REPORT BY THE
COMPTROLLER GENERAL
OF THE UNITED STATES

AERIAL FIRE SUPPORT WEAPONS: HOW USEFUL WOULD THEY BE IN A EUROPEAN CONFLICT?

D I G E S T

The effectiveness and survivability of aerial fire support weapons which are to assist ground forces in Europe could be seriously limited by the adverse battlefield conditions under which the weapons would likely be operating. More than $8 billion is expected to be spent during the next several years for these systems.

For its close air support role, the Air Force is producing the specialized A-10 attack aircraft which uses a 30-millimeter GAU-8 cannon and the Maverick missile. For its aerial antiarmor role, the Army is producing the AH-1S Cobra attack helicopter which uses the TOW 1/ missile. It is also developing the AH-64 advanced attack helicopter with the laser-guided Hellfire missile.

The Army and the Air Force anticipate major contributions from these aircraft in supporting ground combat operations from the air. Both aircraft incorporate advanced technology and, with the Hellfire and Maverick missiles and the GAU-8 cannon, carry formidable firepower with good tank-killing potential. (See pp. 3 to 8.)

Both the Army and Air Force agreed that in an intense European combat environment, the most critical battle scenario, aircraft survivability is increased by flying at low altitudes and maintaining maximum standoff distances from the targets. But these conditions make it more difficult to acquire targets and thus reduce the weapon systems' effectiveness. (See pp. 16, 17, and 19.)

The Army believes that the AH-64's effectiveness and survivability would increase

---

1/Tube-launched, optically tracked, wire-guided.

PSAD-79-65
JUNE 11, 1979

if targets could be acquired and designated by a laser beam from a remote airborne source like a scout helicopter. The AH-64's exposure to enemy defenses would then be less, since it would not be concerned with guiding the Hellfire to its target.

Army tests using existing helicopters showed that the time needed for scouts to transmit target locations to the attack helicopters and for attack helicopters to then sight the targets and fire their missiles could expose both aircraft long enough to draw enemy fire. Whether the weapons now in development could overcome these difficulties has not been tested. Officials in the Office of the Secretary of Defense apparently do not share the Army's view that a scout aircraft would significantly increase the AH-64's effectiveness. (See pp. 9 to 11.)

If, instead of relying on remote designation, the AH-64 were to use its own onboard laser designator, its chances of surviving in the European battle environment could be even less. The poor visibility generally prevalent in that theater, due to weather conditions and terrain obstructions, would limit the AH-64's standoff range. To be able to sight targets in these conditions, the helicopter would have to maneuver fairly close and run the risk of exposure to enemy air defense weapons. Therefore, while Hellfire's range is expected to afford it the luxury of standing off beyond the range of enemy defenses, the AH-64's opportunities to do so appear to be very limited. (See pp. 17 and 18.)

It appears that the A-10's effectiveness will also be limited--it can only perform under conditions of good visibility. Three versions of the Maverick missile--television, laser, and imaging infrared--can be carried by the A-10. The laser Maverick's failure to demonstrate its effectiveness recently caused the Air Force to delete funds for its procurement from its fiscal year 1980 budget. (See pp. 19 to 21.)

Despite its potential, the imaging infrared Maverick--the version preferred by the Air Force--has not shown much improvement over the laser and television Maverick missiles in terms of its use in close air support. The use of this missile might be increased if the A-10 could carry a forward looking infrared system to help acquire targets from standoff ranges during periods of reduced visibility. A terrain avoidance system would also appear useful for the A-10 when flying at low altitudes. However, these systems would add significantly to the A-10's cost. The Office of the Secretary of Defense believes that such systems would degrade rather than enhance the A-10's performance and availability for combat. Its reasoning is that making the A-10 more complex would increase its maintenance and reduce its availability for action.

The Air Force believes greater efficiency would be achieved if the A-10 were supported by an aircraft carrying a forward air controller as distinct from using a second attack aircraft to seek out targets. However, a new forward air controller aircraft would likely be vulnerable to enemy air defenses. (See pp. 12 and 13.)

These and other limitations point to a need to reassess the contributions that can realistically be expected from the AH-64 and the A-10 towards the support of ground operations, and to make future program actions by the Congress and the Secretary of Defense contingent on the results of such assessment.

RECOMMENDATIONS

GAO recommends that the Congress hold hearings to consider whether to

--fund the development of an improved A-10 to perform close air support at night and in adverse weather,

--continue funding the procurement of the A-10 in its present configuration, or

--discontinue further A-10 procurement.

GAO also recommends that the Secretary of Defense, before requesting AH-64/Hellfire procurement funds:

--Reassess the relative contributions that the AH-64/Hellfire and Cobra/TOW missile realistically can be expected to make in an intense European conflict towards the support of ground combat operations in terms of their operational and cost effectiveness, and consider the results of such assessment in future decisions affecting these programs.

--Confirm, through further testing in conditions simulating the European combat environment, the operational utility of scout and forward air controller aircraft and determine whether a common aircraft should be acquired to serve the needs of both the Army and the Air Force.

AGENCY COMMENTS

The Department of Defense did not concur with many of the report's conclusions and considers it of little value for decision-making. But nowhere in its comments did DOD address GAO's basic point--that the effectiveness of these weapons will be limited by operational constraints required to increase aircraft survivability. GAO believes the limitations on their effective use creates a need to reexamine these acquisition programs. (See pp. 25 to 27.)