

--Electronic Systems Division.

--Armament Development and Test Center.

Because of tight reporting deadlines, we did not request official comments on this report. Instead, a draft of this report was discussed with high level officials associated with management of the program to assure that the report is accurate and complete. Their points of view are included.

CHAPTER 2

BASIC DECISIONS TO BE MADE BEFORE LARGE RESOURCES ARE COMMITTED

DOD has several major decisions to make in the next 12 to 18 months before committing large resources to Assault Breaker and related programs like CSWS and WAAM. The matters to be considered are

--whether the advanced development testing is sufficient to demonstrate the feasibility of the Assault Breaker concept before a decision is due to begin full-scale engineering development,

--how Assault Breaker compares in cost effectiveness with other interdiction systems, and

--how Assault Breaker should be managed.

FEASIBILITY TO BE DEMONSTRATED

Assault Breaker involves considerable new technology. The concept's feasibility depends on the successful development of a new generation of self-guided submunitions as well as new radar; submunition dispensers; and a command, control, and communications network. Assault Breaker has about 2 years of parallel concept development and advanced development remaining. How Assault Breaker and its components would be configured in the system to be fielded remains uncertain. Uncertainties and obstacles to the successful development of the major system components are discussed below.

Radar and platform aircraft

The airborne radar is the key to the Assault Breaker concept. The radar must: identify worthwhile targets, maintain track of target locations, simultaneously guide a number of missiles to separate target areas, and avoid detection and jamming of its data communication links. Because of the radar's key role, DOD expects enemy attacks and countermeasures against it.

Radar development problems to be solved include the ability to

--discriminate worthwhile targets from low payoff targets,

--operate in a realistic geographic and countermeasures environment, and

--simultaneously direct multiple missiles to targets.

The type of aircraft on which to mount PAVE MOVER, the number of PAVE MOVERs and aircraft to be acquired, and the aircraft's survivability still require study.

The aircraft's characteristics, such as maneuverability and altitude capability affect both performance and survivability. The Air Force recently ruled out using either the F-111 or TR1 aircraft. The C-130, B-52, and commercial-type jet aircraft are among the remaining candidates.

The number of radars and aircraft needed is uncertain. While the Air Force's existing cost estimate for PAVE MOVER is based on a given number of radars, preliminary DOD analyses and judgments suggest that a much greater number of radars and platforms may be needed.

DOD representatives believe that for Assault Breaker to be cost effective, the radar may be required to discriminate armored vehicles from lower value targets. This capability is not designed into the advanced development radar and is not part of DARPA's planned testing. In June 1980, an Army/Air Force working group concluded that risk is involved in developing this capability by the scheduled date for fielding PAVE MOVER, and lack of the capability could jeopardize the concept. Contractors are studying the technical feasibility of PAVE MOVER's achieving a capability to discriminate between vehicles.

The Air Force assesses development risk as medium to high for the radar's capability to operate against electronic countermeasures and in medium or heavy ground clutter. A May 1980 Army study described test conditions in the DARPA-Army-Air Force demonstration as benign, and suggested additional testing in a realistic environment.

Data processing and command, control, and communications

For the Assault Breaker concept to work, DOD must develop data processing equipment and software, and command, control, and communications that will provide target data and decisions near to real time so that missiles can be accurately directed against moving targets. Also, data communication links must be secure and jam resistant. These capabilites do not exist. Command, control, and

communications arrangements for Assault Breaker are undefined, and appropriate data links must still be developed. The three functions will be simulated rather than tested in the Assault Breaker demonstration.

Delivery missile and submunitions dispenser

The Army plans to establish a special task force in 1981 to manage the CSWS program during concept formulation and to evaluate alternatives like derivatives of the Multiple Launch Rocket System (MLRS), PATRIOT, and LANCE.

DOD has not formally analyzed and obtained Defense Intelligence Agency confirmation of the expected threat behavior if an Assault Breaker missile is fielded. The dispenser design and system performance are based on DOD's assumptions that it will find targets of enemy armor grouped in certain ways.

The Air Force holds open the option it would field a standoff missile with submunitions other than those developed for Assault Breaker. This could require a new dispenser design.

Submunitions

Development of cost-effective "smart" self-guided or target-sensing submunitions is another high risk part of the Assault Breaker program. According to OSD officials who are monitoring the program, test results will not be available for about 2 years. New generation fire-and-forget munitions using infrared or millimeter wave seekers are also planned for use with MLRS using a terminally guided warhead, the sense and destroy armor (SADARM) cannon projectile, and the Air Force's WASP minimissile. Considerable advanced development remains in these programs before the seekers' effectiveness can be validated.

Representatives of the Army's missile command have raised questions about how well these new generation seekers will have been tested in the planned Assault Breaker technology demonstration tests. A study made for the command concluded that planned testing will not be done in representative geographic, climatic, or countermeasure environments. The former head of DOD's triservice seeker committee stated that the main technical concern about the technology demonstration was the limited testing of seekers in representative environments. The Army is studying countermeasures and counter-countermeasures to these new generation seekers to satisfy its own concerns over how adequately it is addressing countermeasures to future fire-and-forget antitank sensors.

Limited test and analysis

The Assault Breaker technology demonstration provides for less than typical testing, analysis, and program planning than the services usually accomplish before a full-scale development decision. Recent OSD and Army discussions regarding possible deferral of Assault Breaker's fielding gives the Army an opportunity to do more planning, concept definition, and testing than DARPA had originally envisioned.

COST AND EFFECTIVENESS OF VARIOUS WEAPONS TO ATTACK REAR ECHELON ARMOR SHOULD BE COMPARED

OSD, the Army, and the Air Force have all started, or plan to start, cost and effectiveness studies on the various systems that they propose to use in interdicting armor. All the systems have as their purpose, the slowing of rear echelon reinforcements approaching the front lines. In addition to Assault Breaker, other systems in early development are being groomed to attack rear echelon armor, though at shorter ranges. Any of the systems selected for production would, according to present schedules, become available for fielding at about the same time.

The ability to strike deep with a weapon having the range of an Assault Breaker remains to be compared in cost effectiveness to simpler, shorter-range weapons like MLRS using terminally guided warheads. Some DOD officials believe that the cost effectiveness of using tactical aircraft for interdiction needs review, given their vulnerability to enemy air defense weapons and the high cost of aircraft, ordnance, and defense suppression systems.

New generation weapons and target acquisition equipment being developed for attacking rear echelon armor are described below.

WAAM

Like Assault Breaker, the WAAM program involves the development of self-forging fragment warheads and infrared or millimeter wave guidance systems. The total cost of this program is estimated to exceed $3 billion. The WAAM program includes two antiarmor concepts:

--A minimissile called WASP.

--An extended range antitank mine (ERAM).

WASP

The WASP minimissile, an aircraft-delivered weapon, is designed to independently acquire and track targets after launch. This program is estimated to cost over $2 billion.

ERAM

ERAM, an aircraft-delivered, target-activated munition, will consist of a sensor classifier and a self-forging fragment warhead packaged in a tactical munitions dispenser. According to the Air Force, it could defeat armored vehicles at extended ranges and is highly resistant to countermeasures.

MLRS

The Army's MLRS is another example of a system which may have some second echelon strike capability. The basic MLRS, now in a low rate production phase, is a vehicle-mounted rocket system which rapidly fires unguided rockets filled with unguided submunitions for attacking artillery, air defense weapons, and other light materiel or personnel targets. Its maximum range is much shorter than that envisioned for CSWS. Although the individual rockets are relatively inexpensive (about $8,800 each), the total program acquisition cost is over $4 billion because of the number of rockets (over 360,000) to be procured.

Because the basic MLRS has little capability against armored vehicles, the Army plans to develop terminally guided warheads for MLRS to defeat armored vehicles before their arrival at the central battle.

CSWS

The CSWS program seeks a replacement for the LANCE surface-to-surface missile. The Army intends for CSWS to have conventional, nuclear, and chemical roles. CSWS is intended to provide corps commanders with the ability to attack second echelon targets at ranges beyond the capability of cannons and rockets.

SADARM

The SADARM weapon uses an 8-inch artillery projectile to deliver three submunitions to an area above armor targets. Each submunition carries a millimeter-wave sensor and a self-forging fragment-kill mechanism. When fired, the

submunitions are to detect armor targets and then fire the self-forging fragment warhead.

Hypervelocity missile

The Hypervelocity missile is a small lightweight missile designed to travel over four times the speed of sound. It uses its high velocity at impact as a kill mechanism. Air Force studies have recommended the Hypervelocity missile as a high payoff weapon which should be pursued. This weapon could substantially increase aircraft firepower.

Some analysis will be needed to put in perspective the role that the above systems should be assigned and what an appropriate mix may be. The choices may be influenced by such considerations as service force structures, the increased survivability promised by the new technology that permits delivering munitions from standoff distances, the respective battle roles of the Army and Air Force, and funding constraints that are affecting the development and procurement of new weapons.

OTHER PROGRAM UNCERTAINTIES

Several other program uncertainties are still to be resolved.

Technology uncertainties

The Assault Breaker concept is complex. For example, it can be observed from figure 1 on page 2 that 11 steps have to be successfully accomplished in the ground-launched concept.

Good operational effectiveness and cost data are not yet available on the new radar and seeker technologies that Assault Breaker and other programs rely on.

Estimates of how Assault Breaker would perform in adverse weather and against the threat and countermeasures prevailing in a combat environment are at least a few years away. The Assault Breaker technology demonstration will develop only limited effectiveness data for a real battlefield environment.

Another major unresolved issue is the composition of Assault Breaker components and changes that its introduction may require in the force structure. The Army favors incorporating the Assault Breaker antiarmor function into its LANCE missile battalions at the same time it replaces and modernizes the existing LANCE hardware. The Army

maintains that this is the most economical way to field the capability, given the Army's funding and manpower constraints.

Army officials are concerned about the possibilities of having to rely on an Air Force asset--PAVE MOVER--as the radar for its antiarmor system because PAVE MOVER may be engaged in other missions when it is needed. The Army believes its SOTAS may provide the acquisition capability for moving targets.

The Air Force plans to use PAVE MOVER radar and associated command, control, and communications to direct tactical aircraft carrying antiarmor munitions to interdiction targets. The Air Force believes PAVE MOVER's precise guidance capability could enhance the survivability of its penetrating aircraft.

Lack of funds already affecting Assault Breaker goals

DOD officials cite funding limits as another major concern facing development of an Assault Breaker capability. Any analysis of the options available in choosing among the various weapon systems would have to consider funding constraints. These constraints, which are affecting the development and procurement of many weapon systems, will presumably weigh heavily on decisions about which systems to procure, and how many, for attacking rear echelon armor.

Army representatives expressed concern over problems it is having funding its modernization programs and cited affordability as a reason it has not given higher priority and funding to the ground-launched Assault Breaker. In dramatizing its budget plight, the Army points to numerous programs in its fiscal year 1982-86 funding plan whose funding has been reduced. The Air Force, too, has sustained cuts in its budget. The difficulty of funding new generation interdiction weapons will be exacerbated if the various programs adhere to currently projected schedules as Assault Breaker, WAAM, and MLRS using terminally guided warheads, and other systems are all scheduled for deployment at about the same time.

OSD officials suggest that the severity of funding limits and the costs of doing the interdiction mission may force basic force structure decisions on using either penetrating manned aircraft or standoff missiles. They support both capabilities, but the funding difficulties raised

during the fiscal year 1982 budget preparation have sparked discussion on whether both capabilities can be bought.

The original projected date for fielding Assault Breaker has slipped 5 years. DOD officials cite funding constraints as a reason they have not started or begun to plan various tests and analyses on system effectiveness.

Funding is not the only resource constraint

Other considerations, in addition to funding constraints, must be taken into account in weapon acquisition decisions. The Army cites its force level constraints as a consideration in determining weapons to be fielded. OSD officials cite basing constraints as a reason the United States cannot increase its force effectiveness by solutions that require more aircraft. They also cite manpower constraints as motivators to develop weapons like Assault Breaker.

PROGRAM COMPLEXITY AND DIVERSITY POSES AN EXTRAORDINARY MANAGEMENT CHALLENGE

Assault Breaker poses an unusual management challenge because

- --it could involve changes in how to do the interdiction mission;
- --it proposes a jointly operated weapon, where the Air Force owns the target acquisition system and the Army owns the strike weapon;
- --it requires coordinating OSD, the Army, and the Air Force concepts on how the system should be developed and fielded; and
- --OSD, which initiated the concept development, lacks its own acquisition management machinery to deal with the development, testing, and acquisition of assets to implement this cross-service program.

Up to now, OSD has attempted to manage Assault Breaker by establishing ad hoc executive and steering committees to include representatives from the Army and the Air Force. In the current technology demonstration and development phases, DARPA is controlling Assault Breaker's funding and making the program's management decisions.

CHAPTER 3

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

Assault Breaker could add a significant capability to the U.S. forces' combat effectiveness. However, it is too early to forecast success for the program because of the considerable new technology involved in the development of several subsystems. Some are in the categories of medium to high risk. Among these are the airborne radar, the self-guided munitions, and the new seekers.

The demonstration test schedule was originally developed to permit a full-scale development decision in late 1981. This tight schedule allows for only limited testing of several important program elements before the scheduled full-scale development decision. Proposals now under consideration which would postpone the start of full-scale development by about 2 years provide an opportunity for more extensive testing in high risk areas before a full-scale development decision has to be made.

There are several other interdiction weapons in development which are due to be fielded at about the same time as Assault Breaker--CSWS, WAAM, and MLRS using a terminally guided warhead--to name a few. Some may not equal Assault Breaker's potential range and rate of kill; however, all are expected to be capable of slowing or destroying rear echelon armor and may warrant consideration as part of a mix of weapons to achieve this objective. OSD, the Army, and the Air Force are studying the cost and effectiveness of these interdiction weapons. A comparison of the results could help determine the best use that can be made of these weapons working in combination. Some such analysis appears necessary because the cost of fielding them all, in the quantities planned, may be prohibitive.

An added complication is the fact that Assault Breaker will undoubtedly require the use of a combination of subsystems developed in both the Air Force and the Army. We believe the services would be more inclined toward a system over which they have total direct control.

There are important reasons for closely monitoring and coordinating Assault Breaker's development. The subsystems involved are approaching the point where, if they are approved for engineering development, larger commitments of funds will be required. Assault Breaker, as presently

conceived, may incorporate assets of both the Army and the Air Force and should, therefore, involve the two services in the integrated testing of the subsystems. Coordinating the funding decisions, integrated testing, and concept definition for the various subsystems that comprise Assault Breaker, argues for establishing a more permanent organizational structure, with representation from OSD and the two services, to assume responsibility for the program's direction. DOD officials contend such action would be premature, considering Assault Breaker's current early stage of development. However, we believe the present arrangement of having a small group in OSD, supplemented by ad hoc committees to oversee a program of this magnitude, is insufficient.

RECOMMENDATIONS TO THE SECRETARY OF DEFENSE

We recommend that the Secretary of Defense improve the basis for investment decisions on Assault Breaker and competing programs by

- reviewing plans for the advanced development testing of Assault Breaker to assure that they will be sufficient to demonstrate the feasibility of the Assault Breaker concept before a decision is made on beginning full-scale development;

- coordinating the OSD, Army, and Air Force cost and effectiveness analyses of antiarmor weapons for attacking rear echelons to require similar scope, assumptions, and methodology to the extent practicable so that their relative contributions to combat effectiveness and their cost can be compared and conclusions drawn for the best combinations of weapons to procure; and

- establishing an office to centrally manage the development of the Assault Breaker program.

(951564)

AN EQUAL OPPORTUNITY EMPLOYER

UNITED STATES
GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
U. S. GENERAL ACCOUNTING OFFICE

THIRD CLASS