DEPARTMENT OF DEFENSE

AUDIT REPORT

ACQUISITION OF THE HEAVY EXPANDED MOBILITY TACTICAL TRUCK

No. 90-021

December 26, 1989

Office of the Inspector General

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
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December 26, 1989

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (FINANCIAL MANAGEMENT)
DIRECTOR, DEFENSE LOGISTICS AGENCY

SUBJECT: Report on the Audit of the Acquisition of the Heavy Expanded Mobility Tactical Truck (Report No. 90-021)

This is our final report on the audit of the Army's Heavy Expanded Mobility Tactical Truck (HEMTT) Program for your review and comments. We made the audit from September 1988 through May 1989. The audit's overall objective was to evaluate the acquisition management of the HEMTT relative to the critical program management elements. The audit evaluated mission effectiveness, acquisition plans and contract procedures, cost estimating and analysis, logistics support, product improvements, cost increases, spending trends, and turnover from contractor to organization support. The HEMTT is a highly mobile tactical truck used to support high priority forward area rearmament and refueling requirements of the Multiple Launch Rocket System, Patriot Missile System, M1 Abrams Tank, AH-64 Attack Helicopter, and the Self-Propelled Howitzer System. In May 1981, the Army awarded a 5-year fixed-price contract with economic price adjustments to the Oshkosh Truck Corporation to produce HEMTT's. A follow-on contract with options was awarded to Oshkosh Truck Corporation in April 1987. As of June 1, 1989, the Army's total program cost for 11,498 HEMTT's was $1.7 billion.

Experienced and capable Army and Defense Contract Administration Services personnel managed aspects of the Army's HEMTT well. Our review of six program management element objectives did not disclose any major problems. The audit results for these objectives are summarized in Part I of this report. We, however, identified needed improvements and internal control weaknesses in operator training and quality assurance. The responses of both the Army and the Defense Logistics Agency to our suggestions were timely, complete, and appropriate. We would cite this audit as a good example of auditors and management working together in a responsive and responsible way. One of the results of this cooperation was that the Army was able to apply the $3 million in monetary benefits to the purchase of additional HEMTT's. All information provided to us regarding corrective actions will be provided to and tracked by our audit followup officials. The results of the audit are summarized in the following paragraphs, and the details and audit recommendations are in Part II of this report.

The Army needed to improve training for HEMTT operators. As a result, training weaknesses may have contributed to operator errors that may have resulted in HEMTT accidents. The Army Safety Center reported 173 accidents from October 1984 to May 1989. We recommended that the U.S. Army Training and Doctrine Command evaluate the initial operator training and implement changes to the program of instruction that will make HEMTT operator training more realistic. We also recommended that the Training and Doctrine Command develop an interactive program of instruction to aid commanders and senior noncommissioned officers in conducting sustainment training (page 7).

The contractor delivered HEMTT's with repetitive quality deficiencies. From April 1, 1988, to March 31, 1989, the Tank-Automotive Command's (TACOM) fielding teams reported 232 recurring deficiencies with 3,714 occurrences during the fielding of 868 HEMTT's. Vehicles delivered with deficiencies caused the Army's fielding teams unnecessary delays and additional expense to correct the deficiencies. We recommended that the Commander, Defense Contract Administration Services Region - Chicago expand its system review approach to combine a review of the contractor's completed inspection form with a physical inspection against that specific vehicle. We also recommended that a reconciliation be made between the Materiel Fielding Checklist and the Final Inspection Record to ascertain the consistency of inspection requirements between the documents and correct any inconsistencies (page 11).

The audit identified nonexistent and ineffective internal controls, as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DoD Directive 5010.38. Finding B identifies the need for controls to ensure that the contractor provides the Government with end items that are free of quality deficiencies. Recommendations B.1. and B.2. in this report, if implemented, will correct this weakness. We could not determine the monetary benefits to be realized by implementing Recommendations B.1. and B.2. The monetary benefits were not readily identifiable because detailed records showing the additional travel and personnel resources expended to correct the HEMTT deficiencies were not maintained. A copy of the final report will be provided to the senior officials responsible for internal controls within the Army and the Defense Logistics Agency. An additional internal control weakness is discussed in Part I of the report.

On September 19, 1989, a draft of this report was provided to the Assistant Secretary of the Army and the Director, Defense Logistics Agency, for comments. The Army concurred with Finding A and Recommendations A.1. and A.2. and implemented corrective actions that meet the intent of the recommendations. The Defense Logistics Agency concurred with Finding B and

Recommendations B.1. and B.2. and implemented corrective actions that meet the intent of the recommendations. Management comments are summarized in Part II of this report and are presented in complete text in Appendixes B and C.

The Army agreed with the potential monetary benefits of $3 million identified in Part I of our report. This cost savings was based on the deletion of 491 winches on the HEMTT procurement for fiscal year 1989. The potential monetary and other benefits resulting from the audit are in Appendix D.

The management responses to the draft report conformed to the provisions of DoD Directive 7650.3. The respondents' proposed actions are responsive; therefore, additional management comments on the final report are not required.

The courtesies extended to the audit staff are appreciated. If you have any questions on this audit, please contact Mr. John Dillinger at (202) 693-0186 (AUTOVON 223-0186) or Mr. Verne Petz at (202) 693-0388 (AUTOVON 223-0388). The audit team members who contributed to this report are listed in Appendix F. Copies of the report are being provided to the activities listed in Appendix G.

Stephen A. Trodden
Assistant Inspector General
for Auditing

Enclosures

cc:
Secretary of the Army

REPORT ON THE AUDIT OF THE ACQUISITION OF THE HEAVY EXPANDED MOBILITY TACTICAL TRUCK

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Prepared by:
Acquisition Management Directorate
Project No. 8MB-0073

REPORT ON THE AUDIT OF THE ACQUISITION OF THE HEAVY EXPANDED MOBILITY TACTICAL TRUCK

PART I - INTRODUCTION

Background

The Heavy Expanded Mobility Tactical Truck (HEMTT) is a highly mobile diesel-powered, 8-wheel drive, 10-ton truck. There are five models of the HEMTT: two cargo, a tractor, a fuel tanker, and a recovery vehicle. Each model (except the fuel tanker and tractor) is equipped with a fold down, material handling crane to load and off-load material. The crane is optional on the tractor model. The HEMTT is a nondevelopmental item used to support forward area rearming and refueling requirements of the Multiple Launch Rocket System, M1 Abrams Tank, AH-64 Attack Helicopters, and the Self-Propelled Howitzer Systems. In addition, the tractor model of the HEMTT is used to transport the Patriot Missile System. The HEMTT is:

- capable of hauling a maximum payload of 22,000 pounds,

- capable of speeds of 55mph (88kph) at gross vehicle weight,

- capable of negotiating a 60-percent grade at gross vehicle weight, and

- capable of achieving a cruising range of 300 miles.

The fuel tanker has a 2,500 gallon stainless steel tank and is capable of gravity or pump discharge. It is capable of both gravity top fill and bottom fill using a 300 gallon per minute suction pump. The recovery vehicle has a 60,000 pound capacity main recovery winch and a retrieval system with a lifting capability of 25,000 pounds. In addition, all recovery vehicles and about 42 percent of the vehicles in other configurations are equipped with a mid-ship mounted, self-recovery winch, which has a 22,000 pound single line-pull capability. The winch is designed to accomplish both forward and aft self-recovery.

To determine whether a nondevelopmental item acquisition approach was practical, the Army conducted a feasibility test beginning in March 1978 using vehicles that PACCAR Corporation of Renton, Washington; Lockheed Corporation of Calabasas, California; and the M.A.N. Company of West Germany produced. After the feasibility testing results were considered successful, the Army decided to use a two-step formal advertising acquisition strategy. On September 11, 1980, the U.S. Army Tank-Automotive Command (TACOM) issued step 1 of the solicitation to

14 potential contractors, and by February 23, 1981, 4 firms had responded with technical proposals. On April 14, 1981, step 2 of the solicitation was issued, and two contractors, Oshkosh Truck Corporation and AM General Corporation, responded with bids. On May 22, 1981, TACOM awarded a 5-year fixed-price contract, with economic price adjustment, to the Oshkosh Truck Corporation, the low bidder. Under this contract, 6,962 vehicles were procured at about $1 billion. On April 9, 1987, the Army awarded a sole-source firm-fixed-priced contract, with options, to the Oshkosh Truck Corporation for a follow-on procurement. As of April 28, 1989, the follow-on contract for 4,536 vehicles was valued at $685 million.

The Project Manager Heavy Tactical Vehicles manages the HEMTT program. The project manager operates under the direction of the Program Executive Officer, Combat Support. The program cost as of June 1, 1989, was $1.7 billion for 11,498 HEMTT's.

Objective and Scope

The overall audit objective was to evaluate the acquisition management of the HEMTT to determine whether the system was effective, properly supported, and economically procured. We made the audit in accordance with our critical program management elements approach. Under this approach, we focused our evaluation on nine elements of program management that were critical to the late production and deployment phase of the HEMTT program. During the survey of the audit, we determined that additional audit work was not warranted on the following six program management elements:

- modification and improvement program,
- extent and impact of cost increases,
- operation and maintenance budget and spending trends,
- turnover from contractor to organization support,
- acquisition plan, and
- cost-estimating and analysis.

The results of our review of these six elements are summarized in the "Other Matters of Interest" section of this report. During the verification phase of the audit, we continued to assess the status of three program management elements: logistic support, mission effectiveness, and contract procedures. Before beginning the audit in January 1989, we identified six specific audit objectives from three program management elements, to assess during the verification phase of the audit. The six audit objectives were:

- to assess the Army's requirement for the HEMTT's self-recovery winch;

- to evaluate operator training;

- to evaluate contract modifications for accuracy, cost reasonableness, and compliance with the Federal Acquisition Regulation;

- to evaluate the potential for breakout of spare parts;

- to evaluate the adequacy of the program's production quality assurance; and

- to evaluate the need for continuing comparison performance testing.

Four of the six areas included in the audit verification phase did not result in significant reportable conditions. The results of our review of these four audit areas are summarized in the "Other Matters of Interest" section of the report. The remaining two areas relating to operator training and production quality assurance are presented in Part II of this report.

As part of our audit we obtained and reviewed data and information covering May 1981 through April 1989. We reviewed selected documentation, such as, but not limited to, contracts and contract modifications, quality deficiency reports, training programs, accident reports, comparison performance test results, provisioning data, overhead rate agreements, materiel fielding reports, and procurement and program management data. We interviewed personnel involved in the acquisition and administration of the HEMTT program. A list of the activities visited or contacted is in Appendix E. The audit identified weaknesses in the internal controls related to quality assurance and contract modifications. The internal controls applicable to the other audit objectives were deemed to be effective in that no material deficiencies were disclosed by the audit. This economy and efficiency audit was conducted from September 1988 to May 1989 in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD, and accordingly included tests of internal controls as were deemed necessary.

Prior Audit Coverage

Neither DoD internal audit organizations nor the General Accounting Office has made any audits of the HEMTT in the last 5 years.

Other Matters of Interest

Survey Conclusions. During the survey phase of our audit, we determined that no additional work was required in the areas of modification and improvement program, extent and input of cost increases, operation and maintenance budget and spending trends, turnover from contractor to organization support, acquisition plan, and cost estimating and analysis. A discussion of these areas follows.

Modification and Improvement Program. The HEMTT had only one major modification or product improvement since its inception. This improvement was a user-driven requirement to upgrade the recovery vehicle to enable it to recover all wheeled vehicles in the Army fleet. The contractor began developing this improved recovery vehicle in September 1983. We found that the U.S. Army Training and Doctrine Command reviewed user concerns, and its review disclosed that there were no other deficiencies critical enough to warrant major modification or retirement.

Extent and Input of Cost Increases. The Conference Report for the National Defense Authorization Act for 1987, dated October 1986, authorized $234.3 million to procure 1,523 HEMTT's for fiscal year 1987. Also, the Authorization Act stated that the current contractor's production rate would be maintained at six trucks per day in fiscal year 1987 to avoid unnecessary cost increases. When TACOM negotiated the 1987 follow-on contract for the HEMTT, the cost per truck decreased in the follow-on contract as compared to the current deliveries of the previous 1981 multiyear contract. The cost decreases ranged from 2 to 11 percent depending upon the model of HEMTT being procured.

Operation and Maintenance Budget and Spending Trends. We found that the operation and maintenance budget of $7.7 million for fiscal year 1986, $7.6 million for fiscal year 1987, and $8.5 million for fiscal year 1988 were adequate to support the program's requirements. We did not identify any funding shortages or other problems with the operation and maintenance budget for the HEMTT program.

Turnover from Contractor to Organization Support. We did not identify any problems in this program management area. The turnover from contractor to organization support was not a significant factor in the HEMTT program because the Army did not rely on the contractor for organization support.

Acquisition Plan. TACOM adhered to the acquisition plan for the HEMTT procurement and support. The plan called for a firm-fixed-priced contract to be awarded to Oshkosh Truck Corporation on a negotiated sole-source basis. On April 9, 1987, TACOM awarded a contract to Oshkosh Truck Corporation, and the Army generally adhered to the milestones set forth in the plan.

Cost Estimating and Analysis. TACOM performed adequate cost and price analysis on Oshkosh Truck Corporation's proposal and awarded a sole-source firm-fixed-priced contract on April 9, 1987. We found that the cost estimating and analysis used in the contract negotiations were adequate and resulted in a fair and reasonable price.

Audit Conclusions. Areas included in the verification phase of the audit that did not result in significant reportable conditions were evaluating contract modifications for accuracy, cost reasonableness, and compliance with the Federal Acquisition Regulation; evaluating the potential for breakout of spare parts; and evaluating the need for continuing comparison performance testing. During the audit, Army management had implemented or was implementing corrective action to resolve these problems; therefore, we did not observe any significant problems. Our assessment of the Army's requirement for the HEMTT's self-recovery winch did result in a significant reportable condition. A discussion of these areas follows.

Contract Modifications. During the audit, we identified internal control weaknesses in the area of contract modifications. We found that the cost for the individual contract line items on the multiyear contract did not reconcile to the total contract cost. One of the contributing factors was that all of the definitized modifications had not been entered into the contract status reporting system. For example, modification A0054 valued at $8.5 million was not entered into the system. Based on our discussions with TACOM contracting personnel, the contracting officer assigned someone to correct the problem and to ensure that the cost of contract line items would reconcile with the total contract cost.

We also reviewed 10 contract modifications that the administrative contracting officer (contracting officer) definitized in fiscal year 1986. Our review encompassed $34 million of the $58 million in contract modifications definitized by the contracting officer for the HEMTT multiyear contract. All 10 modifications reviewed had proper contractor proposals, cost and pricing data, postnegotiation memorandum, and proper signatures.

Breakout of Spare Parts. We reviewed the breakout program for 14 high dollar HEMTT spare parts. We found that TACOM had broken out the engine and transmissions. TACOM attempted to purchase the axle assemblies from the Eaton Corporation, but Eaton refused to sell any of the 10 assemblies directly to the Government. TACOM awarded a contract to FABCO to produce the axles, but FABCO was unable to duplicate the Eaton Corporation axle. FABCO stated that Eaton Corporation retracted its offer to sell the axle carrier and stated that the differential was proprietary to Eaton Corporation and Oshkosh Truck Corporation.

Comparison Performance Testing. Comparison performance tests (tests) were conducted to ensure continued reliability, maintainability, and performance of the end item as required by the contract performance standards. We reviewed the results of the test incident reports for two of the six completed comparison performance tests. While conducting the tests, the Army's Test and Evaluation Command identified problems that forced the contractor to change production processes or change vendors for the HEMTT's to meet the contractual requirements. The tests are one means for the Army to ensure the continued quality of the HEMTT.

The test incident reports also identified repetitive quality deficiencies that were also identified by the materiel fielding teams. Details of the repetitive quality deficiencies are discussed in Finding B.

Requirement for Self-Recovery Winch. We questioned the Army's need to procure 1,122 HEMTT's equipped with the self-recovery winch on the planned 1989 buy. The Army was planning to award the option for the final procurement of 1,449 HEMTT's vehicles, which were all scheduled to be equipped with a self-recovery winch. In December 1988, the Army reduced the number of HEMTT's equipped with the winches to 1,122 resulting in a cost savings of $1.9 million. We determined that 42 percent of the HEMTT fleet had self-recovery winches. In January 1989, we recommended to the Army's Deputy Chief of Staff for Operations and Plans that it review the need for the winch on all 1,122 vehicles. The winch adds about $6,000 to the cost of a HEMTT. The Army concurred with our recommendation and reviewed the need for HEMTT's with self-recovery capability. In a memorandum dated March 16, 1989, the Army stated that it had completed its review and the winch requirement would be deleted on 491 trucks, resulting in a savings of about $3 million. Also, the Army stated that the remaining trucks equipped with winches will be used in mechanized infantry units to assist in their own recovery and recovery of other vehicles.

PART II - FINDINGS AND RECOMMENDATIONS

A. Operator Training

FINDING

The Army needed to improve training programs for the Heavy Expanded Mobility Tactical Truck (HEMTT). The initial operator training program was conducted without simulating actual cargo loads, and the actual training for operation of the HEMTT's self-recovery winch did not follow the procedures described in the operator's manual. Also, senior noncommissioned officers lacked the knowledge needed to ensure proper sustainment training of HEMTT operators assigned to their units. As a result, these training weaknesses may have contributed to operator errors that resulted in accidents. Army units reported 173 operator related accidents involving the HEMTT to the Safety Center, Fort Rucker, Alabama.

DISCUSSION OF DETAILS

Background. The HEMTT is a high mobility tactical truck with operating characteristics that are unique from other wheeled vehicles in the Army inventory. The five models of the HEMTT have net chassis vehicle weights of 30,400 pounds to 33,000 pounds and gross vehicle weight of 62,000 pounds to 95,000 pounds. The HEMTT has a high center of gravity to facilitate ground clearance. The effect of the high center of gravity is accentuated as the vehicle's load increases, which adds to the potential for vehicle rollovers. Operators must be especially aware of the potential for air brake limitations (especially when operating with a full load on downgrades) to preclude depletion of the air pressure reserve, which will cause the brakes not to release. The HEMTT's chassis was designed with the cab forward of the front wheels, and the HEMTT is equipped with a four-wheel front tandem axle steering system. While the chassis design provides more maneuverability, operators must be experienced to properly negotiate turns. When not operated proficiently, the HEMTT's anciliary equipment, such as the fold down cargo crane and mid-ship mounted winch, can cause injury to the operator and soldiers in the immediate area. These unique operating characteristics of the HEMTT dictate that soldiers must be trained to standards, and that soldiers must maintain their proficiency in properly operating the HEMTT through sustainment or follow-on training.

Army Regulation 600-55, "Motor Vehicle Driver and Equipment Operator Selection," September 26, 1986, states that the Commanding General, U.S. Army Training and Doctrine Command (TRADOC) will develop training packages and support products for generic wheeled and tracked vehicle operator training, including critical task; prescribed conditions; and standards, as

necessary. Installation commanders are responsible for selecting, training, testing, and licensing vehicle and equipment operators and ensuring that sufficiently qualified and experienced vehicle operators are available to support mobilization requirements.

Advanced Individual Training. TRADOC conducts Advanced Individual Training for Motor Transport Operators at two locations: Fort Dix, New Jersey, and Fort Leonard Wood, Missouri. We reviewed the 1-week portion of the Motor Transport Operators course [1/] dedicated to HEMTT training at Fort Dix, New Jersey. During this 1-week training period, the soldiers were instructed on how to perform daily preventive maintenance, how to operate the vehicles' accessories (such as the winch and material handling crane), and how to operate the vehicle on improved and unimproved road surfaces. The student operators were trained on unloaded HEMTT cargo trucks. This training did not simulate the weight and cube characteristics of the HEMTT's mission cargo of ammunition. Also, students were trained to operate the material handling crane without using weight and cube characteristics to simulate an actual load of ammunition. We believe that operator training under simulated load conditions is necessary to provide combat soldiers the skills needed to perform their mission.

Actual training for operation of the self-recovery winch did not follow the procedures described in the operator's manual. The HEMTT self-recovery winch is mid-ship mounted to enable forward or aft recovery. The operator's manual prescribed the operation of the self-recovery winch to be a two-soldier operation. One soldier pays out the cable using the power takeoff controls located in the cab. The other soldier must string the cable through the rollers and cable guides located under the truck. However, at the Fort Dix training site, the Army instructors conducted the winch training with three soldiers because of the potential safety hazard when using only two soldiers. The instructors believed that the third soldier was needed to relay instructions to the operator in the vehicle from the soldier stringing the winch under the vehicle.

In January 1989, we discussed training problems in the simulation of actual loads and the potential winch safety hazard with the TRADOC System Staff Officer for the Combat Service Support Directorate of the Office of the Deputy Chief of Staff for Combat Development. The TRADOC System Staff Officer took immediate steps to achieve corrective actions. As of May 1989, TRADOC had validated both the problems and was in the process of coordinating with other Army commands to make the necessary changes to the program of instruction and the operator's manuals.

[1/] The Motor Transport Operator's Course is an 8-week course that teaches students to operate six different Army vehicles, including the HEMTT.

Sustainment Training. Commanders conduct sustainment or follow-on training to ensure that soldiers maintain proficiency in their duty military occupational specialty (MOS). In May 1989, we reviewed two aviation support units to determine the number of school trained HEMTT operators and how sustainment training was conducted. At one aviation support unit at Fort Rucker, Alabama, 22 of the 27 HEMTT operators were not school trained, and at Fort Bragg, North Carolina, 6 of the 10 HEMTT operators were not school trained. Neither unit had a senior noncommissioned officer formally trained on the HEMTT system to facilitate proper operator sustainment training. Also, the senior noncommissioned officers did not receive the New Equipment Training on the HEMTT because they were not assigned to the units when the New Equipment Training was provided. In addition, the soldier did not always know or follow the proper procedures for operating the HEMTT systems, such as cleaning tankers when changing to a different fuel, operating the tanker's quick refueling system, or using the recovery vehicle's safety feature.

We discussed the results of our review of sustainment training with personnel from the U. S. Army Transportation School and the newly created Army Driver Standardization Office. The Army personnel advised us that they began an effort to enhance initial driver training in January 1989. The Army's planned agenda included identifying driver deficiencies, developing a new training strategy, and developing a training support package based on standards and common tasks. As of the end of May 1989, the Army began the revision of AR 600-55 and was soliciting input from the field. We commended the Army's effort to enhance initial driver training and urged it to develop an interactive program to aid commanders in their efforts to implement a sustainment training program to maintain HEMTT operator proficiency. The interactive program could use video training to incorporate blocks of instruction that would directly relate to hands-on training.

HEMTT Accidents. The Army documented 173 accidents attributable to operator error from October 1984 to May 1989. The damage costs for these accidents were estimated at $5.8 million with one accident alone accounting for $3.6 million in estimated damages. We also found that 52 of the 173 operators involved in the accidents were not MOS-qualified truck drivers. These soldiers carried combat arms MOS' that qualified them to receive a higher bonus pay than truck drivers. Utilizing soldiers trained in combat arms as truck drivers increased the cost of operating a HEMTT and reduced the soldiers' available training time in their combat arms MOS.

Conclusion. The unique operating characteristics of the HEMTT relative to other vehicles in the Army inventory and the hazardous cargo of ammunition, missiles, and fuel that it transports dictate the need for well-trained HEMTT operators.

The Army failed to train HEMTT operators with simulated loads for actual mission cargo at its Motor Transport Operators course. In addition, some units lacked HEMTT-trained noncommissioned officers necessary to conduct effective operator sustainment training. As a result, these training weaknesses may have contributed to operator errors that resulted in accidents. The Army's achievement of a well-trained base of HEMTT operators would increase readiness and should reduce the number of accidents.

RECOMMENDATIONS FOR CORRECTIVE ACTION

We recommend that the Commander, U.S. Army Training and Doctrine Command:

1. Evaluate Heavy Expanded Mobility Tactical Truck operator training and implement revisions to the program of instruction that will make the truck operator training more realistic. Revisions, at a minimum, should include simulated full and partial load weights on vehicles while driving, weighted pallets when training on the material handling crane, and winch procedures to ensure consistency between training sites under the safest conditions possible.

2. Develop an interactive program of instruction to aid commanders and senior noncommissioned officers in conducting sustainment training.

MANAGEMENT COMMENTS

The Army concurred with our recommendation stating that the program of instruction has been changed to facilitate realism in Heavy Expanded Mobility Tactical Truck (HEMTT) operator training under the safest possible condition. Also, a change to the HEMTT operator's manual for the winching procedures was submitted to the Tank-Automotive Command for review and implementation into the manual. The changes to the program of instruction and operator's manual will be completed by the second quarter of fiscal year 1990.

The Army concurred with our recommendation stating that the exportable training packages for a 2-week course on the HEMTT are near completion and will be released in the second quarter of 1990. The full text of management's comments is in Appendix B.

B. Quality Assurance

FINDING

The contractor delivered Heavy Expanded Mobility Tactical Trucks (HEMTT) with repetitive quality deficiencies. From April 1, 1988, to March 31, 1989, the Tank-Automotive Command's (TACOM) fielding teams reported 232 recurring deficiencies with 3,714 occurrences during the fielding of 868 HEMTT's. The contractor's quality assurance program was not providing for a timely application of effective corrective action to prevent future occurrences of these deficiencies during the contractor's production process. Delivery of vehicles with deficiencies caused the Army's fielding teams unnecessary delays and additional expense to correct the deficiencies before the truck could be turned over to the receiving Army Component.

DISCUSSION OF DETAILS

Background. Under the terms of the 1987 HEMTT production contract, Oshkosh Truck Corporation is required to establish a quality assurance program to ensure that the end item is produced in accordance with contract specifications and is free of quality deficiencies. The contract terms required Oshkosh Truck Corporation to meet the requirements of Military Specification - Quality 9858A, "Quality Program Requirements," Military Standard 1520C, "Corrective Action and Disposition System for Nonconforming Material," and Military Standard 1535A, "Supplier Quality Assurance Program Requirements." The Military Specification - Quality 9858A states that a quality assurance program provides for the prevention and ready detection of all discrepancies and for the implementation of timely and positive corrective actions to prevent reoccurrences. Also, the contractor is required to change the methods of inspection and monitoring when these methods are demonstrated to be ineffective. Military Standard 1520C establishes a requirement for a cost-effective corrective action and disposition system for nonconforming material. Military Standard 1535A requires the prime contractor to provide and maintain a documented quality assurance program to ensure that the subcontracted material conforms to the requirements of the contract.

The Defense Contract Administration Services Management Area (DCASMA) - Milwaukee is responsible for quality assurance for the current HEMTT production contract (DAAE07-87-C-J977). At the contractor's plant in Oshkosh, Wisconsin, DCASMA - Milwaukee's quality assurance personnel performs quality system reviews of the contractor's quality assurance program. DCASMA's quality system review approach included performing procedures evaluations, reviewing the final inspection records and the contractor's quality assurance procedures, processing quality deficiency reports, performing inspection and surveillance of the contractor's quality assurance program, and reviewing the

contractor's inspection and test reports. In addition, TACOM's product assurance and test office performed an active quality assurance role with DCASMA - Milwaukee. This role included monthly meetings with both the contractor and DCASMA - Milwaukee quality assurance personnel to discuss the contractor's quality assurance program and quality deficiencies noted in TACOM's fielding inspections on new HEMTT's issued to Army units.

Results of Audit. Our review of the Army's materiel fielding and comparison performance test reports showed that the contractor did not provide the Army with defect-free vehicles. This occurred because the contractor's quality assurance program did not provide for a timely application of effective corrective action to prevent future occurrences of deficiencies in HEMTT's during the production process.

Materiel Fielding. When new HEMTT's were placed in the field with Army units, a materiel fielding team turned over the vehicles to the receiving Army Component. As part of the turnover process, the fielding team thoroughly inspected and test drove each HEMTT. At the completion of the equipment fielding, the fielding team prepared a trip report that identified the number of trucks processed; the number of deficiencies identified on the equipment; the problems encountered during the fielding; and the corrective actions taken. From April 1, 1988, to March 31, 1989, TACOM's fielding teams reported 430 different deficiencies that occurred 3,912 times during the fielding of 868 HEMTT's. Of the reported 430 different deficiencies, 198 occurred only once. The other 232 deficiencies were recurring and accounted for 3,714 of the 3,912 reported deficiencies. Some examples of recurring deficiencies with high rates of occurrences were low fluid levels in axles, low fluid levels in hydraulics, and break system defects (Appendix A). The Army and contractor corrected these deficiencies before the trucks were turned over to the receiving Army units. As a result, the Army incurred unnecessary expenses and experienced delays in the fielding process.

From March 7 to April 20, 1988, the Army fielded 138 HEMTT's to units at Fort Campbell, Kentucky. The fielding team identified 371 deficiencies during this fielding. Because of the magnitude and types of deficiencies noted during this fielding, the Oshkosh Truck Corporation sent three representatives to Fort Campbell to witness and evaluate the problems. These contractor representatives recognized the seriousness of the deficiencies and had the contractor provide a test inspector to assist the fielding team in major repairs for 2 weeks. Repairs were made on the 138 trucks for such things as inoperable windshield wipers and washers, horns, power steering, and engine shutdown solenoids; maladjusted front brake lines; low oil levels; and improperly installed right rearview mirrors. These corrections

caused an unnecessary delay of at least 2 weeks or more in this fielding. As a result of this delay to repair the new trucks, the Army fielding team incurred additional temporary duty and personnel costs to complete the fielding.

From March 20 to March 31, 1989, we observed a HEMTT fielding at Fort Bragg, North Carolina. During this fielding, the fielding team processed and issued 44 HEMTT's to Army units at Fort Bragg. The fielding team identified five recurring deficiencies [2/], such as leaking differential pinion seals, inoperable discharge pressure gauges, and loose door panel screens. These 5 recurring deficiencies occurred 70 times on the 44 HEMTT's fielded. Also, these five deficiencies had occurred in other fieldings since April 1988. The Army and contractor personnel repaired all deficiencies before issuing the trucks to the Army units.

Comparison Performance Testing. Comparison Performance Tests were conducted to ensure that new HEMTT's continue to operate at the same performance, reliability, maintainability, and quality levels as required by the contract performance standards. As of May 1989, the Army's Test and Evaluation Command (TECOM) had completed six tests, and a seventh test was in process. At the time of the audit, the cost of these tests was $588,000. Throughout the tests, TECOM issued test incident reports that described the type of tests performed and any problems encountered during these tests. These incident reports were classified as critical, major, or minor when the problems required corrective action and classified informational when reports required no corrective action. Our review of the test incident reports from the six tests showed that the test reports identified recurring deficiencies, such as line leaks, inoperative gauges, brake problems, and seal leaks, that were also identified by materiel fielding teams.

Contractor's Quality Assurance Program. The HEMTT contractor needed to ensure that its quality assurance program placed sufficient emphasis on the implementation of corrective action to prevent reoccurrence of production defects. Under the terms of the contract, Oshkosh Truck Corporation was responsible for implementing a plan to ensure the quality of the end item. Based on the results of our review of the materiel fieldings for the year ending March 31, 1989, the contractor's quality plan was not working effectively. In June 1988, TACOM's quality assurance personnel met with DCASMA - Milwaukee's quality assurance personnel to discuss the contractor's compliance with Military

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2/ These deficiencies were not included in our 1-year statistics because the data were not entered into TACOM's tracking system until after our cutoff date of March 31, 1989.

Standard 1520 and Military Standard 1535. Based on the TACOM trip report dated June 7, 1988, the Government quality assurance representatives concluded that:

> ... it is recognized that OTC's written procedures meet the requirements of these standards, verification of complying with these procedures is difficult at times. A case in point is OTC's Corrective Action Board (CAB) meeting. As required by MIL-STD-1520, OTC has an excellent program in compiling data for trend analysis; however, there is no objective evidence that this data is summarized and used for the purpose of trend analysis. OTC contends that CAB meetings are conducted; however, there are no minutes available of these meetings. In order to force this issue, it was suggested to OTC to establish a more formal quality management meeting on a monthly basis.

During a TACOM quality surveillance visit to Oshkosh Truck Corporation in September 1988, the contractor briefed the Government quality assurance representatives on its June 1988 quality costs. The charts showed that only 10 percent of the quality cost was attributable to prevention, while 64 percent of quality cost was attributable to internal or external failures, such as correction of problems. In a May 1989 report, the Defense Contract Administration Services Region (DCASR) - Chicago's quality assurance management personnel reported the results of the system's approach assistance visit at Oshkosh Truck Corporation. This management review revealed that portions of the contractor's procedures for welding still required changes in the areas of required work instructions and that the contractor's statistical process control program [3/] was informal and documented procedures were not developed. Also, DCASR - Chicago's management personnel recognized the need to improve the effectiveness of its quality data evaluation program. This program will use the contractor's raw inspection data, which will allow the Government quality assurance personnel to perform trend analysis and identify areas for inspections and procedures evaluations. During one of the DCASMA's quality assurance procedures evaluations at Oshkosh Truck Corporation, we observed DCASMA's quality assurance personnel review the cab assembly area at the South Plant. This procedures evaluation showed that the contractor was not complying with his written drawing control procedures. Assemblers did not have the correct drawing revision for the cabs being assembled. This could result in approved engineering changes being incorporated earlier or later than the date or serial number vehicle specified in the engineering change notice.

[3/] Contract requirements did not require Oshkosh Truck Corporation to establish or maintain a statistical process control program.

Actions Taken. As a result of the recurring quality deficiencies that Army fielding teams reported concerning the HEMTT, DCASMA - Milwaukee has taken action to improve quality assurance procedures in effect at the Oshkosh Truck Corporation. In March 1988, a new Quality Assurance Representative was selected and assigned direct responsibility over the DCASMA quality assurance personnel stationed at Oshkosh Truck Corporation. In April 1988, DCASMA-Milwaukee requested DCASR-Chicago to conduct a Systems Approach Assistance Visit. A management team conducted a comprehensive evaluation of the quality assurance program in October 1988. Also, DCASMA and TACOM used their monthly quality management meetings with contractor management personnel to resolve the recurring deficiencies that HEMTT fielding teams found. Between August 1988 and February 1989, 26 recurring deficiencies were identified and addressed at the monthly meetings. By February 1989, 22 of these 26 problems had been resolved.

In August 1988, a new DCASMA Quality Assurance Branch Chief was selected. This branch chief, located in Milwaukee, has direct responsibility over the Quality Assurance Representative at Oshkosh Truck Corporation. The new branch chief instituted positive actions to more effectively monitor the quality assurance program. Actions to improve the system review approach included conducting supervisor systems approach assistance visits, organizing the quality assurance staff at Oshkosh Truck Corporation, enhancing the formal training of the on-site quality staff, and instituting procedures to conduct additional quality assurance inspections and evaluations.

All of the above actions have improved the quality of HEMTT's. However, until improvement is clearly documented through the materiel fielding and DCASMA-Milwaukee's new quality data evaluation program, we believe that DCAS should expand its system review approach to combine a review of the contractor's completed item inspection forms with a physical verification inspection against that specific vehicle. This method of inspection would verify that each characteristic on the inspection forms was inspected, deficiencies corrected, and the contractor's corrective action effective.

The physical verification inspection should be performed on each control test vehicle. The control test, as stipulated in the contract, is a test of 1 of every 40 vehicles produced to determine if the vehicle should be accepted and if testing is needed on the remaining vehicles. When deficiencies are noted, contractual provisions require the contractor to correct all like deficiencies on the remaining vehicles that the control test vehicle represents. Also, the contractor is required to submit a control test report identifying the root cause of the deficiency and actions taken to prevent its recurrence. In addition, the HEMTT's Final Inspection Record, which includes the final

inspection tasks that the contractor performed and that DCASMA monitored, should include, at a minimum, all the inspection tasks included in the Army's Materiel Fielding Checklist. This will allow the contractor to correct the problem before sending the vehicles to the field.

RECOMMENDATIONS FOR CORRECTIVE ACTION

We recommend that the Commander, Defense Contract Administration Region - Chicago, direct the quality assurance personnel for the Heavy Expanded Mobility Tactical Truck to:

1. Expand their system review approach to combine a review of the contractor's completed item inspection forms with a physical verification inspection against that specific vehicle. This inspection should be performed on each control test vehicle until completion of the Heavy Expanded Mobility Tactical Truck contract.

2. Reconcile the Army's Materiel Fielding Checklist and the Final Inspection Record to ascertain the consistency of inspection requirements between these two documents. The Final Inspection Record should include all the inspection tasks included in the Materiel Fielding Checklist.

MANAGEMENT COMMENTS

The Defense Logistics Agency concurred with Recommendation B.1. stating that a review of the contractor's completed item inspection form is [now] conducted with a physical verification inspection on each control test vehicle.

The Defense Logistics Agency concurred with Recommendation B.2. stating that the Materiel Fielding Checklist has been reconciled with the Final Inspection Record and all contractual inspection tasks have been incorporated into the Final Inspection Record. The full text of management's comments is in Appendix C.

EXAMPLES OF RECURRING DEFICIENCIES FOUND DURING MATERIEL FIELDING OF THE HEMTT

Deficiency	Number of Occurrences on 868 HEMTTS
Inoperative horns	178
Low fluid levels in:	
Battery	142
#1 and #2 axle	292
#3 and #4 axle	318
Hydraulics	121
Loose hoses and lines on fuel system	115
Erroneous tachometer reading	36
Erroneous oil pressure reading	7
Erroneous battery gauge reading	3
Erroneous water temperature readings	3
Loose hard lift points	42
Leaking rear transfer case	10
Leakage of major components	22
Defects in brake system	238
Leakage in storage boxes	43

mu 12/6/81 891205-07

DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF FOR OPERATIONS AND PLANS
WASHINGTON, DC

REPLY TO
ATTENTION OF
DAMO-FDL

4 DEC 1989

MEMORANDUM THRU ~~DIRECTOR OF THE ARMY STAFF~~ 4 Dec 89 DIRECTOR OF THE ARMY STAFF 4 DEC '89
ASSISTANT SECRETARY OF THE ARMY (RESEARCH, DEVELOPMENT AND ACQUISITION)

FOR THE INSPECTOR GENERAL, ARMY (ATTN: SAIG-PA)

SUBJECT: Draft Report on the Audit of the Acquisition of the Heavy Expanded Mobility Tactical Truck (Proj # 8MB-0073)--INFORMATION MEMORANDUM

1. We have reviewed the draft report and provide the following comments:

a. REFERENCE: DOD IG draft report date 19 September 1989 Part I, Other Matters of Interest, paragraph 14, page 11.

(1) ISSUE: Review the need for a winch on 1222 of 1489 HEMTTs to be procured in 1989.

(2) CORRECTIVE ACTION: Review of the HEMTT with winch requirement was conducted and resulted in the deletion of 491 winches at a savings of approximately $3 million.

b. REFERENCE: DOD IG draft report dated 19 September 1989, Part II, Findings and Recommendations, paragraph 1, page 19.

(1) ISSUE: Evaluate Heavy Expanded Mobility Tactical Truck (HEMTT) operator training and implement revisions to the Program of Instruction (POI) that will make the truck operator training more realistic. Revisions, at a minimum, should include simulated full and partial load weights on vehicles while driving, weighted pallets when training on the material handling crane, and winch procedures to insure consistency between training sites under the safest conditions possible.

(2) CORRECTIVE ACTION: (1) The POI for the Motor Transport Operator (88M10) has been changed to include driving the HEMTT loaded and partially loaded. The training bases have loaded the HEMTT vehicles and are adding additional weight to meet full cargo weight capacity. This allows the student driver to operate the HEMTT empty, partially loaded, and loaded. (2) The training bases are now using weighted pallets and loading/unloading the HEMTT with the material handling crane. (3) A DA form 2028 (Recommended Changes to Publications and

Blank Forms) was submitted to the Tank and Automotive Command (TACOM) to change the winching procedures in TM9-2320-279-10-1 (Operator's Manual for the HEMTT). TACOM is presently reviewing this issue.

(3) MILESTONE: All of the above changes will be completed by 2d Qtr, FY90.

c. REFERENCE: DOD IG draft report dated 19 September 1989, Part II, Findings and Recommendations, paragraph 2, page 19.

(1) ISSUE: Develop an interactive program of instruction to aid commanders and senior noncommissioned officers in conducting sustainment training.

(2) CORRECTIVE ACTION: As a forerunner to future exportable training packages, a two week course on the HEMTT is near completion. The HEMTT package will contain:

* Program of instruction.
* Lesson plans.
* Sample training schedule.
* Training aids (paper flimsies).
* Sample designs of training areas.
* Performance tests.
* Video program covering the following:
  - PMCS
  - Crane operation
  - Winch operation
  - Driving a loaded HEMTT.
* Associated publications (TMs, ARs...).

(3) MILESTONE: The HEMTT package will be available 2d Qtr, FY90.

2. For additional information please contact LTC MARR, DAMO-FDL X75621.

4 Dec 89 - Noted DAS.

SALLY MURPHY
MAJ, GS
ADAS

GORDON R. SULLIVAN
Lieutenant General, GS
Deputy Chief of Staff
for Operations and Plans

DEFENSE LOGISTICS AGENCY
HEADQUARTERS
CAMERON STATION
ALEXANDRIA, VIRGINIA 22304-6100

17 NOV 1989

IN REPLY REFER TO DLA-CI

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING,
DEPARTMENT OF DEFENSE

SUBJECT: Draft Report on the Acquisition of Heavy Expanded Mobility Tactical Truck (Project No. 8MB-0073)

In response to your memorandum dated 19 September 1989, enclosed are our comments to the draft report. The enclosed comments have been approved by Mr. Richard J. Connelly, Deputy Comptroller, Defense Logistics Agency.

FOR THE DIRECTOR:

Reathea E. Holmes

REATHEA E. HOLMES
Chief, Internal Review Division
Office of Comptroller

3 Encl

TYPE OF REPORT: AUDIT DATE OF POSITION: 17 Nov 89

PURPOSE OF INPUT: INITIAL POSITION

AUDIT TITLE AND NO.: Acquisition of the Heavy Expanded Mobility Tactical Truck (Project No. 8MB-0073)

FINDING B: Quality Assurance. The contractor delivered Heavy Expanded Mobility Tactical Trucks (HEMTT) with repetitive quality deficiencies. From April 1, 1988 to March 31, 1989, the Tank Automotive Command's (TACOM) fielding teams reported 232 recurring deficiencies with 3,714 occurrences during the fielding of 868 HEMTT vehicles. The contractor's quality assurance program was not providing for a timely application of effective corrective action to prevent future occurrences of these deficiencies during the contractor's production process. Delivery of vehicles with deficiencies caused the Army's fielding teams unnecessary delays and additional expense to correct the deficiencies before the truck could be turned over to the receiving Army Component.

DLA COMMENTS: Concur. As noted in the audit report, DCASMA Milwaukee and the Army's Tank Automotive Command (TACOM) have interfaced closely on this contract. The Heavy Expanded Mobility Tactical Truck (HEMTT) is a nondevelopmental item. The original HEMTT contract procured the trucks to the commercial quality system in place at Oshkosh Truck Corporation (OTC). The follow-on contract negotiated in early 1987 required OTC to implement the more stringent MIL-Q-9858A. This required extensive changes at OTC. Monthly meetings were held with the contractor, not only to discuss the in-house quality program but to provide feedback from the fielding reports. OTC has been responsive to correcting systemic problems, as noted by the IG Report, that 22 of 26 recurring deficiencies have been resolved. DCAS and TACOM have a close working relationship and regardless of the tone of the IG report, TACOM is reportedly very satisfied with the product received from OTC.

As a result of similar complications at other contractors, TACOM has been conducting a dialogue with industry relative to quality requirements on Non-Developmental Item (NDI) contracts. As a result of these meetings, TACOM has undertaken a number of initiatives aimed at minimizing the conflict between commercial quality systems and the requirements contained in military contracts. To make sure that nothing was overlooked, TACOM sent a letter on 7 Jun 89 to the CEOs at 14 major NDI and wheeled vehicle contractors asking them, "if anything is bothering them." The general tone of the responses was positive; however, they all have concerns. These concerns involve such things as any use of MIL-Q-9858A or MIL-I-45208A in NDI solicitations, the amount and type of data items, requirements for vendor control (particularly relative to bolts), and other areas which they feel are out of sync with their commercial systems. The most frequent suggestion from industry was to set up a system of reviewing and "certifying" a commercial producer's quality system prior to, or independent of, award of a contract. This would eliminate a lot of after-the-fact disagreements as well as allow contractors to bid with a much better understanding of the real requirements. TACOM has taken this as a challenge and is working with industry and DLA to make it happen.

MONETARY BENEFITS: None.
DLA COMMENTS:

ESTIMATED REALIZATION DATE:
AMOUNT REALIZED:
DATE BENEFITS REALIZED:

ACTION OFFICER: A. Dickinson, DLA-QPA, X47142

DLA APPROVAL: Richard J. Connelly

TYPE OF REPORT: AUDIT DATE OF POSITION: 17 Nov 89

PURPOSE OF INPUT: INITIAL POSITION

AUDIT TITLE AND NO.: Acquisition of the Heavy Expanded Mobility Tactical Truck (Project No. 8MB-0073)

RECOMMENDATION B.1.: We recommend that the Commander, Defense Contract Administration Region Chicago, direct the quality assurance personnel for the Heavy Expanded Mobility Tactical Truck to expand their system review approach to combine a review of the contractor's completed item inspection forms with a physical verification inspection against that specific vehicle. This inspection should be performed on each control test vehicle until completion of the Heavy Expanded Mobility Tactical Truck contract.

DLA COMMENTS: Concur. A review of the contractor's completed item inspection form is conducted with a physical verification inspection on each control test vehicle.

DISPOSITION:
( ) Action is ongoing; Final Estimated Completion Date:
(X) Action is considered complete.

MONETARY BENEFITS: None.
DLA COMMENTS:
ESTIMATED REALIZATION DATE:
AMOUNT REALIZED:
DATE BENEFITS REALIZED:

ACTION OFFICER: A. Dickinson, DLA-QPA, X47142

DLA APPROVAL: Richard J. Connelly

ENCL 2

TYPE OF REPORT: AUDIT DATE OF POSITION: 17 Nov 89

PURPOSE OF INPUT: INITIAL POSITION

AUDIT TITLE AND NO.: Acquisition of the Heavy Expanded Mobility Tactical Truck (Project No. 8MB-0073)

RECOMMENDATION B.2.: We recommend that the Commander, Defense Contract Administration Region Chicago, direct the quality assurance personnel for the Heavy Expanded Mobility Tactical Truck to reconcile the Army's Materiel Fielding Checklist and the Final Inspection Record to ascertain the consistency of inspection requirements between these two documents. The Final Inspection Record should include all the inspection tasks included in the Materiel Fielding Checklist.

DLA COMMENTS: Concur. The Material Fielding Checklist has been reconciled with the Final Inspection Record and all contractual inspection tasks have been incorporated into the Final Inspection Record.

DISPOSITION:
( ) Action is ongoing; Final Estimated Completion Date:
(X) Action is considered complete.

MONETARY BENEFITS: None.
DLA COMMENTS:
ESTIMATED REALIZATION DATE:
AMOUNT REALIZED:
DATE BENEFITS REALIZED:

ACTION OFFICER: A. Dickinson, DLA-QPA, X47142

DLA APPROVAL: Richard J. Connelly

REPORT OF POTENTIAL MONETARY AND OTHER BENEFITS FROM THE AUDIT

Recommendation Reference	Description of Benefits	Amount or Type of Benefits
A.1. and A.2.	Increase operator proficiency and combat readiness by improving initial and sustainment training.	Undeterminable
B.1. and B.2.	Provide quality trucks to the troops and reduce fielding time and costs	Undeterminable
Other Matters of Interest	Reduce production contract costs by eliminating the winch on 491 trucks.	One-time cost avoidance for fiscal year 1989 (appropriation 21 92035) for a total of $3 million.

ACTIVITIES VISITED OR CONTACTED

Department of Defense

Defense Logistics Agency, Alexandria, VA
Defense Contract Audit Agency, Milwaukee, WI
Defense Contract Administration Services Region, Chicago, IL
Defense Contract Administration Services Management Area, Milwaukee, WI

Department of the Army

Deputy Chief of Staff for Operations and Plans, Washington,DC
U.S. Army Test and Evaluation Command, Aberdeen Proving Ground, MD
U.S. Army Safety Center, Fort Rucker, AL
U.S. Army Materiel Command, Alexandria, VA
U.S. Army Tank-Automotive Command, Warren, MI
U.S. Army Training and Doctrine Command, Fort Monroe, VA
U.S. Army Forces Command, Fort McPherson, GA
U.S. Army Ordnance Center and School, Aberdeen Proving Ground, MD
U.S. Army Transportation School, Fort Eustis, VA
U.S. Army Training Center, Fort Dix, NJ
XVIII Airborne Corps, Fort Bragg, NC

Non-Government Activity

Oshkosh Truck Corporation, Oshkosh, WI

AUDIT TEAM MEMBERS

David A. Brinkman, Director
John A. Dillinger, Program Director
Verne F. Petz, Project Manager
Bernard Baranosky, Senior Auditor
Ronald L. Nickens, Auditor
Kathleen Gant, Auditor

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U.S. Army Training and Doctrine Command
U.S. Army Program Executive Office, Combat Support
Commander, U.S. Army Tank-Automotive Command
Deputy Chief of Staff for Operations and Plans

Other Defense Activities

Director, Defense Logistics Agency

Non-DoD Activities

Office of Management and Budget

U.S. General Accounting Office, NSIAD Technical Information Center

Congressional Committees:

Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
Senate Ranking Minority Member, Committee on Armed Services
House Committee on Appropriations
House Subcommittee on Defense, Committee on Appropriations
House Ranking Minority Member, Committee on Appropriations
House Committee on Armed Services
House Committee on Government Operations
House Subcommittee on Legislation and National Security, Committee on Government Operations