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REPORT BY THE
COMPTROLLER GENERAL
OF THE UNITED STATES

THE ARMY'S REMOTELY PILOTED VEHICLE SHOWS GOOD POTENTIAL BUT FACES A LENGTHY DEVELOPMENT PROGRAM

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D I G E S T

The Remotely Piloted Vehicle (RPV) system shows promise of significantly enhancing the Army's combat capability. Its development has been slowed, however, by major technical difficulties and by funding uncertainties created by competing demands of higher priority programs on the Army's budget.

RPV is designed to acquire targets for artillery, to designate targets for precision-guided munitions, for reconnaissance, and for other functions. The system is planned to extend the attack capability of division commanders beyond the forward edge of the battle area to the full range of artillery weapons where ground-based systems cannot see and where the risk to piloted observation aircraft is high because of the enemy's sophisticated air defense systems. The system consists of an air vehicle, a ground control station, a remote ground terminal antenna, launch equipment, recovery equipment, and support equipment.

The latest program cost estimate is approximately $1.6 billion. The system still faces a lengthy development and testing program. (See pp. 1 to 4 and 10 to 14.)

GAO undertook this review to evaluate and assess the Army's prospects for successfully deploying its RPV system in the light of important program decisions to be made shortly by the Secretary of Defense and the Congress about financing its continuing development.

TECHNICAL PROBLEMS TO BE SOLVED

Technical problems with two key subsystems--the data link and the mission payload--have slowed RPV's development. In both cases, problems resulted primarily from the difficulty of fitting the electronic equipment into the small air vehicle which is designed to stringent size and weight limitations. The Army

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has modified its program development plan in an attempt to minimize the effects of these technical difficulties by developing two additional data links, one for interim use during testing and another as a possible alternate should the data link originally planned to go into production prove unable to overcome its technical difficulties. The alternate data link is not as capable as the original one. (See pp. 5 to 8.)

Development of the mission payload subsystem has been hindered by difficulty in designing the software and problems with a key component, the composite optics. (See pp. 8 and 9.)

Difficulties in overcoming technological problems and indecisiveness about funding the program have prolonged RPV's development. Testing has been limited primarily to the individual components. Integrated testing is 2 years away. Yet, RPV shows potential for good survivability, and some planned system enhancements raise the prospects of overcoming some battlefield conditions that threaten to lower its effectiveness. (See pp. 15 to 20.)

Some decisions have to be made soon, and program stability is a major concern. Consideration should be given to the likelihood of when RPV technology problems can be resolved and whether their resolution can be expedited by the infusion of additional funds. If the research and development problems are deemed solvable, RPV will need a firm commitment to continued funding support so that its full potential can be realized and its scheduled initial operational capability achieved in an efficient manner. The Congress has expressed its view. The House Defense Appropriations Subcommittee reported in November 1981, shortly after the Army announced its proposed major reductions to the RPV program, that it believes the RPV technology should be vigorously pursued and adequately funded to ensure that the opportunities for early field testing can be provided.

RPV's success largely depends on the progress achieved in miniaturizing the data link. However, in addition, the system as a whole still requires considerable development and testing. Its progress through the testing phase, if the program goes forward, should be carefully monitored and evaluated periodically.

RECOMMENDATIONS

GAO recommends that the Secretary of Defense direct the Army to

--determine whether the RPV program's progress is such that it should command sustained funding levels that would permit achieving its initial operational capability on schedule;

--budget for and pursue the development of system enhancements, if progress is adequate, to overcome some of the potential operational limitations of the system; and

--ensure that the testing program is structured so that operational tests demonstrate both individual subsystem and total integrated weapon system performance.

GAO further recommends, if RPV progress is such that it does not command high sustained funding, consideration be given to discontinuing the program or reorienting it to a low-level research and development program.

VIEWS OF AGENCY OFFICIALS

GAO did not request official comments on this report because of the need to issue it in time for congressional consideration of the fiscal year 1983 defense budget. GAO did, however, discuss a draft of this report with high level officials associated with management of the program and they agreed with the facts presented. Their views are incorporated as appropriate.