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The Army is continually modifying its fielded equipment to add new capabilities or overcome safety and operational deficiencies. This report discusses the Army's management of its multibillion-dollar modification work order (MWO) program, under which it upgrades fielded weapon systems and other equipment.[1] Specifically, we determined (1) the availability of information needed by Army headquarters and field personnel to effectively oversee and manage the MWO program, (2) the availability of spare parts needed by personnel in the field to maintain modified equipment, and (3) field personnel's experiences in implementing the MWO program. Due to data limitations, we relied extensively on interviews with Army personnel at all levels and on our observations at field locations to obtain this information. We are addressing this report to you due to your oversight responsibilities for government management and/or readiness.

Background

The Army established the MWO program to enhance the capabilities of its fielded weapon systems and other equipment and correct any identified operational and safety problems. Modifications vary in size and complexity. For example, for a modification to the Bradley Fighting Vehicle, the Army is adding the driver's thermal viewer to improve visibility during night-time and all-weather conditions, the battlefield combat identification system to reduce the potential for friendly fire casualties, and the global positioning receiver and digital compass system to improve navigation. In contrast to this major modification, the Army is adding updated seat belts to its fleet of High Mobility Multipurpose Wheeled Vehicles to improve safety.

The Army is making a sizable investment to modify its fielded equipment. For fiscal years 1995-97, the Army received $5.1 billion for all of its modification programs, and the President has requested $6.7 billion for 208 modifications to the Army's equipment for fiscal years 1998-2003. About 80 percent of that amount is for modifications to helicopters and other aviation items and to weapons and tracked combat vehicles. According to Army headquarters officials, as the Army's budget has declined, less funding has been available for new systems. As a result, the

[1]The Army manages modifications through MWOs, engineering changes, and product improvements. The Army's modification of equipment in the field, in a depot, in conjunction with an overhaul, or at a contractor facility, are commonly referred to as MWO programs.

Army will have to rely more heavily on the modification of its assets to correct deficiencies and enhance equipment capabilities. For example, to correct identified problems and add technological advances, the Army has approved 95 MWOs for its Apache helicopter since fielding this system in 1986.

Management of the MWO program is shared by several Army headquarters organizations. Each organization has a wide range of decision-making responsibilities in developing and supporting weapon systems, which includes modifying weapon systems and equipment through the MWO program. The Army defined the roles and responsibilities of its headquarters organizations and MWO sponsors in its September 6, 1990, Interim Operating Instructions for Materiel Change Management, which superseded Army Regulation 750-10. One of the objectives cited in the instruction was to decentralize the management of each MWO and yet retain overall responsibility and oversight at the headquarters level. The instructions list numerous responsibilities for Army organizations; however, Army headquarters officials emphasized the following key duties for the organizations with primary responsibilities:

- The Deputy Chief of Staff for Operations has responsibility for prioritizing the required modifications for technical and safety issues, justifying and monitoring the overall budget, and allocating the approved funding.
- The Deputy Chief of Staff for Logistics has responsibility for overall supply and maintenance support and for knowing the status of MWOs.
- The Acquisition Executive has responsibility over modifications to correct or enhance the operations of weapon systems still being acquired.
- The Army Materiel Command has responsibility over modifications to correct or enhance the operations of weapon systems that are no longer being acquired and for other equipment items. In addition, the Army Materiel Command is executive agent for the headquarters and, as such, is responsible for knowing the status of MWOs and for ensuring that each MWO is complete and conforms with Army policy and procedures before the modification is done.
- Program sponsors[2] for individual weapon systems and other equipment items are responsible for executing each MWO—acquiring the various components needed to modify the weapon systems and equipment, putting

[2]We use the term program sponsor to include project managers of major weapon systems, such as the Abrams tank or Blackhawk utility helicopter; weapon system managers of sustained weapon systems, such as the Iroquois (Huey) utility helicopter; and product centers for equipment, such as the Squad Automatic Weapon. There are numerous program sponsors, and each is responsible for managing multiple MWOs.

together the applicable MWO kit,[3] ensuring logistical support items are addressed, and managing the modification process on a day-to-day basis. The MWO program sponsors for systems still being acquired are managed under the Program Executive Office of the Army Acquisition Executive, and the program sponsors for systems no longer being acquired are managed under the commodity commands of the Army Materiel Command.

In January 1997, the Army formed a process action team, including representatives from the organizations with program management responsibility, to study how the program could be improved. The Army also hired a contractor to assist in evaluating how automated information might be used to support program management. We coordinated with the process action team and have provided the team with information as our evaluation progressed. The process action team expects to provide its recommendations to the Army by October 1997.

Results in Brief

Army headquarters officials and Army Materiel Command officials no longer have the information they need to effectively oversee and manage the Army's MWO program. This occurred because the centralized database to track installation and funding was discontinued; control over modification installation funding was transferred from the headquarters level to individual program sponsors; and the authority over configuration control boards, which ensured the completeness and compliance of MWOs with policy, was transferred to individual program sponsors. As a result, Army headquarters and Army Materiel Command officials do not have an adequate overview of the status of equipment modifications across the force, funding requirements, logistical support requirements, and information needed for deployment decisions. The lack of information is also a problem at field units. Maintenance personnel have not always known which modifications should have been made to equipment or which modifications have actually been made. In addition, maintainers of equipment have not always received the technical information they need in a timely manner to properly maintain modified equipment.

Maintenance personnel in the field have had difficulty obtaining spare parts to maintain modified equipment because program sponsors frequently had not ordered initial spare parts when they acquired modification kits. Army headquarters and Army Materiel Command

[3]An MWO kit includes the major upgraded or enhanced components; installation hardware, such as nuts and bolts; special tools; and technical instructions on the installation of new parts and disposal of old parts.

officials believe these problems occurred because they lost oversight and control of the program and policies and procedures were not being consistently applied by the individual program sponsors. Because spare parts have often not been available, maintenance personnel have made additional efforts to maintain modified equipment. Also, supply system personnel have not always followed policies and procedures to ensure that supply system records were updated to show the addition of new spare parts and the deletion of replaced spare parts. As a result, the Army's budget for spare parts may not reflect accurate requirements for new components to repair and maintain modified weapon systems and equipment.

Maintenance personnel in the field have also experienced a variety of problems in implementing MWOs. For example, because multiple MWOs for the same piece of equipment were not always coordinated, the costs of modifications have increased, and reportable mission time could be adversely affected at some units. Furthermore, maintainers have not always received adequate notice of pending modifications, and as a result, training schedules and the maintenance of equipment have been adversely affected. Finally, we were told that various items of equipment did not always work together once some modifications were made; hence, improved operational capability was lost. According to Army headquarters and Army Materiel Command officials, these problems also occurred because of their loss of oversight and control.

Army Officials and Field Personnel Do Not Have Ready Access to Needed MWO Information

The Army does not currently maintain centralized information to track the status of equipment modifications. Instead, it relies on the individual program sponsors to capture the information they need to track the separate modifications for which they are responsible. As a result, Army headquarters and Army Materiel Command officials do not have the information they need to effectively oversee this highly decentralized modification program. Moreover, the information that Army headquarters officials and maintenance personnel have for tracking modifications may not be entirely accurate. Finally, field and depot maintenance personnel do not have ready access to the information they need to determine current equipment configurations, nor do they have ready access to the technical information they need to maintain the equipment once it is modified.

Lack of Centralized Information Hampers Program Management

Individual program sponsors decide how they will track the modifications for which they are responsible. Our review showed a variety of ways that system modifications are tracked. As a general rule, for high-cost systems such as M1 tanks, Bradley Fighting Vehicles, and helicopters, the command or program sponsors established databases showing systems that were modified and systems that were not. However, for high-density, widely dispersed systems such as M113 armored personnel carriers, trucks, and radios, program sponsors make very little or no attempt to track which systems were modified.[4]

To carry out its management functions, the Army Materiel Command had previously developed an integrated database to track the status of MWO installation and funding. However, the Command quit using the system because the Army (1) discontinued funding to maintain the portion of the system used to track MWO installation and (2) canceled the remaining portion of the system because it was not chosen as a Department of Defense (DOD) standard system to track funding. As noted, a contractor is currently studying the automated data needs of the MWO program.

The potential problems created by the lack of centralized information readily available to Army officials to track modifications were highlighted in a 1994 Army Audit Agency report.[5] The report pointed out that the Army Materiel Command needed up-to-date equipment configuration information to satisfy requirements that pertain to readiness, safety, and compliance with laws. The report also noted that without a centralized information system, the Command's current and future ability to plan for the sustainment of weapon systems was weakened. Furthermore, this could affect the Army's current and future readiness position and adversely affect troop survivability.

Army Headquarters Officials Do Not Have Information They Need to Properly Oversee the Program

Army headquarters and Army Materiel Command officials responsible for formulating the MWO program budget and for ensuring that upgraded and enhanced equipment is available to satisfy the Army's force structure have limited information about what MWO funds have been spent, what equipment has been modified, and what equipment still needs to be modified. Due to the decentralized nature of the program, the Army

[4]The program sponsors for the M1 Abrams tank and the Bradley Fighting Vehicle maintain separate databases that show the status of the MWOs installed on equipment. For aviation systems, the MWO program sponsors share a common database, maintained by a contractor, which shows the status of all installed and uninstalled MWOs for each helicopter. Many other program sponsors maintain no automated database on the status of their MWOs.

[5]Modification Program, U.S. Army Audit Agency (CR 95-200, Nov. 15, 1994).

budgets for MWOs through each program sponsor, who has discretion in spending and transferring funds. While the data available from program sponsors provide some information, Army headquarters officials told us they do not have ready access to this information and that it is insufficient to enable them to track budget expenditures.

As previously stated, not all program sponsors track the status of their MWOs. While the information for tracked systems provides some degree of control over the configuration, such information is not available for all weapon systems and equipment. Moreover, headquarters officials maintain that these individual tracking systems do not have all the information they need to make informed decisions and are not readily accessible. The lack of timely information on equipment configuration could have potential adverse effects. For example, if the Army deployed a mechanized infantry division, it would need to know the latest configuration of the division's tanks, Bradley Fighting Vehicles, helicopters, and trucks for mission considerations as well as to ensure that the appropriate parts needed for maintenance were on hand. To determine the latest configuration of this equipment, Army officials would have to contact the respective systems' program sponsors to determine how many tanks, Bradleys, and helicopters of each configuration there were in the division—a time-consuming process.

In addition, civilian aviation and Army ground maintenance personnel at Fort Hood, Texas, and Fort Carson, Colorado, told us that the accuracy of the databases may be suspect. For example, they said that in some instances modified parts had been removed from aircraft such as the Huey utility helicopter and nonmodified parts had been reinstalled. This occurred because either the unit did so intentionally or no modified parts were in stock when the new parts broke. As a result, the configuration of these aircraft and ground equipment are not always accurately portrayed in the database used by the maintenance personnel, and Army headquarters officials would not know the current configuration for these aircraft or ground equipment. Without the latest and most accurate configuration information, it is difficult to ensure that deploying units have the latest, most enhanced, and most survivable equipment. Logistics support is also complicated because planners do not know which type of and how many spare parts are needed to support the unit.

Depot Maintenance Personnel Lack Information Needed for Overhaul of Equipment

Depot maintenance personnel at the Anniston Army Depot, Alabama, told us they need current and accurate configuration data to overhaul equipment but that they do not have such data. To overhaul equipment, they need to know whether any modifications or components are missing. Lack of good configuration data makes it difficult to accurately estimate the costs of overhauls and to have the proper kits and repair parts on hand. Officials said that, as a result, they expend additional labor for physical inspections and make allowances in their cost estimates to cover unanticipated problems. For example, depot personnel had to visually inspect 32 National Guard trucks in the depot for overhaul because they had no way of knowing whether two authorized modifications had been made when the vehicles arrived. When this happens, the overhaul program is delayed while depot personnel order the parts or kits. However, if MWO kits are not installed at the time the modification is made to the fleet, the kits are often no longer available.

Field Maintenance and Support Personnel Do Not Have Timely Equipment Configuration and Other Technical Information

Field and support organization personnel also told us they have trouble identifying what the configuration of weapon systems and equipment should be and whether modifications have been made. They told us they need to know whether the configuration of weapon systems and equipment is up-to-date and what is required on the item in order to maintain it. They said that this problem is especially acute for items that are transferred from other units. These officials said they had sometimes spent many hours inspecting equipment to determine its current configuration because determining whether modifications had been done was not easy. For example, during our visit to Fort Carson, Colorado, a maintenance chief said that all authorized modifications on two helicopters he had received from another geographic area were supposed to have been made, but in preparing them for deployment, a visual inspection showed some modifications had not been made. According to the chief, a contractor team had to make the necessary modifications before the aircraft could be deployed.

No tracking information and no central list of modification changes that should have been made are available for equipment with lower dollar values, like trucks. According to field personnel, the only way to determine the configuration of weapon systems or equipment is to do a physical inventory and compare the results to similar items that are already assigned to the unit.

Maintenance personnel at several locations said that an information system that tracks both the completion of MWOs and any removal or transfer of major components would be useful. However, they would rather have this capability added to their existing maintenance information system than have an entirely new information system to maintain and use. We were told this tracking information will become especially critical in the future as more modifications involve software revisions. Without tracking all of the MWO changes, removal or transfer of major components, and software revisions, the configuration data recorded in the information system will be inaccurate.

Field and support organization personnel told us that they also need up-to-date technical information to maintain equipment. The Army's interim guidance requires technical publications to be updated and distributed to field locations before modifications are made. However, maintenance personnel from Fort Hood, Texas, and Fort Campbell, Kentucky, told us that technical manual updates are published only on a yearly basis and that they do not receive updated technical publications in a timely manner. If the modification and resulting configuration change occur between updates, the unit may have to wait months before receiving the updated technical information. This delay not only prevents maintenance personnel from using the latest techniques to troubleshoot equipment but it may also result in wasted effort and impede supply personnel from ordering the correct repair parts.

A division aviation maintenance officer at Fort Campbell cited several instances in which the lack of up-to-date technical manuals caused wasted effort or delayed the installation of the modification. For example, in July 1996, when division maintenance personnel modified the fuel subsystem on the Apache attack helicopter, they did not receive revisions to the supply parts manual. Subsequently, the aircraft was grounded and the maintenance team wasted many hours troubleshooting because the old manual did not identify the new fuel transfer valve. This new part would have been identified in the revised manual. In another instance, they had to delay the installation of the embedded global positioning system on the Apache by 2 weeks because the Apache program office did not provide changes to the maintenance test flight and operator manuals.

Army Units Do Not Always Have Ready Access to Spare Parts

The Army sometimes loses portions of its enhanced equipment capabilities achieved through equipment modifications because Army units cannot always obtain spare parts for its modified weapon systems and equipment. This occurs because program sponsors do not always order initial spare

parts for the supply system when they procure MWO kits. Furthermore, they do not always modify the spare parts that are at the depot and unit level to the configuration of the new component. Army officials reviewing the MWO program believe that these problems occurred because Army regulations are not clear about whether program sponsors are supposed to provide initial spare parts when they acquire the MWO kits. As a result, Army units increase their efforts to keep equipment operational and ready. In addition, program sponsors and supply system personnel do not always follow policies and procedures to ensure that supply system records are updated to show the addition of new items and the deletion of replaced items. When the supply system records are inaccurate, the Army's budget may not reflect accurate requirements for new spare parts to repair and maintain modified weapon systems and equipment.

Spare Parts for Modified Equipment Are Difficult to Obtain

Some program sponsors have not used their limited funds to order initial spare parts for the supply system, according to Army officials responsible for the management of the MWO program. Ideally, initial spare parts would be provided to bridge the gap between the modification of equipment and the entrance of the replenishment spare parts into the Army's supply system. Providing initial spare parts at the time of modification is needed because the supply system can take 18 to 24 months or more to provide replenishment spare parts, according to aviation supply representatives.

According to Army civilian aviation maintenance personnel at Fort Hood and Army aviation and ground maintenance personnel at Fort Carson and Fort Campbell, program sponsors did not always modify spare parts at unit and depot locations when equipment was modified. For example, we were told that the Apache attack helicopters were being modified with an improved fuel subsystem, but at least four major components were not available in the depot supply system. As a result, aviation maintenance personnel had to take parts from five MWO kits intended for other aircraft. This MWO had been ongoing for 15 months. Aviation personnel said this occurred because at least some portion of the components stored at the depot had not been modified to the new configuration.

One program sponsor told us his office was not required to buy initial spare parts or modify parts located at depots when they modified equipment in the field. However, the Army's interim operating instructions require program sponsors to ensure all necessary integrated logistical support parts items are addressed. Furthermore, according to Army Regulation 700-18, ordering initial spare parts is part of the total integrated

logistical support package for systems and end items. This regulation, which does not specifically refer to modifications, requires program sponsors to coordinate logistical support requirements with all agencies and activities concerned with initial materiel support for weapon systems and equipment. According to Army headquarters officials, both the interim guidance and the regulation require program sponsors to provide initial spare parts and to modify spare parts, but neither may be clear enough to ensure that all program sponsors do it for modifications. In addition, Army headquarters officials told us that when the Army Materiel Command used configuration control boards, comprised of technical and administrative representatives, to ensure the MWOs were complete and conformed with Army policies and procedures, the need to buy spare parts was part of the approval process. The Army Materiel Command lost this quality control when the reviews were decentralized to the program sponsors.

Army personnel at the four locations we visited told us that they had to take additional measures to support their equipment because they had experienced problems obtaining spare parts. They stated that if spare parts were not available, they took components from MWO kits. For example, the only way to obtain spare parts for the new fuel control panels—part of the Apache attack helicopter fuel crossover modification—was to take them from kits that were needed to modify other Apache helicopters. In addition, they had obtained parts outside the normal supply system by fabricating parts locally and by buying parts directly from contractors with local funds. These activities have led to higher costs and reduced efficiencies at units we visited.

Management of MWO Program Contributes to Inventory and Budget Errors

In reviewing 73 MWO cases, we attempted to determine whether the Army had properly phased out old spare parts and added new items to its supply system to support newly modified equipment. Because the Army does not have an automated list of major components in MWOs, we encountered difficulties in trying to make this analysis and could not identify a significantly large number of the major components. We compared information on those major components that we could identify with the Army's budget justification report and inventory records and found many irregularities. For example,

- national stock numbers had not been assigned for some components;
- some items with national stock numbers could not be tracked into the supply system; and

- relationship codes, which show whether old items are to be phased out of the supply system, were not always assigned.

We were unable to measure the impact of these irregularities from our relatively small sample of MWOs; however, we believe that they indicate long-standing weaknesses in the Army's management of spare parts. For example, using a larger universe, we reported on similar errors in the Army's budget justification report in December 1995.[6] In that report, we noted that the Army's budget justification report for spare parts contained numerous errors, including errors in the relationship codes and inaccurate records for items being repaired at maintenance facilities. We reported that as a result of the errors, the Army lacks assurance that its budget requests represent its actual funding needs for spare parts.

Field Maintenance Personnel Experience Problems in Implementing the MWO Program

Field maintenance personnel cited numerous problems in modifying their weapon systems and equipment. For example, they stated that (1) the completion of multiple MWOs on the same piece of equipment is not always coordinated, or not all equipment is modified at the same time; (2) they do not always receive adequate notice of MWOs; and (3) modified equipment does not always work together with other equipment once the modification takes place. As a result, they believe some units are losing equipment capability or experiencing reduced reportable mission time, the cost to install MWOs is increasing, and the training of unit personnel may be adversely affected. Army headquarters and Army Materiel Command officials believe these problems are also occurring because of their loss of oversight and control over the program and the inconsistent implementation of policies and procedures by program sponsors, especially in negotiating fielding plans with the affected organizations.

Difficulties Encountered by Unit Maintenance Personnel

Maintenance personnel told us that the completion of multiple MWOs on the same equipment is not always coordinated. For example, the National Guard is testing a program to place some of its equipment in long-term preservation storage. Equipment in long-term storage testing at the Camp Shelby, Mississippi, mobilization and equipment training site has been taken out of storage several times so modifications can be made. As a result, the program was disrupted, and additional labor hours were expended, according to a National Guard official. The lack of coordination in the future could have even greater cost implications because the Guard

[6]Army Inventory: Budget Requests for Spare and Repair Parts Are Not Reliable (GAO/NSIAD-96-3, Dec. 29, 1995).

is planning to place 25 percent of its equipment in preserved storage and if it implements recommendations we are making in another report,[7] the Guard would put an even larger percentage in storage.

In another example, an aviation maintenance chief told us that two labor-intensive modifications were planned for consecutive years on each of 33 Blackhawk utility aircraft belonging to two units at Fort Carson. He said that making both modifications concurrently made more sense. Since a modification causes an aircraft to be grounded, the additional downtime to install each modification consecutively would adversely affect the reportable mission time for each unit.

Maintenance personnel also noted that inefficiencies had resulted when not all modifications were done at the same time. For example, when the Army upgraded the armament fire control system on the M1 tank at the Camp Shelby mobilization and training site, a contractor team installed new software cards in the fire control system and 2 months later, a team from the Anniston Army Depot made needed mechanical adjustments to the same tanks. According to Army officials, both functions could have been done at the same time, thereby reducing the time the unit was without its equipment.

The direct support maintenance chiefs and general support maintenance personnel at Fort Hood and Fort Carson told us they did not always receive adequate notice of modifications. This situation disrupted their ability to meet training schedules that were set up 12 months in advance and interfered with their ability to maintain their equipment.

After some modifications are done, some equipment does not always work together properly, according to aviation maintenance personnel at Fort Hood. For example, although civilian aviation personnel at Fort Hood modified the Blackhawk utility helicopters to work with night vision goggles, they could not get replacement radios from a different program sponsor that were compatible with the night vision goggle system, and night operational capability was lost.

Army headquarters and Army Materiel Command officials believed these problems had occurred because of their loss of oversight and control over the program and the inconsistent implementation of policies and procedures by program sponsors. The Army's Interim Operating

[7]Army National Guard: Sharing Unit Training Equipment Would Help Avoid Maintenance Costs (GAO/NSIAD-97-206, Sept. 29, 1997).

Instructions for Materiel Change Management requires individual program sponsors to prepare a fielding plan for each modification. The fielding plan calls for coordination and adequate notice when a modification is to be done.

Conclusions

The highly decentralized nature of the MWO program underscores the need for Army headquarters officials to have ready access to program data and information and adequate management controls to ensure that program implementation complies with policies and procedures. Even though the database they used was discontinued in part because it was not accepted as a standard DOD system, Army headquarters officials told us that the unavailability of information on the status of MWOs, the status of funding, and the configuration of weapon systems and equipment has made it difficult for managers at all levels to effectively carry out their respective responsibilities and make informed decisions on such things as funding, deployment, and logistical support of weapon systems and equipment.

The program sponsors have been inconsistent in providing initial spare parts, ensuring that spare parts are added to the supply system, and keeping technical information updated for the field maintainers. Furthermore, program sponsors have not always adequately coordinated the completion of MWOs with other sponsors and with the field maintainers. The Army guidance on these processes is not clear, and the headquarters' ability to ensure that existing policies and procedures were complied with was diminished when the responsibilities of configuration control boards were transferred to program sponsors. As a result, field maintainers have experienced difficulty in obtaining spare parts and current technical information and have experienced inefficiencies in getting their weapon systems and equipment modified.

Program sponsors have varying amounts of information on their MWOs, ranging from none to fairly complete, and do not have ready access to information needed to coordinate with other program sponsors. Those program sponsors without a database are limited in managing their own programs. Field maintainers do not have easy access to information on MWOs that should have been installed or scheduled for future installation. At the unit level, the lack of information has manifested itself in various inefficiencies related to the coordination and scheduling of the installation of MWOs and has sometimes prevented units from knowing the configuration of their equipment. It is important that these modifications

be done as efficiently as possible to minimize the reportable mission time the equipment is unavailable to units.

The Army's creation of a process action team to develop revised policies and procedures and its hiring of a contractor to examine automated information needs are steps toward correcting the weaknesses noted in this report. Improved management of this program would provide more assurance that improved capabilities are effectively and efficiently integrated into the Army's equipment in the most expeditious manner.

Recommendations

In considering the upcoming results of the MWO process action team, we recommend that the Secretary of the Army

- direct actions necessary to provide managers at all levels ready access to the information they need to oversee, manage, and implement the MWO program and to ensure compliance with Army policies and procedures;
- clarify regulations to ensure that program sponsors and supply system personnel provide proper logistical support for modified equipment, including (1) ordering appropriate initial spare parts when MWO kits are ordered, (2) updating technical information and providing it to units when MWO kits are installed, and (3) properly phasing out old spare parts and adding new items to its supply system; and
- establish an effective mechanism for program sponsors to coordinate and schedule their MWOs, among themselves and their customers, to reduce the amount of manpower and to minimize the reportable mission time required to complete the MWOs.

Agency Comments

In written comments on a draft of this report, DOD concurred with our findings and our recommendations (see app. I), acknowledging that improvements to the weapon system and equipment modification program were needed. Regarding our first recommendation, DOD agreed that managers at all levels need ready access to information to oversee, manage, and ensure compliance with Army policies and procedures. It noted that the process action team is developing a recommendation for an MWO integrated management information system that would obtain information from already established databases. DOD believes that such a system would provide a cost-efficient, nonlabor-intensive management tool to assist managers in tracking all facets of MWOs. Approval of a proposal for a new study effort to design and develop this system is pending.

DOD also agreed with our recommendation that the Secretary of the Army clarify regulations to ensure that program sponsors and supply system personnel provide proper logistical support for modified equipment. DOD stated that Army Regulation 750-10 is being totally revised to clearly define roles and responsibilities, thereby making it a joint acquisition and logistics regulation that can be used by both communities. The revised regulation will adopt a modified materiel release process that would address the logistical support issues raised in our recommendation as well as other areas of concern identified by the process action team.

Finally, DOD agreed with our recommendation that the Secretary of the Army establish an effective mechanism for program sponsors to coordinate and schedule their MWOs, among themselves and their customers. DOD stated that the revised Army Regulation 750-10 will address the issue of coordination between program sponsors and ensure that MWOs are completed at all units at one location at the same time where possible.

We believe that these actions, if properly implemented, will help to further improve the effectiveness and efficiency of this program.

Scope and Methodology

We interviewed officials and reviewed program records at the Army Materiel Command, Alexandria, Virginia; the Army Aviation and Troop Command, St. Louis, Missouri; and the Army Tank-Automotive and Armament Command, Warren, Michigan, to identify how the MWO program works and to identify any problems. We also interviewed officials and reviewed records at the U.S Army Materiel Command; the Assistant Secretary of the Army for Research, Development and Acquisition; the Deputy Chief of Staff for Logistics; and the Deputy Chief of Staff for Operations at Army headquarters to determine their role in the modification program and what information they need to manage funding, resource allocations, deployment decisions, and supportability.

We also interviewed Directorate of Logistics personnel and general and direct support personnel, reviewed records, and made on-site observations at Fort Hood, Texas; Fort Campbell, Kentucky; and Fort Carson, Colorado, to determine whether they were having any difficulties with the completion, scheduling, or supply support obtained for MWOs. In addition, we interviewed civilian and contractor personnel that provided regional aviation maintenance support at Fort Hood and Fort Campbell and reviewed records to determine whether they were experiencing similar

problems. Furthermore, we interviewed officials at Anniston Army Depot, Alabama, and Camp Shelby, Mississippi, to determine how the MWO programs affect maintenance and overhaul programs.

To evaluate how well the Army integrates its MWO program with the supply support system, we judgmentally selected 73 recent MWOs for aviation systems; weapons and tracked combat vehicle systems; and small arms. The Army does not have a complete list of MWOs, MWO kits, or the major components in the kits. It has automated data only on MWOs for high-dollar weapon systems. For the MWOs selected, we attempted to manually identify the major components in the kits, enter them into a database, and compare them to the Army's automated inventory (April-June 1997 master data record) and budget justification (Sept. 1996 budget stratification report) records.

We were not able to quantify the problems with the supply system identified in this report because (1) we could not identify a significantly large universe of new replacement items and match them with the related item being phased out of the system and (2) for the items identified, we could not consistently trace them into the automated inventory and budget justification records. Furthermore, we could not determine the extent of some of the problems identified through our field visits because some of the newer MWOs in our sample have not been operational long enough for their parts to fail.

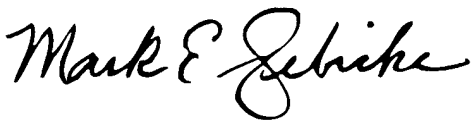
We have used the automated budget justification records and automated inventory databases in prior evaluations and reported that they contain significant errors regarding the relationship codes between secondary inventory items being added to the system and the replaced items.[8] These databases are, however, the only available information on inventory and budget justifications for Army secondary items.

We performed our review between January 1996 and August 1997 in accordance with generally accepted government auditing standards.

We are sending copies of this report to the Secretaries of Defense and the Army; the Director, Office of Management and Budget; and other interested parties.

[8]Defense Inventory: Shortages Are Recurring, but Not a Problem (GAO/NSIAD-95-137, Aug. 7, 1995) and Army Inventory (GAO/NSIAD-96-3 Dec. 29, 1995).

Please contact me on (202) 512-5140 if you have any questions concerning this report. Major contributors to this report are listed in appendix II.



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List of Congressional Committees

The Honorable Fred Thompson
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The Honorable John Glenn
Ranking Minority Member
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Comments From the Department of Defense

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ACQUISITION AND TECHNOLOGY

(L/MRM)

19 SEP 1997

Mr. Mark E. Gebicke
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Affairs Division
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Washington, DC 20548

Dear Mr. Gebicke:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report -- "ARMY EQUIPMENT: Management of Weapon System and Equipment Modification Program Needs Improvement," dated August 14, 1997 (GAO Code 703182/OSD Case 1437). The DoD concurs with subject draft report.

The DoD recognizes that improvements to the weapon system and equipment modification program are needed. The Department of the Army had already developed a Process Action Team to identify problems and develop recommended solutions. In addition, the Department of the Army initiated an independent contractor effort to review the full spectrum of the problem and directly interfaced with the GAO audit team as they developed their strategies. The DoD supports these initiatives to further improve the effectiveness and efficiency of this program.

The Department appreciates the opportunity to review and comment on the draft report.

Sincerely,

James B. Smalkin

Roy R. Willis
Acting Deputy Under Secretary
of Defense (Logistics)

Enclosure

GAO DRAFT REPORT DATED AUGUST 14, 1997
(GAO CODE 703182) OSD CASE 1437

"ARMY EQUIPMENT: MANAGEMENT OF WEAPON SYSTEM AND EQUIPMENT MODIFICATION PROGRAM NEEDS IMPROVEMENT"

DEPARTMENT OF DEFENSE COMMENTS TO
THE GAO RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommended that the Secretary of the Army direct actions necessary to provide managers at all levels ready access to the information they need to oversee, manage, and implement the modification work order (MWO) program, and to ensure compliance with Army policies and procedures. (pp. 19-20/GAO Draft Report)

DOD RESPONSE: Concur. The Army is aware of the need for managers at all levels to have access to various degrees of MWO information. This includes the Battalion Maintenance Sergeant/Officer, who needs to know the configuration of the equipment within their motor pool, through the various levels of management at Brigade, Division, Corps, Major Subordinate Commands, and Headquarters. The Process Action Team (PAT), through the contractor effort, is developing a recommendation for an MWO Integrated Management Information System (MIS). This MIS is not envisioned to be a new central database, but a gateway system that will pull from already established databases. The development of this MIS will provide a cost-efficient, non-manual, non-labor intensive management tool to assist maintenance managers in tracking all facets of MWOs. The PAT is sponsoring a new study effort to design and develop this MIS through the Army Studies Program. This study has been recommended for approval by the Studies Program Coordination Committee (SPCC) working group, and is awaiting final approval by the SPCC, tentatively scheduled for September 22, 1997.

RECOMMENDATION 2: The GAO recommended that the Secretary of the Army clarify regulations to ensure that program sponsor and supply system personnel provide proper logistical support for modified equipment, including (1) ordering appropriate initial spare parts when MWO kits are ordered, (2) updating technical information and providing it to units when MWO kits are installed, and (3) properly phasing out old spare parts and adding new items to its supply system. (pp. 19-20/GAO Draft Report)

Major Contributors to This Report

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