



December 14, 2009

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DISTRIBUTION CENTER

SUBJECT: Audit Report – Powered Industrial Vehicle Management System at the  
Tampa Processing and Distribution Center  
(Report Number NO-AR-10-001)

This report presents the results of our audit of the Powered Industrial Vehicle Management System (PIVMS)<sup>1</sup> at the Tampa, Florida Processing and Distribution Center (P&DC), located in the Southeast Area (Project Number 09XG034NO000). The report responds to a request from the vice president, Network Operations to review the PIVMS. Our objectives were to determine if the PIVMS was functioning as intended and producing efficiency improvements. This report addresses operational risk. See [Appendix A](#) for additional information about this audit.

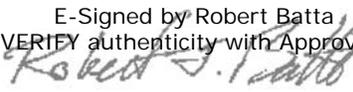
### Conclusion

Management at the Tampa P&DC used the PIVMS as intended and consequently realized efficiency improvements. The PIVMS was used as a tool to manage equipment operator workhours, identify opportunities to reduce vehicle inventory, and ensure internal controls over safety and security were in place. In addition, using PIVMS, management reduced vehicle equipment and transferred excess equipment from the Tampa P&DC to elsewhere in the Southeast Area. Since the Tampa P&DC used the PIVMS as intended, we are not making any recommendations in this report. Postal Service management agreed with the findings and chose not to comment on the report because there were no recommendations. See [Appendix B](#) for our detailed analysis of this topic.

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<sup>1</sup> The PIVMS is a wireless system that provides automated measurement, control, and compliance reporting of operations within a plant, resulting in optimal powered industrial vehicle (PIV) safety conditions, operations, supervision, and associated savings.

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.

E-Signed by Robert Batta   
VERIFY authenticity with ApproveIt  


Robert J. Batta  
Deputy Assistant Inspector General  
for Mission Operations

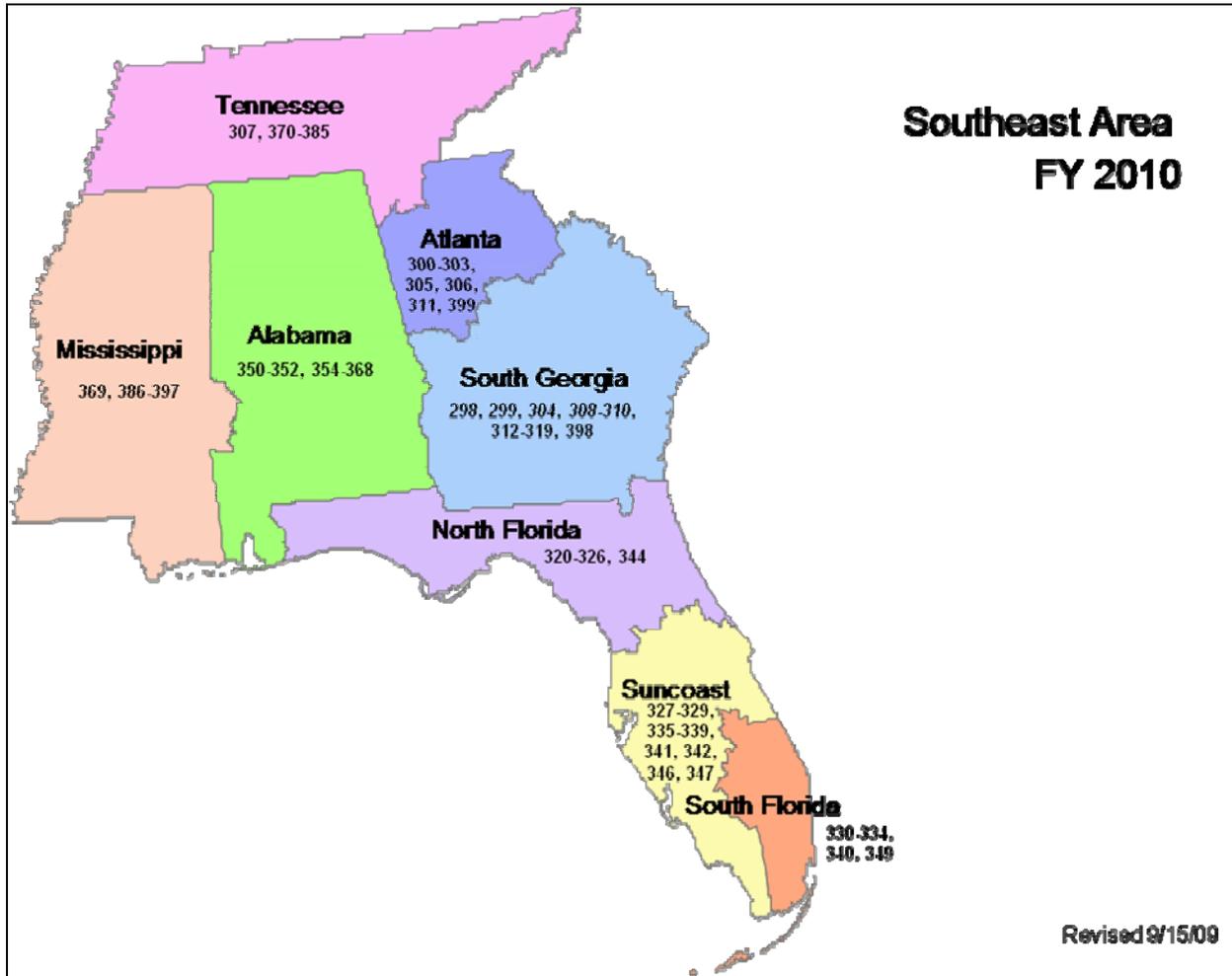
Attachment

cc: Patrick R. Donahoe  
Steven J. Forte  
Jordan Small  
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## APPENDIX A: ADDITIONAL INFORMATION

### BACKGROUND

The Tampa P&DC is located in the Suncoast District in the Southeast Area. The map below shows the Southeast Area districts.



The Tampa P&DC processed more than 1.7 billion first handling pieces (FHP) of mail and used 1.9 million mail processing workhours in FY 2008. The Postal Service leases the Tampa P&DC building and has occupied this facility since May 1970. The building contains 400,475 square feet of interior space on a site with dimensions of 557,600 square feet.

The Tampa P&DC implemented the PIVMS on April 17, 2006, at a projected cost of \$252,254. Management justified the purchase based on the following factors:

1. Elimination of unauthorized use of powered industrial vehicles (PIVs).
2. Reduction of injuries caused by unsafe operation of PIVs.
3. Reduction of damage to mail and equipment caused by unsafe operation of PIVs.
4. Reduction of workhours used to transport mail and equipment throughout the plant.
5. Reduction of number of pieces of equipment needed to perform this work.
6. Reduction of 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. (I.D. Systems) of Hackensack, NJ, in January 2005 to produce and deploy the PIVMS. The Postal Service started the program essentially 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<sup>2</sup> and distribution facilities across the country. As of October 2009, the Postal Service placed orders for PIVMS deployment in 114 facilities. The total amount funded for the PIVMS as of October 2009 was more than \$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 were:

- Ability to conduct two-way text messaging.
- Assurance of Occupational Safety and Health Administration (OSHA) safety compliance by only allowing currently certified operators to log on and operate specified equipment.
- Ability to shut down a vehicle after recording a significant impact, increasing safety and accountability.
- Ability to measure the amount of time an operator is logged into a vehicle and the amount of time the vehicle is in motion.
- Ability to locate, track, and control vehicles within a plant.

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<sup>2</sup> Effective August 1, 2009, all BMCs were renamed Network Distribution Centers (NDC).

## **OBJECTIVES, SCOPE, AND METHODOLOGY**

Our objectives were to determine whether 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 Tampa P&DC. The Tampa P&DC implemented the PIVMS before the end of FY 2006, so we benchmarked the Tampa P&DC with the 43 sites that had implemented the PIVMS before the end of FY 2007. We also evaluated the utilization and capacity, staffing levels, and inventory of powered equipment at the Tampa P&DC.

To conduct this audit, we relied on computer-processed data maintained by Postal Service Operational Systems, which included Web-based Complement Information System, and the Enterprise Data Warehouse.

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 other data sources.

We conducted this performance audit from August through December 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 on November 13, 2009, and included their comments where appropriate.

**PRIOR AUDIT COVERAGE**

We have conducted five 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.

<b>Report Title</b>	<b>Report Number</b>	<b>Final Report Date</b>	<b>Monetary Impact</b>
<i>Powered Industrial Vehicle Management System at the Raleigh Processing and Distribution Center</i>	NO-AR-08-007	September 15, 2008	\$3,345,456
<i>Powered Industrial Vehicle Management System at the Providence Processing and Distribution Center</i>	NO-AR-08-010	September 23, 2008	\$1,576,086
<i>Powered Industrial Vehicle Management System at the Louisville Processing and Distribution Center</i>	NO-AR-09-001	December 3, 2008	\$1,981,643
<i>Powered Industrial Vehicle Management System at the Oakland Processing and Distribution Center</i>	NO-AR-09-007	July 23, 2009	\$14,598,866
<i>Powered Industrial Vehicle Management System at the Washington DC Network Distribution Center</i>	NO-AR-09-010	September 22, 2009	\$0

## APPENDIX B: DETAILED ANALYSIS

### **Volume and Workhour Trends**

We reviewed mail volume, workhours, productivity, and complement trends for the Tampa P&DC from FYs 2006 through 2008 and found that management effectively managed workhours in relation to workload. For example, from FYs 2006 through 2008, First Handled Piece (FHP) volume at the Tampa P&DC decreased by 5.7 percent and mail processing workhours decreased by 18.5 percent. Consequently, overall mail processing productivity increased by 15.6 percent.

Although workhours used in tow and forklift operations at the Tampa P&DC increased by 5.2 percent from FYs 2006 through 2008, the increase was due to the consolidation of the St. Petersburg P&DC into the Tampa P&DC. When this consolidation took place in June 2008, management transferred 23 mail handlers to the Tampa P&DC. However, overtime in these operations decreased by more than 16 percent from FY 2006 to FY 2008.

The Tampa P&DC also compared favorably with other P&DCs with the PIVMS. We reviewed volume, workhour, productivity, and complement trends for the P&DCs that had the PIVMS installed before the end of FY 2007, so there was at least one completed fiscal year of data. For the 43 sites meeting these criteria, we reviewed volume, workhour, and productivity trends from FYs 2006 through 2008. During this period, volume at these sites declined 1.4 percent and mail processing workhours decreased 11.8 percent. Consequently, productivity increased almost 12 percent. In FY 2008 these sites used 6.2 percentage of mail processing workhours in tow and forklift operations, compared with the 4.7 percent used by the Tampa P&DC.

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. . . ."

### **Use of the PIVMS**

The Tampa P&DC used the operational and reporting features of the PIVMS as a tool to manage equipment operator workhours, identify opportunities to reduce vehicle inventory, and ensure internal controls over safety and security were in place. The

Operator Usage Detail Report, Executive Report, and Executive Summary Reports were distributed to supervisors daily via e-mail. Supervisors reviewed these reports for anomalies and took corrective action such as performing needed maintenance on PIVMS equipment.

We also noted that the Tampa P&DC had a high utilization (travel with load rate) for tow vehicles. The travel with load rate is an efficiency indicator that shows the percentage of time a PIV is operated with a load. Tampa P&DC management reviewed reports from the PIVMS to determine that each vehicle reported travel with load. If a vehicle did not show travel with load, management worked with maintenance to determine the cause and correct it. The Tampa P&DC vehicle travel with load percentage for tow vehicles for year to date July FY 2009 was 17.2 percent higher than the national percentage.

Although the Tampa P&DC did not use the PIVMS to monitor vehicle battery usage, they had other compensating controls in place to ensure that there were sufficient batteries to power the vehicles. For example, the Tampa P&DC maintenance staff controlled access to batteries by locking the battery room door and only allowing access during specific hours for battery changes. See Illustration 1.



Illustration 1: Battery room locked between battery changing periods at the Tampa P&DC.

The Tampa P&DC did not use the PIVMS to schedule preventive maintenance or ensure that maintenance was accomplished. Instead, the Electronic Maintenance Activity Reporting & Scheduling System (eMARS)<sup>3</sup> was used. The PIVMS maintenance tool enables the user to forecast, schedule, and process preventative maintenance events. By using this tool, management could more effectively manage preventive maintenance of vehicles. We found that vehicles were adequately maintained at the Tampa P&DC and will address the usage of eMARS versus PIVMS in our capping report.

We did not observe excess vehicles at the Tampa P&DC. As of August 2009, the Tampa P&DC had 17 PIVs, which appeared to be a sufficient number of vehicles for the mail volume. For example, we found that from August 2008 through August 2009, all of the 17 PIVs were used during peak mail periods.

The Tampa P&DC used the PIVMS to ensure that internal controls over safety and security were in place. A PIVMS safety design feature requires the operator to complete an electronic OSHA Checklist within a prescribed time after logging on to the vehicle. We observed that equipment operators completed the OSHA Checklist at the start of their tour. See Illustration 2.

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<sup>3</sup> eMARS is a computerized maintenance management information system that provides field maintenance personnel with the ability to schedule maintenance and personnel, track labor and material costs, maintain a spare parts inventory and report on maintenance.



Illustration 2: Powered Equipment Operator completing OSHA Checklist at the Tampa P&DC on September 1, 2009.

During our review at the Tampa P&DC, we did not observe unsafe driving practices or accidents or damage to the facility from powered equipment vehicles. In addition, we found that supervisors used the PIVMS to identify employees involved in vehicle accidents and to locate vehicles in the facility.

#### Management Actions

Tampa P&DC management contributed significantly to the success in realizing efficiency improvements in tow and forklift operations. Supervisors tracked the number of hours charged to tow and fork operations to ensure drivers made accurate clock rings and charged their time to the correct operations. In addition, management believed that by controlling the number of vehicles they could better control workhour usage. Management identified excess PIV inventory at the Tampa P&DC and transferred vehicles to the Orlando P&DC and to the Sulphur Springs Post Office.

Tampa P&DC management implemented more controls in addition to those offered by the PIVMS. For example, not only were the PIVMS badges required to start vehicles, but management also required Powered Equipment Operators to use a conventional metal key.

In addition, although the PIVMS has a graphic interface that locates vehicles in the facility and identifies the PEO operating the vehicle, Tampa P&DC management also used a vehicle check-out board, where a picture of the employee replaces the conventional metal key when the vehicle is assigned. By looking at the board, management could easily identify the employee assigned to a particular vehicle. See Illustration 3.



Illustration 3: Vehicle check-out window (left picture) and vehicle key-check out board (right picture).