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REPORT BY THE
COMPTROLLER GENERAL
OF THE UNITED STATES

THE ARMY'S AH-64 HELICOPTER AND HELLFIRE MISSILE RETAIN RISKS AS THEY ENTER PRODUCTION

D I G E S T

The Army's AH-64 advanced attack helicopter and Hellfire missile are now at a critical juncture--the transition from development into production. The AH-64's primary mission is to kill tanks with the laser-guided Hellfire. The helicopter's affordability was questioned in the Congress during the fiscal year 1983 budget hearings and is likely to undergo careful scrutiny again as future production increments are considered for funding.

There are no indications at this time that either the AH-64 or Hellfire programs should not continue on their present schedules. Some aspects of both programs, however, bear watching if they are to continue the progress they have made in the past year. The programs have benefited from the close personal attention of the Under Secretary of the Army, particularly through his efforts to contain cost growth and to oversee areas of production where uncertainties remain.

Essentially, the uncertainties are of two types. The principal contractors must overcome formidable production hurdles. Also, the government must complete testing and evaluation to verify the success of modifications made to certain critical components which earlier had exhibited some performance problems.

GAO undertook this review to evaluate the risks still facing the AH-64 and Hellfire upon entering production and the progress the Department of Defense has made in addressing these risks. (See pp. 1 to 4 and pp. 19 and 20.)

PRODUCTION UNCERTAINTIES REMAIN IN BOTH PROGRAMS

The prospects for producing the AH-64 and Hellfire within projected costs and schedules will


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become more evident once early production experience is obtained. At present, there are several unknowns. Hughes Helicopters, Incorporated, the AH-64 prime contractor, is faced with starting up a new assembly plant in Mesa, Arizona, and must manage the flow of sophisticated aircraft components from the many subcontractors to the new plant. This must be accomplished against the background of the contractor's tight cash flow position. Hellfire has some production uncertainties as well.

Martin Marietta Aerospace, which will produce the Hellfire seeker, planned to capitalize on its production experience with the seeker for the laser-guided Copperhead projectile since the Hellfire seeker will be produced in the same facilities. However, the contractor ran into serious problems in producing the Copperhead seeker, and that program has been terminated.

Defense officials have closely managed the production aspects of both programs as these uncertainties have become better understood. Indeed, important progress has been made during the past year. Hughes Helicopters reports that construction of the new facility is 2 months ahead of schedule and that the firm has had no difficulty in hiring the skilled people needed for the facility. Martin Marietta officials are confident they can correct the problems experienced with Copperhead and they have located a management team at the Hellfire seeker production facility to ensure that Hellfire's production goes smoother. (See pp. 6 to 8.)

ARMY CONSIDERS PROVISION FOR PRODUCTION RISKS UNNECESSARY

AH-64 costs have increased substantially since September 1981 when the procurement of 536 helicopters was estimated to cost $4.8 billion, or $9 million per unit. Because of these increases, which raised some doubts in the Congress as to the weapon's affordability, the Army reduced the number of helicopters to be procured from 536 to 446. Procurement costs for 446 helicopters are now estimated to be $6.15 billion, or $13.8 million per unit.

Included in this estimate is $528 million the Army added to cover potential production risks.

In March 1982 the Army decided that based on successful price negotiations with the AH-64 prime contractor for the first increment to be purchased, the $528 million of production risk money was not needed to cover the balance of the production run. Instead, the Army plans to use this money to buy more AH-64s, subject to congressional approval. (See pp. 5 and 6.)

DEVELOPMENT EFFORTS WILL CONTINUE CONCURRENT WITH INITIAL PRODUCTION

Several important tests and evaluations to prove out new or redesigned components on the AH-64 and Hellfire will not be completed until after initial production has begun. The November 1982 flight test results of the AH-64's modified target acquisition and designation sight are still being analyzed. Additional flight testing is scheduled in early 1983 to evaluate the performance of the sight's newly redesigned electrical components. Of several planned Hellfire modifications, perhaps the most significant is the development of a new motor which will generate less smoke than the current motor. (See pp. 14 to 18.)

ADDITIONAL QUANTITIES OF HELLFIRE BEING CONSIDERED

In December 1981 the Army reported that it planned to increase Hellfire quantities from 24,600 missiles to 35,756 missiles, increasing total estimated procurement costs to $1.71 billion. Quantities of missiles to be procured are likely to increase further since the current quantity excludes approximately 10,000 missiles needed for testing and training and because missile consumption rates have been shown in recent studies to be higher than anticipated. (See pp. 8 and 9.)

KEY QUESTIONS TO BE ANSWERED REGARDING LOGISTIC SUPPORTABILITY

High operational availability for the AH-64 will depend on how well the aircraft's onboard fault detection system and ground test station can isolate faulty components and subcomponents

for removal and replacement. The fault detection system has yet to be thoroughly tested with all sections of the aircraft. The main question concerning the test station is whether it can operate practically and reliably in a field environment. (See pp. 10 to 12.)

RECOMMENDATIONS

In view of the production uncertainties and tests and evaluations that remain and the possibility that further program cost growth may not be avoidable, GAO recommends that the Secretary of Defense withhold approval for a program quantity increase above the currently planned procurement of 446 AH-64 aircraft. The Secretary should wait until sufficient actual production experience permits establishing a credible program cost estimate and a conclusive determination is made that the risk money will not be needed for contingencies. GAO believes this determination will be possible before the first production increment is completed.

GAO also recommends that the Secretary of Defense, before approving future funding requests for higher production rates of the AH-64 and Hellfire, weigh the progress made in demonstrating production capabilities and overcoming technical problems.

GAO further recommends that the Secretary of Defense direct the Army to

--develop firm Hellfire quantity requirements, including those needed for testing and training, and have their cost reflected in the total program cost and

--have an Army test and evaluation agency conduct realistic operational testing of the automatic test station and evaluate the results before its fielding.

AGENCY AND CONTRACTOR COMMENTS

The Department of Defense provided GAO with official oral comments. Defense officials believe production and development risks in both programs to be small. Consequently, they

maintain that the money set aside for production contingencies is no longer needed for that purpose.

Two prime contractors also commented on the report. Hughes Helicopters officials stated that regarding the tight cash flow situation, they have increased available funds through additional credit. Also, they noted that the drop in the prime lending rate should ease cash flow requirements. Martin Marietta officials stated that while Hellfire is a more sophisticated system than Copperhead, it should be easier to rework on the production line. Thus, they believe they can largely prevent the production bottlenecks that Copperhead experienced.

Whether the AH-64 and Hellfire can be produced for the costs and within the schedules now being projected requires, in GAO's opinion, some production experience sufficient to demonstrate the contractors' production capabilities. Consequently, GAO believes that the $528 million set aside for production contingencies should be retained for that purpose and should not be used to procure additional aircraft until cost and schedule projections can be made based on demonstrated performance.