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REPORT BY THE
COMPTROLLER GENERAL
OF THE UNITED STATES

STINGER POST AIR DEFENSE MISSILE: --POTENTIAL PRODUCTION PROBLEMS --PLANNED IMPROVEMENTS

D I G E S T

The Army has just completed development of the Stinger POST air defense missile, which provides better performance in coping with certain threats than an earlier version of Stinger now in production. Stinger POST is portable and shoulder-fired and uses the same airframe, motor, and warhead as the existing Stinger missile. Stinger POST's improved performance is due to its use of infrared and ultraviolet detectors to acquire and home-in on enemy aircraft--a new seeker referred to as the passive optical seeker technique (POST).

The entire Stinger program encompasses the development and production of about 50,000 missiles of which 40,000 will have the POST seeker. The reported estimated program acquisition cost is about $4.3 billion. (See pp. 1 and 2.)

Production uncertainties exist which could significantly affect program cost and delay procuring the quantity of missiles desired. The uncertainties relate to the difficulty of producing the ultraviolet detector and other critical seeker components in sufficient quantities to permit a high rate of production. The manufacturing processes tried so far have produced very low yields of high quality materials and components. Unless the yields can be increased, the quantity of missiles the Army hopes to obtain will cost more and take longer to produce. Consequently, the Army has awarded a contract to refine the processes going into the manufacture of high quality cadmium sulfide crystal, and ultraviolet detectors produced from the crystal. Also, the Army will try to effect more economical production of microelectronic chips and printed circuit boards in a production proofing phase (to validate the adequacy of production technology) to begin in March 1983. The success of these efforts is critical to full-scale production of the seeker.

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Stinger POST's production will begin at a low rate with the award of the first production contract in April 1984. The Army plans to award a full-scale production contract in July 1985 even though production proofing will not be completed until July 1986. The Army's rationale for beginning full-scale production before this effort is completed is based on the expectation that production processes will have been sufficiently refined. (See pp. 4 to 6.)

IMPROVEMENTS PLANNED TO OVERCOME LIMITATIONS

Although Stinger POST surpasses the existing Stinger in performance, the Army is planning several improvements to overcome certain limitations. The Army expects these improvements to add $422 million to the program acquisition cost. Two of the improvements--the reprogrammable microprocessor and the night sight and ranging device--are particularly important. Although the Army's Training and Doctrine Command recommended that these improvements be initiated in fiscal year 1983, their development is not scheduled to begin before fiscal year 1985 due to funding difficulties. By the time they complete development, Stinger POST will be 2 or 3 years into high-rate production with about 45 percent of the missiles already under contract. GAO believes the Army should reconsider accelerating the start of these two improvement programs. (See pp. 7 to 11.)

RECOMMENDATIONS

GAO recommends that the Secretary of Defense direct the Army to determine that satisfactory progress has been made toward resolving Stinger POST's production problems before committing the system to full-scale production.

Considering the benefit that could result from the proposed Stinger POST improvements, GAO also recommends that the Secretary of Defense direct the Army to assess the desirability of accelerating the improvement programs.

AGENCY COMMENTS

The Department of Defense provided GAO with official oral comments. Defense officials

agreed with GAO's conclusions and recommendations. They are confident the Army can overcome the production problems before full-scale production begins, under the program they have planned for refining the cadmium sulfide production processes, as well as in the production proofing effort. Defense officials stated the Army would consider implementing the product improvement program at the Stinger POST production decision meeting scheduled for January 1983.

GAO's review of the Stinger POST program is part of its annual series of reviews of major weapon systems designed to help the Congress in its consideration of the Department of Defense budget.