



Office of the Chief Internal Auditor

Audit Report

Supply and Equipment Depot

December 3, 2015



OFFICE OF THE CHIEF INTERNAL AUDITOR

Commission of the South Carolina Department of Transportation

The Honorable Lawrence K. Grooms, Chairman
South Carolina Senate Transportation Committee

The Honorable Hugh K. Leatherman, Sr., Chairman
South Carolina Senate Finance Committee

The Honorable Merita A. Allison, Chairman
South Carolina House Education and Public Works Committee

The Honorable W. Brian White, Chairman
South Carolina House Ways and Means Committee

Dear Distinguished Legislators:

The Office of the Chief Internal Auditor has completed a Supply & Equipment Office and Equipment Depot Audit. We are transmitting to you the report on this audit on compliance with Section 57-1-360.

We conducted this audit in accordance with Generally Accepted Governmental Auditing Standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our observations and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for these observations and conclusions.

Please contact us if you have any questions or comments.

Respectfully submitted,

Paul B. Townes

Paul B. Townes, CPA, CFE
Chief Internal Auditor
Office of the Chief Internal Auditor

EXECUTIVE SUMMARY

The Supply and Equipment Division organizations (Supply and Equipment Office, Supply Depot, Equipment Depot, and Radio Communications) provide essential equipment management functions for SCDOT. These functions provide SCDOT personnel with immediate access to necessary and essential products, vehicles, equipment, and radio communications so employees can fulfill the Agency's missions safely and cost effectively at any time and during any situation – routine, emergency, or otherwise.

Our audit focused on the Equipment Depot, which is responsible for receiving and preparing new vehicles and trucks and heavy and light construction equipment items ordered by the Supply and Equipment Office. Items are received and prepared for use by the Equipment Depot in Columbia, are issued to the field, and are then serviced and maintained by 48 equipment repair shops throughout South Carolina. SCDOT's equipment repair shops are staffed and equipped to service and maintain only SCDOT vehicles, trucks, and equipment. The staff also is responsible for collecting mileage and/or hourly logs to aid in determining the utilization of the equipment. The Equipment Depot also receives old items that are turned-in when new items are issued and prepares them for re-issue or sale.

Audit Objectives

- Ensure the field personnel are involved in the decision making on vehicles/equipment features and specifications on order
- Determine if the field personnel utilize the warranties provided with the vehicles to reduce maintenance costs.
- Verify if SCDOT complies with EPA Act 92 that requires the Agency use a minimum number of light duty alternative fuel vehicles in their fleet.

Summary of Observations and Recommendations (O&Rs):

O&R 1- Some equipment is not placed into service as quickly as it could be because of the time it takes at times to be received, inspected, and upfitted at the Equipment Depot. We recommend any vehicle/equipment that does not require extensive upfitting, be sent to directly to the districts to be upfitted after they are received and inspected at the Equipment Depot.

O&R 2 – No written guidance exists when a shop should outsource a piece of equipment to a dealer for a warrantable repair or perform the repair in-house. We recommend written guideline be developed on when to perform a recall/warranty in-house or when to have the recall/warranty performed by an authorized dealer.

Testing Result and Conclusion:

OCIA interviewed the Director of the Supply and Equipment to gain an understanding of how equipment needs and specifications are determined. The OCIA also interviewed personnel in four districts (usually the District Mechanical Engineer) to get their opinions on the equipment ordering process and to determine if they feel their needs and opinions on equipment are taken into account prior to the orders being placed. Based on comments by the district personnel, the

Supply and Equipment Depot is responsive to the districts in assessing both the needs and specifications of new equipment.

The area for possible gain would be to get the vehicles or equipment in-service quicker. To do this, district repair shops should be utilized to perform the necessary upfit. However, the Equipment Depot is concerned that taking the delivery and inspection function away from a central location could cause a problem in the future. The Equipment Depot is concerned when an order of vehicles or equipment are delivered that do not match the solicitation document standards, which has happened, it could be difficult to get all items corrected in a timely fashion. Usually, when there is a problem with the vehicles or equipment that did not match the solicitation standards, the vendor can send someone directly to one location, Shop Road, and correct the problems in a couple of days. If, the vehicles or fleet is scattered across the state it could require more time and expense to get the vendor to correct the problems, which may delay the in-service date even more.

Management provided assurances that the agency was in compliance with EPA Act 92. Based on the information provided, the State of South Carolina needs to purchase 75% alternative fuel vehicles with a GVWR rating of less than 8,600 pounds to comply with the alternative fuel mandate. SCDOT had 100% compliance of the vehicles requested in 2013, and 2014. In 2015, the compliance percentage was 81%. In all three years cited, SCDOT exceeded the mandate which contributed to the state wide goal for South Carolina.

Supply and Equipment Depot Audit

Audit Objectives and Authority

The Supply and Equipment Office and Equipment Depot Audit was approved as a part of the Office of Chief Internal Auditor's (OCIA)'s 2013-2014 internal audit plan. According to SCDOT's The State of Fleet Operations published in 2014, the Agency currently has approximately 3,100 vehicles and trucks and over 5,200 heavy and light construction equipment items. The objectives of this audit are:

- Ensure that the field personnel have a voice in the type of vehicles/equipment features and specifications on order.
- Determine if the warranties that are provided with the vehicles are utilized by the field to reduce SCDOT's maintenance costs.
- Verify that SCDOT complies with EPA Act 92, which requires the Agency use a minimum number of light duty alternative fuel vehicles in their fleet.

Audit Procedures

Besides learning how equipment needs were developed, the OCIA selected a random sample of vehicles and equipment acquired in 2012 and 2013, to review the time it took for equipment to be issued to the district once it was received at the Equipment Depot from the supplier. In the random sample of equipment, OCIA also looked at the warranty screens to see if the warranties were entered as well as any listed repairs to see if any should have been taken to the supplier for repairs. In regards to repairs, our review was limited, as the district representatives OCIA spoke with mentioned that some shops may choose to fix a minor repair in-house instead of returning to a dealer to avoid the associated downtime and staff it takes to drive to a dealership to drop off the vehicle.

AUDIT OBSERVATIONS AND RECOMMENDATIONS

Observation 1:

Currently all vehicles and equipment is delivered directly to the Supply and Equipment Depot. After the vehicles and equipment are received and inspected to ensure they meet the solicitation standards, the equipment is paid for and prepped for issuance to the district. Prepping includes recording information and adding decals, lights, item number, and any other additional support equipment that may be required. OCIA reviewed a sample of equipment acquired in 2012 and noticed that in most cases it took two weeks to begin the up-fit after the delivery date. Following the start of the up-fit, it could take between a week and two months to complete the up-fit and have the equipment ready for issuance to the district. It was also noticed that once the equipment is issued to the district, the district shop may still add additional equipment such as fire extinguishers and other items even further delaying the ultimate in-use date. OCIA also reviewed a sample of 2013 equipment acquisitions and the results were similar. It was pointed out that the received date, used in our test, may be incorrect if the vehicles or equipment did not

meet the specifications listed in the solicitation document and the Equipment Depot was waiting on the vendor to correct the problem.

Recommendation 1:

OCIA recommends delivering all equipment directly to the Supply and Equipment Depot to have the Equipment received, verified, and inspected in case there are any issues that affect the entire order. Once the vehicles and/or equipment have been inspected to ensure they meet the specifications, the items that require very little upfitting should be issued directly to the districts to be upfitted. The district should be able to add decals, item number, and some support equipment for most items to deploy them quicker. An inspection of the equipment can be included as part of the Quality Management Team's review to ensure all the prepping was done correctly. Larger equipment, such as trucks where dump beds need to be added, should continue to be up-fitted through the Supply and Equipment Depot. In addition to whoever performs the upfit they should also add any additional equipment that the district may add such as a fire extinguisher to avoid losing more time by requiring the district to perform additional work. Another option, if cost effective, would be to outsource the up fitting of equipment to a third party such as the selling dealer. This could reduce the timeframe from delivery to placing the item in service.

Observation 2:

Currently, no guidance exists on when some shops should make necessary repairs in-house or return the piece of equipment to the dealer for service. In some shops, if a recall or warrantable repair is needed some shops are making the necessary repairs in-house and others are returning to the dealer for service. Some shops expressed the need for flexibility due to the distance to the authorized dealers and the resulting down time along with the continuous need for the particular piece of equipment to be available.

Recommendation 2:

OCIA recommends that guidelines be developed on when to in-source or out-source maintenance and any associated recall/warrantable repairs. Each shop should follow the decision trees that are listed in the AASHTO report "Decision Making for Outsourcing and Privatization of Vehicle and Equipment Fleet Maintenance" that was created in March 2012. Then Equipment Depot should make a list of any repairs that should definitely be made at an authorized facility (dealership) to avoid any problems with warranty's being voided.

Department Response

MEMORANDUM

TO: Paul B. Townes, CPA, Chief Internal Auditor

FROM: Christy A. Hall, P.E., Acting Secretary of Transportation

DATE: September 22, 2015

SUBJECT: SCDOT Response to the Supply and Equipment and Equipment Depot Audit

SCDOT has received a copy of your audit of the Supply and Equipment Office and Equipment Depot. We offer the following responses to your two recommendations:

Recommendation 1:

OCIA recommends delivering all equipment directly to the Supply and Equipment Depot to have the Equipment received, verified, and inspected in case there are any issues that affect the entire order. Once the vehicles and/or equipment have been inspected to ensure they meet the specifications, the items that require very little upfitting should be issued directly to the districts to be upfitted. The district should be able to add decals, item number, and some support equipment for most items to deploy them quicker. An inspection of the equipment can be included as part of the Quality Management Team's review to ensure all the prepping was done correctly. Larger equipment, such as trucks where dump beds need to be added, should continue to be up-fitted through the Supply and Equipment Depot. In addition to whoever performs the upfit they should also add any additional equipment that the district may add such as a fire extinguisher to avoid losing more time by requiring the district to perform additional work. Another option, if cost effective, would be to outsource the up fitting of equipment to a third party such as the selling dealer. This could reduce the timeframe from delivery to placing the item in service.

Response:

SCDOT does not believe that issuing vehicles and equipment to the districts for minor up-fitting tasks will increase efficiency or allow equipment to be put into service sooner. Furthermore, we believe that relying on QMT inspections to monitor compliance could create an accountability or safety concern as non-compliant or unsafely prepared items could be in service for up to two years before they may be inspected.

Distributing minor up-fitting to each district would create a new responsibility to ensure preparation tasks performed in districts are accomplished uniformly, correctly, and timely. This recommendation does not account for training, annual re-training, follow-

up, site visits, and coordination that are currently not required. We believe supposed labor-hour savings or efficiency increases by de-centralizing these tasks will not be realized; instead, labor hours will increase and efficiency, consistency, and quality will decrease.

SCDOT already requires vehicle, truck, and equipment dealers to upfit components and assemblies on many items when it is advantageous and economical to SCDOT. An example of this is the attachment of permanently mounted mowers to tractors. Mowers are purchased and shipped directly to the tractor vendor for installation prior to delivery to SCDOT. SCDOT also outsources utility body installation onto trucks, warning lights installation on most equipment and other upfitting requirements when advantageous to SCDOT.

In order to address the concern relating to timeliness, the Equipment Depot has implemented a change to their organization to speed up the preparation processes and the subsequent issue of equipment. The Equipment Depot Trades Specialists who receive and inspect new equipment will also perform minor up-fitting and assist mechanics with up-fitting items.

Recommendation 2:

OCIA recommends that guidelines be developed on when to in-source or out-source maintenance and any associated recall/warrantable repairs. Each shop should follow the decision trees that are listed in the AASHTO report "Decision Making for Outsourcing and Privatization of Vehicle and Equipment Fleet Maintenance" that was created in March 2012. Then Equipment Depot should make a list of any repairs that should definitely be made at an authorized facility (dealership) to avoid any problems with warranty's being voided.

Response:

SCDOT's equipment repair shops have written guidance for warranty and contracted repairs. Revised copies of these Supply and Equipment Management Procedures that provide additional guidance are attached (revisions in bold print).

CAH:jfw

ec: Brian Keys, Deputy Secretary for Finance and Procurement
Ron Patton, Deputy Secretary for Intermodal Planning
Wendy Nicholas, Chief of Staff
Andrew T. Leaphart, Chief Engineer for Operations
Jim Feda, Director of Maintenance
John White, Director of Supply and Equipment

Attachments

File: 501.60.08-Mnt/JJF