



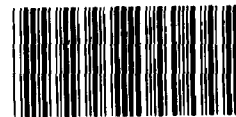
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UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

PROCUREMENT, LOGISTICS,  
AND READINESS DIVISION

JAN 23 1982

General Donald R. Keith  
Commanding General  
U.S. Army Materiel Development  
& Readiness Command



117352

Dear General Keith:

Subject: Potentially Wasteful Procurements of Army  
Calibration and Support Equipment (PLRD-82-37)

On April 3, 1981, we reported to Chairman, Subcommittee on Defense, Committee on Appropriations, House of Representatives, on our review of allegations of improper procurements by the U.S. Army Test Measurement and Diagnostic Equipment Support Group formerly the Army Metrology and Calibration Center (PLRD-81-16), and indicated our plan to pursue several other aspects of the Support Group's calibration activities that appeared to warrant further examination. One of those aspects involved examining the methods and procedures followed in determining and validating calibration and support equipment requirements.

FINDING

We found that the Army procured or initiated plans to obtain equipment before developing formal requirements documents, considering all available assets, and developing essential plans and workload data. As a result of prior unvalidated requirement determinations and budget cancellations, the Army has on hand or could be initiating plans to purchase a number of trucks, air conditioners and generators that may not be needed.

BACKGROUND

In our April 1981 report we recommended that the Secretary of Defense direct the Secretary of Army to: (1) develop accurate workload data on field Army calibrations because reliable data was needed to validate equipment requirements, (2) reexamine equipment capabilities to determine the extent to which automated equipment can replace manual equipment in field Army calibration units, and (3) conduct an independent hardware demonstration to establish the cost effectiveness and productivity increases that may be achieved through automating field Army calibration functions.

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In April 1981, the Secretary of the Army directed the Army's Inspector General, to conduct an investigation to determine the facts and circumstances related to the allegations and asked the Secretary of the Air Force to assist by conducting a separate and independent assessment of technical and selected policy aspects related to the same allegations.

On November 5, 1981, the Committee on Governmental Affairs, United States Senate held hearings and took sworn testimony from those persons having direct knowledge or responsibility for the events under study. The two key witnesses were Mr. Loebe Julie, President, Julie Research Laboratories (JRL) Inc., and the Honorable James R. Ambrose, Under Secretary of the Army.

In summary, the Under Secretary stated that the Army recognizes that an adequate data base and economic analysis will be needed to arrive at satisfactory decisions concerning requirements and procurement specifications for calibration equipment. He also stated that estimating precise economic gain to be realized from automating requires a site-by-site analysis because workloads vary considerably from one site to another. In specific response to the issue of how much can be saved through automation, the Under Secretary stated that the Army does not yet have an adequate data base from which to make acceptable cost savings analyses. The Under Secretary announced that the Army plans an intensive review of the total test, measurement and diagnostic equipment functions covering

- present regulations and provisions to ensure full, competent advocacy and execution of TMDE concepts, equipment acquisition, and performance monitoring;
- the most appropriate way to serve the field calibration and repair function, i.e., either fixed base or mobile units;
- how the Army can verify the operational readiness of primary equipment and systems affected by calibration and maintenance; and
- how the Army can eliminate obsolete TMDE from its inventory.

The Under Secretary indicated the results of the review and an implementation plan for any changes that may be needed is planned to be presented to him by March 15, 1982.

#### OBJECTIVE, SCOPE, AND METHODOLOGY

Our objective was to examine the methods and procedures followed by the U.S. Army Test Measurement and Diagnostic Equipment (TMDE) Support Group in validating requirements for the procurement of calibration and repair sets and associated supporting equipment. We examined the concept study which was

the basis for combining calibration and repair operations. We also examined procurement plans, development plans, budget documents, contracts, requisitions and related documentation directly pertinent to our objective. We also interviewed responsible management officials, procurement officials, and technical personnel having direct knowledge of the calibration and repair program. The locations providing information used in the preparation of this report are:

Office of Assistant Secretary of the Army (Materiel Development and Acquisition) Pentagon, Washington, D.C.

U.S. Army Materiel Development and Readiness Command (DARCOM) Alexandria, Virginia

The U.S. Army TMDE Support Group, Huntsville, Alabama

95th Service Company, Huntsville, Alabama

Letterkenny Army Depot, Chambersburg, Pennsylvania

Tank-Automotive Command (TACOM), Detroit, Michigan

Troop Support and Aviation Materiel Readiness Command (TSARCOM), St. Louis, Missouri

#### REQUIREMENTS NOT VALIDATED

The U.S. Army TMDE Support Group (formerly the Army Metrology and Calibration Center) procured and/or alerted other procuring commands to plan and budget for (i.e. ordered) equipment before developing valid requirements, considering all available assets, and developing essential plans and workload data. As a result of the above and subsequent budget cuts, the best available Support Group data information indicates that:

--19 on-hand vans, costing about \$2.2 million and 9 on-order vans which could cost about \$1.8 million may be excess to the Support Group's stated requirements (see appendix I);

--47 on-hand vans, costing about \$5.5 million may not be needed until after fiscal year 1985 (see appendix II);

--66 air conditioning systems and 79 electric power generators, ordered at a cost of about \$2.2 million are either excess to current requirements or may not be needed until after fiscal year 1985 (see appendix III); and

--41 electric power generators required to power calibration equipment during contingency situations have not been purchased (see appendix IV).

Although there are established Army management policies and procedures (i.e. required operational capability documents and basis of issue plan) for the acquisition of non-developmental equipment items, such as calibration and related support equipment, the Support Group did not follow them. As a result, the Army lacks basic data needed to make sound budgeting and requisitioning decisions on planning, directing, and controlling the calibration and repair program.

Our finding is quite similar to the conclusion of Army Under Secretary Ambrose who testified that an adequate data base and economic analysis will be needed to make satisfactory decisions on requirements and procurement specifications. The Army intends to get the data which, as of November 5, 1981, it did not have.

Concept study forms  
an inappropriate  
basis for requirements

The report entitled, "Department of the Army Concept Study for Improved Army-wide TMDE Calibration and Repair Operations" was published in March 1977 and approved in November 1978. The concept study recommended that calibration and repair operations of the field Army be consolidated under the overall management and control of DARCOM. Within DARCOM, this field Army support mission was assigned to the U.S. Army TMDE Support Group. The only exception was the Army National Guard, which kept operational control of its TMDE support capability.

Based on data derived from the March 1977 concept study, the Support Group estimated their total calibration and support equipment requirements. An August 1978 worksheet used by the Support Group to assess their equipment needs shows that these estimates included equipment for both active Army and the Army National Guard. With the addition of equipment for war reserves the concept study estimates became the total planned acquisition objective for the new consolidated mission. The concept study estimates were also the basis for procurement plan submissions and subsequent procurement actions.

The concept study, however, did not represent a requirements document or valid basis for equipment purchases. The concept study presented an implementation plan which called for a detailed assessment of equipment on a location-by-location basis after Army approval of consolidation. The sequence of events and actions set forth in the concept study's implementation plan are as follows:

1. Obtain Department of the Army approval of the concept and establish a task group to begin implementation.
2. Realign the major commands and the Support Group for managing the mission changes.

3. Activate task subgroups utilizing Support Group personnel.
4. Assess personnel and equipment requirements by location, including a determination of the availability of existing equipment and the type and quantity of equipment to be purchased.
5. Rewrite regulatory publications.
6. Prepare and submit a budget.
7. Develop training.
8. Prepare and submit organizational, personnel, and equipment plans for approval.
9. Determine optimum locations for fixed and mobile operations.
10. Initiate procurement of equipment.
11. Establish support agreements.
12. Staff Army regulations and publications.
13. Initiate assistance to managers for establishing operations.
14. Activate training.
15. Complete activation of operating units.

As shown above, the procurement of equipment was placed as the 10th step in an orderly sequence of actions and events and followed Army approval of the concept study and site-by-site analysis of equipment requirements.

Procurements initiated prematurely

The Support Group initiated procurement actions without accurate knowledge of how much to buy and where equipment would be placed.

In addition to the steps identified in the Concept Study Implementation Plan, Army Regulation 1000-1, "Policies for Systems Acquisition," and implementing regulations provide for Army approval of a "Required Operational Capability" (ROC) document and "Basis of Issue Plan" (BOIP) before authorizing equipment purchase. A ROC document develops the need for a new capability including operational and organizational concepts and essential characteristics for using the equipment. BOIPs develop equipment requirements by organization and provide commands responsible for

buying equipment, verification that the equipment to be purchased is properly authorized.

When consolidation was approved in November 1978, the Army directed DARCOM to further assess its procurement plans for calibration equipment. A December 1978 message prepared in conjunction with consolidation approval directed DARCOM, with the cooperation of other major commands, to prepare and submit for Department of Army approval reorganization plans which identified

--proposed structure of activities under the consolidated reorganization,

--calibration and repair equipment to be transferred from losing organizations, and

--procurement plans for additional equipment to include plans for using existing equipment toward calibration and repair sets.

The Support Group initiated procurement actions or submitted acquisition requests before reorganization plans, a ROC, and BOIP were finalized and approved. Support Group officials told us that procurements were initiated early in order to meet implementation milestones and that initially they believed higher-level Army offices had exempted the requirement for a ROC and BOIP. At the conclusion of our review in December 1981, the requirements and planning documents were in process and expected to be approved.

#### CONCLUSION

The Support Group has not efficiently and effectively managed the way it determined requirements for and purchased calibration and repair equipment. While we recognize that the Army may need additional equipment to implement the present concept of operations, the methods for determining the quantity of equipment needed and justifications used to initiate equipment purchases were premature and failed to follow established Army policies and procedures. The quantity of equipment actually needed to perform the Army's calibration and repair mission based on program implementation has yet to be defined.

This conclusion is consistent with the November 5, 1981, testimony of the Under Secretary of the Army before the Senate Committee on Governmental Affairs. In his testimony the Under Secretary stated that a comprehensive review of the entire Army calibration program would be conducted with a report by March 1982. We, therefore, conclude that further evaluation of the Army calibration program by our office, at this time, should be deferred until the ongoing comprehensive Army evaluation is concluded and the Army has been given an opportunity to take

appropriate corrective actions. This report and its recommendations should be considered in that Army evaluation.

RECOMMENDATIONS

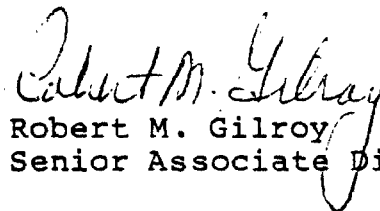
We recommend that you, on the basis of actual workload needs, take the action to:

- Adjust orders for tactical vans, air conditioners, and generators to coincide with calibration equipment needs and existing support equipment in the inventory.
- Assess the need for tactical vans and air conditioners in storage at Army depots.

We would appreciate receiving your reply on the actions taken in response to these recommendations.

We are providing copies of this report to the Secretary of Defense, the Secretary of the Army, and interested congressional offices.

Sincerely yours,

  
Robert M. Gilroy  
Senior Associate Director

TACTICAL VANS EXCESS TO REQUIREMENTS

The Support Group has 19 tactical vans on hand, costing about \$2.2 million, which are excess to its total estimated requirements and another 9 tactical vans costing about \$1.8 million may become excess if an unfilled purchase order is filled.

Tactical vans mounted on a 5-ton truck are used by military calibration and repair teams as work shops to house calibration and repair equipment and provide a mobile working environment in both peacetime and contingency operations. The Tank-Automotive Command purchases tactical vans for the Support Group.

Worksheets provided by the Support Group show that 175 vans are currently on hand. Eighty of these vans were used in the calibration program before combining calibration and repair operations. The other 95 vans were purchased by the Tank-Automotive Command in August 1979 to fill an order placed by the Support Group in October 1978. The average cost of the vans was about \$116,800 each.

In 1980 the Support Group revised the distribution and mix between basic sets, which require one van, and augmented sets, which require two vans. This revision resulted in an estimated requirement for 9 additional vans which the Support Group ordered in June 1980. According to the item manager, the 9 additional vans had been included in the current procurement planning, but would not be purchased until the Support Group's requirements are validated. The item manager estimated that these vans will cost approximately \$200,000 each if purchased as planned in fiscal year 1984.

In July 1981, the Support Group again revised its estimates for tactical vans to the current requirement of 156. According to Support Group officials, the reductions resulted, in part, from determinations that calibration equipment would be removed from existing tactical vans and assigned to locations in the United States which did not have a tactical mission, and that existing workload and personnel resources in Europe did not justify the deployment of equipment as planned.



TACTICAL VANS PURCHASED BUT NOT NEEDEDUNTIL AFTER FISCAL YEAR 1985

The Support Group will not need 47 on-hand tactical vans costing about \$5.5 million, until after fiscal year 1985 because funds for the calibration and repair equipment to be installed in those vans has not been provided.

When the 95 tactical vans, discussed in Appendix I, were ordered in October 1978, Support Group officials anticipated that funds would become available for calibration equipment to be installed in the vans. However, as a result of budget cuts, funding for calibration equipment to be installed on 40 tactical vans for the Army National Guard; 4 vans for war reserves; and 3 vans for active components has been deferred until fiscal year 1985.

The 40 tactical vans, which were purchased for the Army National Guard, are currently stored in humidity controlled warehouses at the Letterkenny Army Depot in Chambersburg, Pennsylvania. Before the vans were purchased, the Support Group confirmed with the Guard that 40 tactical vans were required for 20 calibration teams. The need for the Guard vans, however, will not materialize until the National Guard Bureau establishes organizations and locations for tactical calibration and repair operations to support mobilization requirements. According to the DARCOM liaison for the National Guard, the vans will not be requisitioned from storage until the organizations are officially established.

Army position on National Guard equipment

At a January 26, 1982, meeting, Army officials told us that the National Guard TMDE Support Company is planned for activation in fiscal year 1982. They expressed the view that the delay in funding calibration sets until fiscal year 1985-86 does not alter the requirement for the 40 vans, 40 air conditioners and 20 generators for the National Guard. According to Army officials, the current plan is to take the calibration equipment at the various state maintenance shops of the Guard and place it in the new vans. This, according to the Army officials, will give them mobile capability to partially meet mobilization requirements. However, these vans will need consoles and racks to accommodate the calibration equipment. This is, in our view, further evidence of inadequate planning.

AIR CONDITIONERS AND GENERATORSEXCESS TO REQUIREMENTS

On the basis of Support Group planning data, 66 air conditioning systems and 79 generators, ordered at a potential cost of about \$2.2 million, are either excess to requirements or may not be needed until after fiscal year 1985.

One air conditioner and generator is assigned to each tactical van. Air conditioners, which cost about \$5,100 each, are mounted on tactical vans to cool the working area. Generators, costing about \$23,900 each, provide electricity for calibration equipment when commercial power is unavailable. The Troop Support and Aviation Materiel Readiness Command purchases both air conditioners and generators for the Support Group.

As in the case of tactical vans, the Support Group currently estimates a total requirement for 156 air conditioners and generators, of which only 109 will be needed through fiscal year 1985. Support Group records indicate the following on hand and on order status of air conditioners and generators in comparison to its estimated requirements.

	<u>Air conditioners</u>	<u>Generators</u>
On hand	106	68
On order	<u>69</u>	<u>120</u>
Total on hand and on order	175	188
Total Requirement	<u>156</u>	<u>156</u>
Excess to total requirement	19	32
Quantity not needed until after fiscal year 1985	<u>47</u>	<u>47</u>
Total excess to current needs	<u>66</u>	<u>79</u>
Estimated cost per unit	\$ 5,100	\$ 23,900
Potential cost of equipment excess to current needs	\$336,600	\$1,888,100

At the time of our review, the Support Group had not revised the orders for either air conditioners and generators and, according to the commodity item managers, the equipment had not been provided to the Support Group.

GENERATORS ON ORDER BUT NOT PURCHASED

Of the 120 generators which the Support Group has ordered, 41 are currently required to power on-hand mobile calibration sets during contingency situations when commercial electricity is unavailable. The Support Group has been unable to obtain the needed generators because established Army management policies and procedures (i.e., required operational capability (ROC) and basis of issue plan (BOIP)) for the acquisition of calibration and related support equipment has not been followed.

After the Support Group ordered 75 generators in October 1978, the item manager informed the Group that the order would not be filled because a requirement for the generators was not in the Structures and Composition file. Requirements cannot be established in that file until there is an approved BOIP. The BOIP cannot be approved until the ROC is approved, and neither the ROC nor the BOIP have been approved.

Although the order for 75 generators was rejected, the Support Group resubmitted another order, increasing the quantity to 120. The item manager again refused to fill the order for the same reason stated above, but informed the Group that delivery would begin in March 1984 if requirements were established in the structures and composition file by January 1982.