September 22, 2009

WILLIAM T. GRAVES, JR.
MANAGER NETWORK DISTRIBUTION OPERATIONS
WASHINGTON NETWORK DISTRIBUTION CENTER

SUBJECT: Audit Report – Powered Industrial Vehicle Management System at the Washington Network Distribution Center
(Report Number NO-AR-09-010)

This report presents the results of our audit of the Powered Industrial Vehicle Management System (PIVMS)[1] at the Washington Network Distribution Center (NDC),[2] located in the Capitol Metro Area (Project Number 09XG025NO000). The Vice President, Network Operations, requested this audit. Our objectives were to determine whether the PIVMS was functioning as intended and producing efficiency improvements. See Appendix A for additional information about this audit.

## Conclusion

Management at the Washington NDC did not use the PIVMS because the system had been intentionally damaged, causing it to be non-functional and in need of extensive repair or even replacement. Therefore, the Postal Service did not realize the efficiency improvements and benefits from the PIVMS. In addition, we concluded the Washington NDC reduced workhours in tow and forklift operations, but did not implement internal controls over vehicle safety, security, and inventory.

## Damage to the PIVMS at the Washington NDC

In July of 2006, the Postal Service installed PIVMS at a cost of $804,817 at the Washington NDC/Southern Maryland Processing and Distribution Center (P&DC), which share the same facility and PIVMS. Management stated the damage to the PIVMS began several months after installation. Management believed that employees either disconnected or completely removed the Vehicle Asset Communicator (VAC) devices from the majority of the powered industrial vehicles (PIV) inventory. There was also extensive damage to the facility from powered industrial equipment. See illustrations of the damage in Appendix B.

[1] The PIVMS consists of intelligent wireless devices installed on PIVs and client-server software for access control, utilization analysis, real-time location tracking, and many other functions.
[2] The Washington NDC was once known as the Washington Bulk Mail Center (BMC). Effective August 1, 2009, all BMCs were renamed Network Distribution Centers.

The damage to the PIVMS and to the facility at the Washington NDC occurred because management did not effectively monitor employees to prevent damage. Because management did not use the PIVMS, the Postal Service did not realize the efficiency improvements and benefits of the system. For example, the PIVMS can help reduce inventory and can measure vehicle utilization attributes (such as speed, distance traveled, and idle time) to assess productivity.

We recommend the Manager, Network Distributions Operations, Washington Network Distribution Center:

1. Provide closer supervision over powered vehicle operations to ensure that damage to powered equipment vehicles and the facility does not occur and consider repairing or reinstalling the Powered Industrial Vehicle Management System.

## Other Matters – Powered Vehicle Equipment Internal Controls

To management's credit, they reduced workhours in tow and forklift operations without using the PIVMS. From FY 2006 to 2008, workhours used in tow and forklift operations decreased over 10 percent and overtime in these operations decreased by over 53 percent. We also compared the Washington NDC to the other 20 NDCs and found that it reduced more workhours and overtime than the average NDC. See Appendix B for our detailed analysis of this issue.

However, internal controls over vehicle safety, security and inventory were not in place because management did not implement compensating internal controls when the PIVMS was no longer functioning. Specifically:

- Equipment operators did not complete Occupational Safety and Health Administration (OSHA) safety checklists as required, resulting in management not identifying unsafe vehicles.

- Management did not control access to vehicles and unlicensed drivers were operating vehicles.

- Management did not assign accountability for vehicle impacts, which would have assisted in identifying the cause of the extensive damage to the building.

- Management did not monitor vehicle battery usage; therefore, batteries were not adequately maintained, resulting in shortages.

- The facility did not adequately maintain vehicles.

Consequently, the safety and security of employees and Postal Service property was at risk. See Appendix B for our detailed analysis of this issue.

During our audit, management licensed 16 of the 18 unlicensed equipment operators, implemented a vehicle safety checklist, conducted an inventory of vehicles and PIVMS replacement parts, and disposed of non-functioning batteries. At our exit conference on July 16, 2009, Washington NDC management committed to improving internal controls.

We recommend the Manager, Network Distribution Operations, Washington Network Distribution Center:

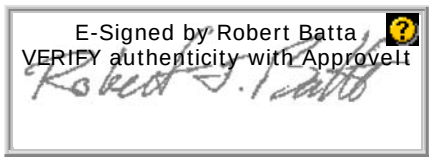
2. Improve internal controls over vehicle equipment as well as safety and security by ensuring that OSHA checklists are completed as required, equipment operator vehicle licenses are current, and vehicles and batteries are adequately maintained.

## Management's Comments

Management generally agreed with the recommendations and has taken steps to improve supervision and internal controls over vehicle equipment. Management also plans to request the reinstallation of the PIVMS at the Washington NDC. See Appendix C for management's comments, in their entirety.

## Evaluation of Management's Comments

The U.S. Postal Service Office of Inspector General (OIG) considers management's comments responsive to the recommendations in the report. We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact James L. Ballard, Director, Network Processing, or me at (703) 248-2100.




Robert J. Batta
Deputy Assistant Inspector General
for Mission Operations

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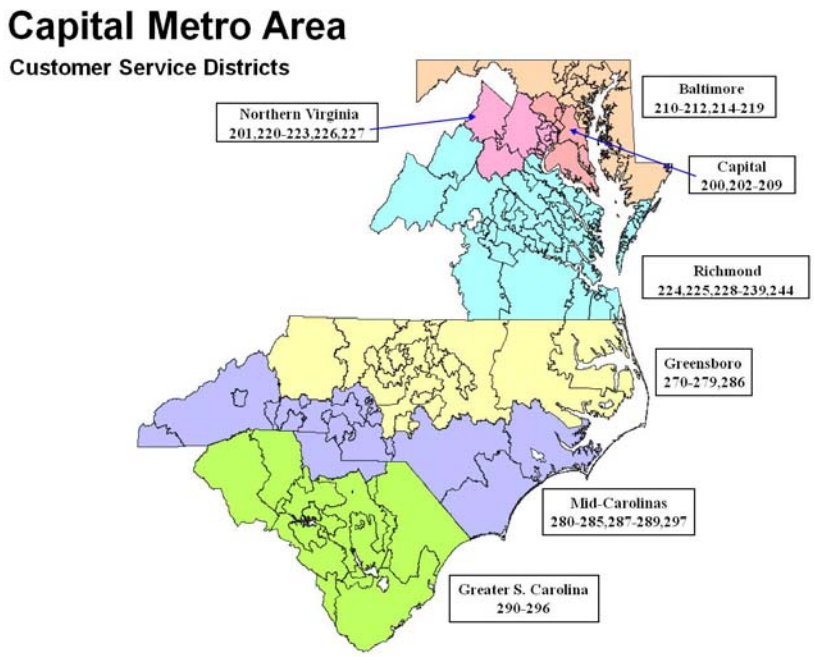
# APPENDIX A: ADDITIONAL INFORMATION

## BACKGROUND

The Washington NDC is located in the Capitol District in the Capital Metro Area. The map below shows the Capital Metro Area Districts by three-digit ZIP Code.




The Washington NDC processed over 46 million first handling pieces (FHP) and used 994,139 workhours in FY 2008. The Postal Service owns the facility, which houses both the Washington NDC and the Southern Maryland P&DC. The Washington NDC/Southern Maryland P&DC implemented the PIVMS in July 2006 at a projected cost of $804,817. The Postal Service justified the purchase stating it would:

- Eliminate unauthorized use of PIVs.
- Reduce injuries from unsafe operation of PIVs.
- Reduce damage to mail and equipment from unsafe operation of PIVs.
- Reduce workhours used to transport mail and equipment throughout the plant.
- Reduce the number of pieces of equipment needed to perform this work.
- Reduce the workhours needed to maintain the fleet of PIVs.

This implementation was part of a national contract the Postal Service awarded to I.D. Systems, Inc. of Hackensack, N.J., in January 2005 to produce and deploy the PIVMS. The Postal Service started the program as a pilot when it signed a $3.6 million contract with I.D. Systems to implement a wireless asset management system at 10 bulk mailing and distribution facilities across the country. As of March 2009, the Postal Service placed orders for PIVMS deployment in 113 facilities. The total amount funded for the PIVMS as of May 2008 was over $35 million.

The Postal Service intended the PIVMS to provide automated measurement, control, and compliance reporting of PIV operations within a plant, resulting in optimal PIV safety conditions, operations, supervision, and associated savings. Some of the major system design features included:

- Ability to conduct two-way text messaging.
- Assurance of OSHA safety compliance by only allowing currently certified operators to log on and operate specified equipment.
- An increase in safety and accountability allowed by shutting down vehicles after recording significant impacts.
- Ability to measure the amount of time that an operator is logged into a vehicle and the amount of time the vehicle is in motion.
- Ability to locate and track vehicles within a plant.

## OBJECTIVES, SCOPE, AND METHODOLOGY

Our objectives were to determine if the PIVMS was functioning as intended and producing efficiency improvements. To accomplish these objectives, we observed mail processing operations and analyzed volume and workhour trends at the Washington NDC. We benchmarked the Washington NDC with the other 20 NDCs, all of which have the PIVMS. We also evaluated the utilization and capacity, staffing levels, and inventory of powered equipment at the Washington NDC.

To conduct this audit, we relied on computer-processed data maintained by Postal Service corporate reporting tools, which included the Management Operating Data System (MODS), Electronic Maintenance Reporting System, Web Enterprise Information System, Web-based Complement Information System, Enhanced PIV System, and the Enterprise Data Warehouse portal. We did not test the validity of controls over these systems. However, we checked the accuracy of the data by confirming our analysis and results with Postal Service Managers and from different data sources

We conducted this performance audit from May through August 2009 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We discussed our observations and conclusions with management officials on July 16, 2009, and included their comments where appropriate.

## PRIOR AUDIT COVERAGE

We have conducted four prior audits. The majority of the sites we audited did not always use the PIVMS as intended and consequently did not fully realize efficiency improvements. Management agreed with our recommendations.

| Report Title | Report Number | Final Report Date | Monetary Impact |
|---|---|---|---|
| *Powered Industrial Vehicle Management System at the Raleigh Processing and Distribution Center* | NO-AR-08-007 | September 15, 2008 | $3,345,456 |
| *Powered Industrial Vehicle Management System at the Providence Processing and Distribution Center* | NO-AR-08-010 | September 23, 2008 | $1,576,086 |
| *Powered Industrial Vehicle Management System at the Louisville Processing and Distribution Center* | NO-AR-09-001 | December 3, 2008 | $1,981,643 |
| *Powered Industrial Vehicle Management System at the Oakland Processing and Distribution Center* | NO-AR-09-007 | July 23, 2009 | $14,598,866 |

# APPENDIX B: DETAILED ANALYSIS

## Damage to the PIVMS at the Washington NDC

The Washington NDC/Southern Maryland P&DC, which share the same facility, installed the PIVMS in July of 2006. Management stated that the damage to the system began several months after installation. The VAC device was either disconnected or completely removed on the majority of the powered vehicle inventory.[3]

Management stated they believed employees deliberately sabotaged the PIVMS equipment because they did not want to be monitored. Management can use the PIVMS, which tracks vehicle location and utilization, as a tool to monitor employee activity. In addition, management stated that employees were frustrated because, initially, there were problems logging onto the system using PIVMS badges. Eventually, the VACs were disconnected so that employees could bypass the PIVMS and start the vehicle. See Illustrations 1.


**Illustration 1: VAC disconnected**

In addition, there was damage to the PIVMS sensors used to detect motion and measure travel time while pulling or carrying a load. See Illustration 2.

[3] Postal Service Engineering values each VAC at over $1,500.


**Illustration 2: Damaged travel with load sensor** [4]

When management installed the PIVMS in July of 2006, the replacement parts were never secured and put into inventory. Instead, the replacement parts were left on the workroom floor. See Illustrations 3 and 4. During our audit, management secured these replacement parts.

[4] The PIVMS uses sensors to detect motion and measure travel time while pulling or carrying a load.


**Illustration 3: PIVMS replacement parts left over from the July 2006 installation were stored in a cage on the workroom floor and not organized or inventoried.**

**Illustration 4: PIVMS replacement parts remained unsecured on the workroom floor, June 2, 2009.**

We also found extensive damage to the building from powered vehicle accidents. See Illustrations 5 through 8.


**Illustration 5: Severe damage to a supporting column caused by a vehicle impact.**


**Illustration 6: Damage to an overhead look out gallery caused by a forklift with the mast raised.**


**Illustration 7: Damage to a building from a vehicle impact.**


**Illustration 8: A safety post with bolts sheared off from impact from a PIV.**

Since the PIVMS was not functional, supervisors could not use it to identify employees who were involved in vehicle accidents and had no other method in place to assign accountability. Although management was unable to identify the employees who caused the damage to the PIVMS and to the facility, management took steps to prevent further damage. When the Washington NDC manager arrived in 2007, he contacted OIG investigators for assistance and employees were notified that damage to equipment would not be tolerated.

## Other Matters – Powered Vehicle Equipment Internal Controls

### Volume and Workhour Trends

To management's credit, they reduced workhours in tow and forklift operations without the use of the PIVMS. We reviewed mail volume, workhours, productivity, and complement trends for the Washington NDC from FYs 2006 through 2008. From FYs 2006 through 2008, FHP volume at the Washington NDC decreased by 19.9 percent and mail processing (Function 1) workhours decreased by 19.6 percent. Consequently, overall mail processing productivity decreased by .4 percent.

From FYs 2006 through 2008, workhours used in tow and forklift operations at the Washington NDC decreased by 10.1 percent and overtime used in these operations decreased by 53.3 percent. In FY 2008, the Washington NDC used 23 percent of mail processing workhours for tow and forklift operations. The number of equipment operators in FY 2008 decreased by 16.9 percent compared to FY 2006.

We reviewed volume, workhour, and productivity trends for the other 20 NDCs from FYs 2006 through 2008. During this period, volume at these sites declined by 20.1 percent and mail processing (Function 1) workhours decreased by 11.9 percent. Consequently, productivity decreased by 9.2 percent. In FY 2008, the other 20 NDCs used an average of 18.7 percent of mail processing workhours for tow and forklift operations.

Comparing the Washington NDC to these sites from FYs 2006 through 2008 shows that Washington NDC tow and forklift workhours decreased by 10.1 percent, while the average site decreased workhours in these operations by 8.1 percent. From FYs 2006 to 2008, Washington NDC tow and forklift workhours decreased by 10.1 percent.[5] See Charts 1 and 2.

[5] Source of the data used in Charts 1 through 4 was the Enterprise Data Warehouse.

**Chart 1: Tow and Forklift Workhours at the Washington NDC FYs 2006 through 2008**

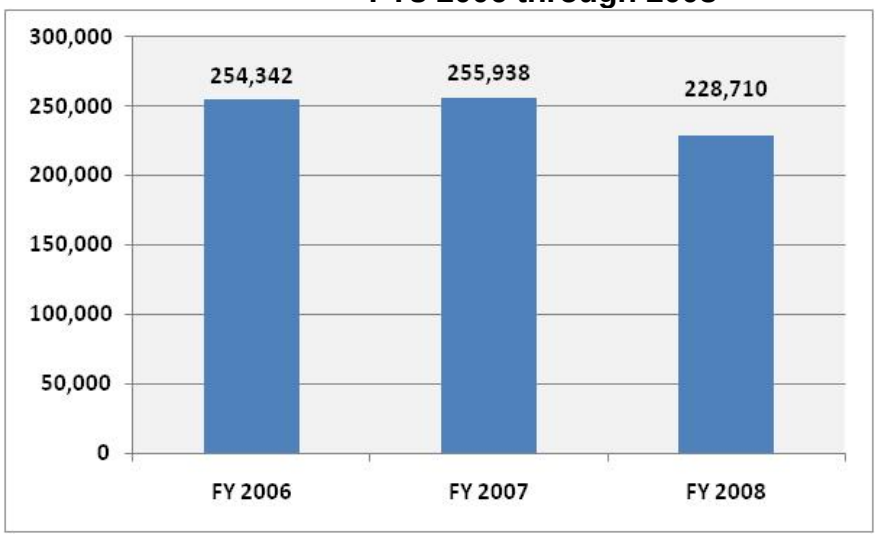
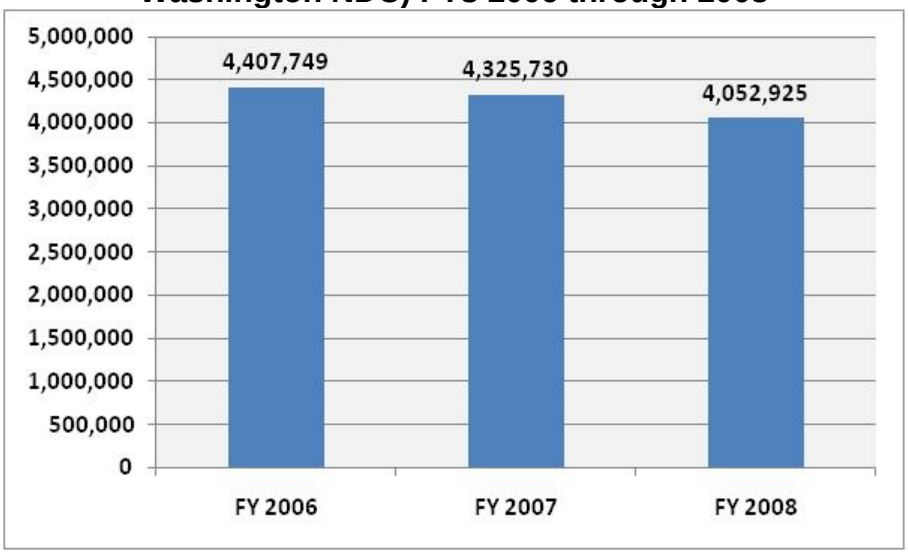



**Chart 2: NDC Tow and Forklifts Workhours (excluding Washington NDC) FYs 2006 through 2008**




**From FYs 2006 to 2008, tow and forklift workhours decreased by 8.1. percent at the other 20 NDCs.**

We noted that during FY 2009, workhours and overtime used in tow and forklift operations continued to decrease in the Washington NDC. For example, they used .1 percent fewer workhours and almost 61.7 percent less overtime in these operations in April 2009 compared to April 2008. See Charts 3 and 4.

**Chart 3: Washington NDC Tow and Forklift Workhours**
**FY to date April 2008 and April 2009**

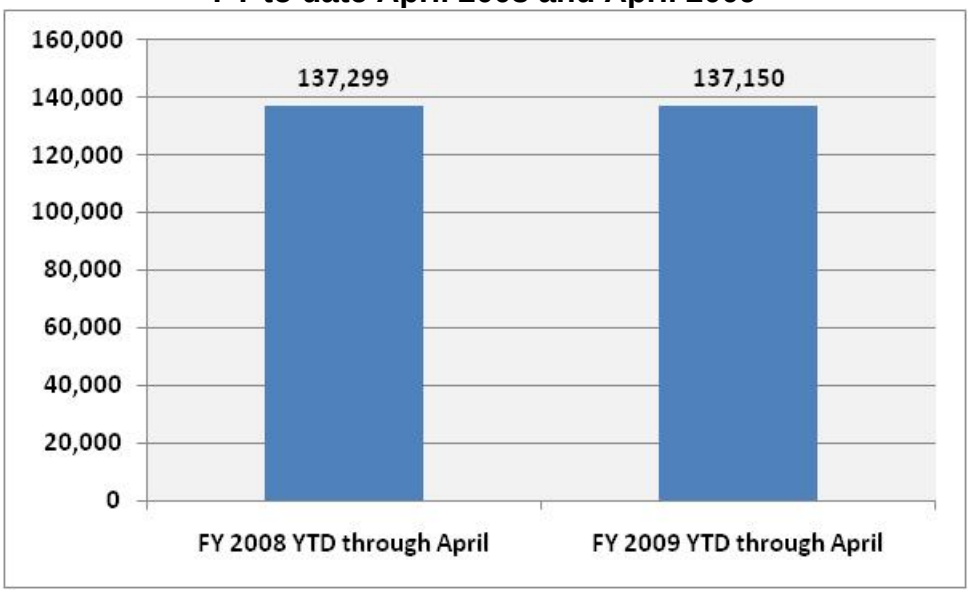
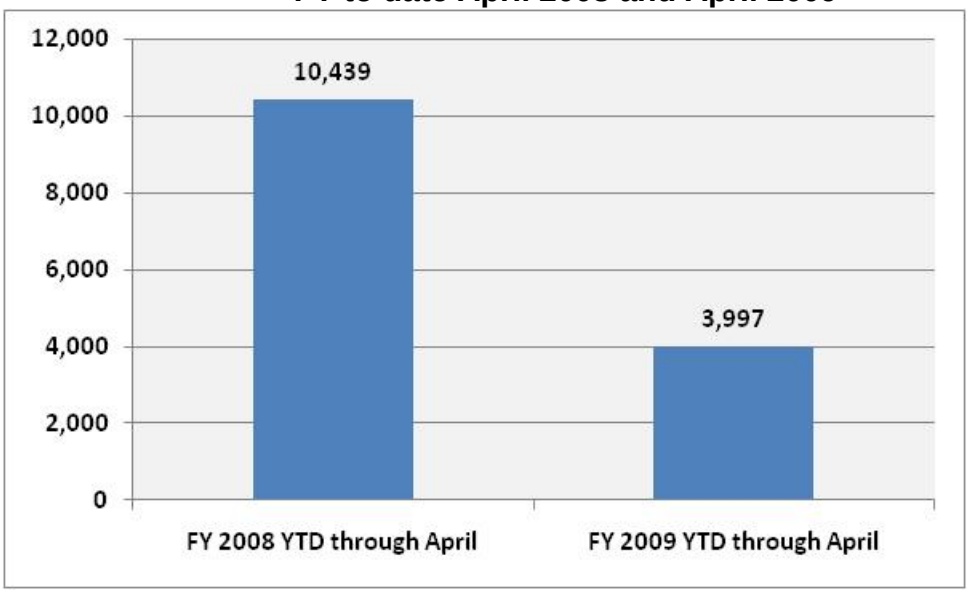



**Chart 4: Washington NDC Tow and Forklift Overtime**
**FY to date April 2008 and April 2009**




The President's Commission on the U.S. Postal Service, July 31, 2003, recommends that the mission of the Postal Service be ". . . . to provide high-quality, essential postal services to all persons and communities by the most cost-effective and efficient means possible at affordable and, where appropriate, uniform rates." Title 39 U.S.C. Part 1, Chapter 4, § 403, states "The Postal Service shall plan, develop, promote, and provide adequate and efficient postal services at fair and reasonable rates and fees."

The Postal Accountability Enhancement Act of December 2006, P.L. 109-435, Title II dated December 20, 2006, indicates ". . . the need for the Postal Service to increase its efficiency and reduce its costs, including infrastructure costs, to help maintain high quality, affordable postal services. . . ."

## Powered Vehicle Equipment Internal Controls

Internal controls over vehicle safety, security and inventory were not in place because management did not implement compensating internal controls when the PIVMS was no longer functioning. Specifically:

- Equipment operators did not complete the OSHA checklist before starting a vehicle. The OSHA standard for powered industrial truck training [29 CFR 1910.178(l)] requires that an employer provide training to truck operators on a variety of topics and states that "Daily, pre-shift inspection of powered industrial trucks is required by OSHA standards." Supervisors stated that they believed in many cases that the vehicles would not pass a safety inspection. For example, since warning horns did not work on some vehicles, management issued equipment operators whistles instead. See Illustration 9.


**Illustration 9: The warning horn on vehicle did not work because the wire had been cut.**

In addition, safety belts had been cut and removed from some vehicles. See Illustration 10.


**Illustration 10: Removed powered equipment seat belt**

During our audit, management implemented a vehicle safety checklist for employees to use before starting a vehicle.

- Access to vehicles was not controlled and not all equipment operators had valid licenses. We found 18 of the 124 equipment operators (14.52 percent), were not licensed. During our audit, management recertified 16 of the equipment operators and planned to recertify the remaining two when they returned from extended leave.

- Management could not always identify employees involved in vehicle accidents.

The Strategic Transformation Plan 2006 to 2010 states: “Perhaps the greatest investment the Postal Service can make for employees is maintaining a safe work environment — making sure they return home to their families each day the same way they came in to work.” In addition, the plan states, “The Postal Service is subject to the reporting requirements of the Occupational Safety and Health Administration and follows the required criteria and reporting methodology. Providing a safe workplace is a demonstration of the commitment the Postal Service has to its employees.”

If the PIVMS were functioning, it would assist management in improving controls over safety and security. For example, the PIVMS:

- Allows only current certified operators to logon and operate specified equipment.

- Requires the operator to complete an electronic OSHA checklist within a prescribed time after logging on to the vehicle.

- Does not allow the vehicle to be restarted after a collision and identifies the operator through the PIVMS log-on procedures.

Controls over vehicle and battery maintenance also needed improvement. For example:

- Management did not have a system in place to monitor battery usage. Industrial batteries provide a maximum return on investment when they are discharged to appropriate levels during operation and allowed to recharge and cool down for enough time during their charge cycles. At the Washington NDC, there were not always sufficiently charged batteries for the vehicle inventory and they were routinely put into vehicles before being completely charged. Using a battery that is not completely charged reduces battery life. See Illustrations 11 and 12.


**Illustration 11. Batteries labeled with tags were not functioning properly.**

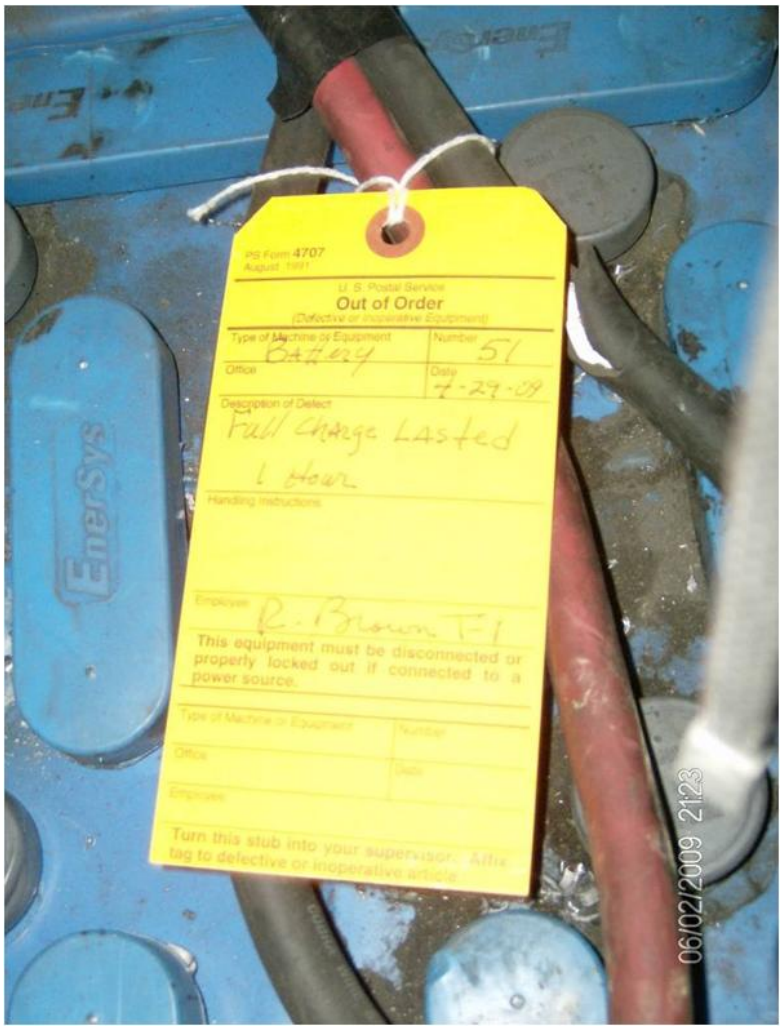



**Illustration 12. Example of tag on a battery. It says "Full charge lasted 1 hour."**

- Since the PIVMS was not functioning, vehicle batteries did not include battery fobs. The PIVMS battery fob assists management in keeping track of the batteries. The VAC reads the battery fob identification code and sends information on the battery to the central computer server. See illustration 13.


**Illustration 13: Box of battery fobs never installed on batteries.**

- We also found potentially unsafe non-functioning batteries on the workroom floor. See Illustration 14. During our audit management disposed of these batteries.


**Illustration 14: Potentially unsafe non-functioning batteries**

- Vehicles at the Washington NDC were not adequately maintained. For example, 15 of the 55 vehicles were out of service. See Illustration 15.


**Illustration 15: Tags on vehicles indicates they were awaiting maintenance on June 2, 2009.**

If the PIVMS was functioning as intended it would assist management in improving controls over batteries and vehicles. For example:

- The PIVMS Battery/Charger Administration module extends vehicle battery life and reduces battery inventory. I.D. Systems' Fleet Management System notifies the operator when the battery has been sufficiently discharged and can be replaced.

- The PIVMS maintenance tool provides the ability to forecast, schedule, and process preventative maintenance events. By using this tool, management could more effectively manage preventive maintenance of vehicles.

# APPENDIX C: MANAGEMENT'S COMMENTS

WASHINGTON NETWORK DISTRIBUTION CENTER
CAPITAL PERFORMANCE CLUSTER

UNITED STATES POSTAL SERVICE

September 16, 2009

LUCINE M. WILLIS
DIRECTOR, AUDIT OPERATIONS
OFFICE OF THE INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

SUBJECT: Draft Audit Report – Powered Industrial Vehicle Management System at the Washington Network Distribution Center (Report Number NO-AR-09-Draft)

I have reviewed the findings in the audit of the Powered Industrial Vehicle Management System (PIVMS) at the Washington Network Distribution Center (NDC).

It is agreed that the PIMVS lacked the necessary monitoring for maximum efficiency at the Washington NDC. As a result, the systems improper use caused it to be rendered inoperable. As the report states, the Washington NDC has shown workhour reductions in tow and forklift operations without the PIVMS. However, it is believed that we could have experienced even greater reductions with the use of the PIVMS.

We agree that with the use of the PIVMS we would have experienced far less building and equipment damages. In a like manner, if we had use of the PIVMS each piece of equipment would have been furnished with a shock sensor to disable the PIT in the event of an impact. Therefore, internal controls have been put in place to address vehicle safety, security, and inventory. We have also instituted controls to address battery maintenance. As stated in the report, the Washington NDC does not have sufficient charged batteries for the vehicle inventory "Using a battery that is not completely charged reduces battery life".

***Recommendation of OIG:***

**Provide closer supervision over powered vehicle operations to ensure that damage to powered equipment vehicles and the facility does not occur and consider repairing or reinstalling he Powered Industrial Vehicle Management System (PIVMS).**

We agree with this recommendation and have taken the following steps to ensure compliance:

- All PIT equipment is housed at the battery shop.
- Equipment operators are required to sign-out equipment prior to use.
- Supervisors conduct daily driver observations.
- Safety talks are being given to all employees stressing the importance of PIT safety.
- We will request the reinstallation of the PIVMS at the Washington NDC.

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***Recommendation of OIG:***

**Improve internal controls over vehicle equipment as well as safety and security by ensuring that OSHA checklists are completed as required, equipment operator vehicle licenses are current, and vehicles and batteries are adequately maintained.**

We agree with this recommendation and have taken the following steps to ensure compliance:

- We have assigned each piece of equipment to a specific pay location.
- We have required completion of a daily PIT OSHA checklist by each operator prior to equipment use.
- Manager's Distribution Operations are required to ensure all operators have current license and proper training.
- PIT maintenance mechanics will receive formal training on PIT repair.

We have taken the following steps to adequately maintain batteries:

- Maintenance personnel have been instructed not to short-charge batteries.
- The battery room is locked and secured.
- We will request the purchase of additional batteries to maximize the availability per piece of equipment.

If you have further questions, or require additional information, please contact me.

William T. Graves

William T. Graves
Manager
Washington Network Distribution Center