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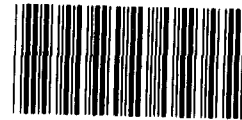
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STATEMENT OF
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BEFORE THE
COMMITTEE ON GOVERNMENTAL AFFAIRS
UNITED STATES SENATE



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Dear Mr. Chairman:

I am pleased to be here today to discuss our views on the Army's acquisition of the Division Air Defense Gun (DIVAD), also known as the Sergeant York and certain aspects of the Department of Defense's acquisition decision-making process.

Specifically I will discuss our observations on the recently completed Design Verification Testing and the Secretary of Defense directed Limited Operational Test of the DIVAD. I will also discuss our concerns with the acquisition strategy employed in the DIVAD program. Finally, I will address the adequacy of test information made available to the Secretary of Defense and the Congress.

TESTING

In our prior reports we commented on several tests of the Sgt. York air defense gun. These included

- a check test begun in November 1981 which indicated that deficiencies and short comings disclosed during source selection were not overcome as required, and
- a 7 month reliability, availability, maintainability and durability (RAM-D) test which was cancelled because prototype deficiencies rendered it unsuitable for testing by the Army's development testers and evaluators. A similar test with reduced scope was conducted jointly by the project manager and contractor.

In our most recent report¹ we noted that test and evaluation agencies will not have the opportunity to test the systems reliability and maintainability until after initial production units become available. During our current effort we have been reviewing system testing which has been conducted on production fire units. This testing includes a design verification test and a limited test. It should be noted that some of this information is based upon preliminary assessments since in some cases final reports have not yet been prepared.

Design verification test (DVT)

This test was begun in March 1984 and is not yet complete. It was interrupted for about 1 month to accommodate limited testing. The design verification test which was not in the original test program, is a combined government/contractor test on production fire unit #1. The contractor's testing seeks to prove-out the systems meeting 26 contract performance specifications. The government portion of DVT seeks to assess systems performance characteristics such as: identification friend or foe (IFF), anti-radiation missile (ARM) defense capability and performance in an electronic counter measures (ECM) environment. The government testing has been conducted by the Army's Test and Evaluation Command (TECOM) and is to be evaluated by the Army's Materiel Systems Analysis Activity (AMSAA). The Operational Test and Evaluation Agency's (OTEA) roles include: reviewing TECOM and contractor test plans and monitoring and assessing the government portion of DVT.

¹The Army Should Confirm Sergeant York Air Defense Gun's Reliability and Maintainability Before Exercising Next Production Option (GAO/MASAD-83-8, Jan. 27, 1983)

The contractor's assessment of their testing indicates the following results in meeting the '26 contract performance specifications:

18	specifications	- met
3	"	- not met or only partially met
<u>5</u>	"	- analysis of test results incomplete
26		
<u> </u>		

Some of the open areas not yet met include: target classification with search radar, system reaction time, and hit probability against non-maneuvering aircraft. A complete evaluation of the contractor's assessment has not yet been completed by the Sgt. York project office.

In the government portion of DVT 10 performance characteristics were assessed with the following results:

5	passed
1	failed
1	being reevaluated
<u>3</u>	no information
10	
<u> </u>	

The Army Materiel Systems Analysis Activity has not fully evaluated the DVT results. Their overall impression expressed to us is that they were generally pleased with the results and that they were better than or equal to the prototype performance. Two problem areas that were noted involved probability

of hit and anti-radiation missile performance in an ECM environment. Two design problems noted were track radar locking and loss of search radar under certain conditions.

We have no information yet on OTEA's assessment of DVT.

Limited Test

A limited test was conducted at Ft. Bliss, Texas using three production fire units. This test was not in the original test plan but was performed at the Secretary of Defense's direction. Its objective was to test the Sgt. York in as close an operational test environment as possible. It was driven by concern within some elements of the Office of the Secretary of Defense about the lack of demonstrated operational capability of Sgt. York production fire units. There was some initial Army concern about characterizing this test as an operational test because some operational testing elements were missing, such as: trained troops, doctrine and tactics, and support equipment and spares.

The limited test was characterized as a quick short look at the systems operational suitability to engage aircraft/ground targets, mobility in accompanying ground forces it should protect and inter/intra system communication.

The test was conducted during a 5 day period, and was preceded by crew training, a pilot test and maintenance. The contractor provided test support, such as maintenance, repairs and data reduction. The Operational Test and Evaluation Agency was responsible for planning, conducting, and assessing the test. Some of the areas assessed included: search, track, and multiple target performance, performance against electronic counter measures; kill performance, ground target firing and identification friend or foe. Some of the positive OTEA test observations included:

- the crew functioned well, especially considering their limited training,
- the IFF appeared to function well,
- successful hitting of moving targets,
- successful firing in a benign environment, and
- demonstrated ability to search, detect, track and engage multiple air targets in both benign and ECM environments.

Some of the shortcomings observed were the system's:

- ability to keep up with M60 tanks,
- performance in an ECM environment at longer distances and
- reliability and maintainability.

Future test plans

Upcoming testing for the Sgt. York includes:

- Initial production testing (IPT) - a 6 month test involving five fire units. It will be conducted by the Army with contractor support. Its purpose is to determine if production fire units conform to system specifications.

- Project Manager Maturity Test - to be conducted concurrently with IPT under the project manager's control. It will be used to test the nuclear, biological and chemical protection aspects of the system.

- Comparison test I - a 6 month government test to be conducted in July - December 1985. Its purpose is to evaluate correction of deficiencies/shortcomings disclosed during DVT and IPT, as well as detect quality deficiencies and assess reliability, availability, and maintainability.

- Follow-on evaluation I - an operational test scheduled in early 1986.

ACQUISITION STRATEGY

In our past reports on the Sgt. York gun system, we have commented on the Army's unique acquisition strategy. Our early concerns involved the limited amount of testing which would be addressed before the award of the production contract. This included the fact that some important development testing, including durability tests, would not be addressed until after the production contract was to be awarded. Also, we were concerned

over the extent to which the Army's development test and logistics agencies would be able to assess test results before the production decision. We also reported on program risks inherent in the "skunk works, hands-off" strategy to be employed. This was a strategy under which the two competing development contractor's would be given latitude in designing a system to meet the Army's requirements with a very minimal government management and surveillance over those contractors during the initial 29-month development period.

These risks involved

- Serious development problems may be detected too late to provide time for correction.
- Solution of development problems may be delayed because of the rigid schedule and management provisions of the contract.
- Information on the progress of the development program may be inadequate to justify funding needs to the Office of Management and Budget, the Office of the Secretary of Defense, and the Congress.

In our last review, we reported that until the acquisition strategy had run its course, an assessment of its success or failure would be premature.

In our current review, which is still on-going, we are concentrating on system maturity and testing and production deliveries. We have, however, observed extensive management and

day-to-day involvement by the Army in all aspects of the program. The system contractor's responsibilities, in terms of program decisions, are primarily controlled by the Army's formal Phase II multi-year development-production contract, awarded in May 1981 and directions given by the Army's project office. This office is supported by the Army's procurement activity and other technical components of the Army's Munitions and Chemical Command. In addition support is provided by, or responsibilities delegated to, other Army technical organizations such as its Materiel Systems Analysis Activity, Operational Test and Evaluation Agency, and Test and Evaluation Command. All of those elements are involved in the decision-making process.

The program is still based on concurrent development-testing and production. Initial production units have been, and are being, delivered. As mentioned earlier much testing is currently going on or planned in the near future. However, due to the late deliveries of the initial gun systems, and changes in test plans from the original strategy, including the addition of tests not originally planned, there is less concurrency and more test information available now than would have been under the program as originally conceived.

ADEQUACY OF TEST INFORMATION
PROVIDED TO DOD AND THE CONGRESS

As you know, Mr. Chairman, at your request we have been looking at the reporting process for operational test results in the Department of Defense. More specifically, we looked at the adequacy of operational test and evaluation data contained in the Congressional Data Sheets. Our review is about complete and we are preparing our report to you.

With respect to the Army we have found that the Data Sheets we reviewed omitted certain information on testing limitations and safety related deficiencies that should have been included. For example, to demonstrate the durability and reliability characteristics of the Sergeant York, a test was planned to fire 15,000 rounds of ammunition and to travel 4,000 miles. Because of time limits, only about 3,600 rounds were fired and due to frequent subsystem failures the weapon traveled less than 300 miles. Rather than indicating that the testing was the minimum required to address specific critical issues the Data Sheet noted only that the number of events conducted were less than planned.

Contributing to the inadequacy of the reporting of test results in the Army is a condition which we reported on last February². We found that several Army groups were performing test and evaluation on weapon systems and the results were being reported piecemeal with no one responsible for interpreting the overall cumulative effect of the test results. In response to our report the Army has started a pilot program in which its Operational Test and Evaluation Agency will consolidate the various test results and provide an overall evaluation. This should improve the quality of test and evaluation information being reported to acquisition officials.

This concludes my prepared testimony. I would be happy to answer any questions you might have. Thank you.

²The Army Needs More Comprehensive Evaluations to Make Effective Use of Its Weapon System Testing
(GAO/NSIAD-84-40, Feb. 24, 1984)