OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

Mobile Delivery Device Program

Audit Report

Report Number
CP-AR-17-008

April 28, 2017

OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

Highlights

The MDD program has improved package visibility. However, opportunities exist for the Postal Service to improve the MDD program.

Background

Mobile Delivery Devices (MDD) are handheld scanners that replaced two existing, paired devices – the Intelligent Mail® Devices and clamshell cell phones. Letter carriers use MDDs on the street to track package delivery in real time. This tracking capability, known as package visibility, is essential for the U.S. Postal Service to be competitive and increase package volume.

The Decision Analysis Report (DAR) Business Case is a document prepared by management to recommend an investment for approval. The DAR describes the problem or opportunity the expenditure will address. It must provide sufficient detail, including backup documentation, to enable the approving authorities to make an informed decision regarding the use of postal funds.

The Postal Service approved [redacted] million (including capital, investment and operating costs) to implement the MDD program. The DAR contained three performance metrics that were vital to the success of the program. MDD deployment started in September 2014 and was essentially completed in June 2016. The Postal Service has deployed 262,800 devices, software releases, and related accessories.

Our objective was to assess whether the Postal Service achieved the performance metrics, savings, and costs identified in the DAR.

What the OIG Found

Opportunities exist to improve the MDD program. The MDD program has improved package visibility and achieved a key metric: reducing Intelligent Mail Device repair and help desk costs by [redacted] million for fiscal year 2016. However, the Postal Service did not achieve two of the three key performance metrics identified in the DAR: (1) average time to post delivery scan data to the tracking system is less than [redacted] and (2) [redacted] percent of scans posted to the tracking system are within [redacted]. Specifically, between November 2016 and January 2017, the average time to post delivery scans was [redacted] minutes. Also, [redacted] of [redacted] billion [redacted] percent) of delivery scan data was posted in less than [redacted].

Factors that affected the posting time included system network connectivity issues and MDD conditions, such as screens freezing and laser beam readers malfunctioning. Inadequate network connectivity and MDD conditions can reduce customer satisfaction, increasing the risk customers may consider alternative package delivery providers.

Also, the Postal Service paid $[redacted] million for batteries that did not consistently support continuous operation of the MDDs. Additional functionalities were added to the MDD after deployment. Management did not include these additional functionalities in the contract; therefore, they did not accurately project battery life needs. The shorter-than-required battery life and other functionality issues caused letter carriers to use

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ineffective and inefficient workarounds, which could increase delivery route time or cause customers to receive incorrect or delayed delivery information.

In addition, the Postal Service did not track delivery-related savings of [redacted] million. This amount was presented as a potential savings opportunity in the DAR justification section and not in the cash flow statement report. Management stated that they are only required to track financial information in the cash flow. Accordingly, we were unable to verify the projected savings opportunities for the MDD program. We believe information not included in the cash flow should be tracked and evaluated post-implementation.

The DAR is used to make strategic business decisions regarding significant investments in infrastructure. If those tasked with approving and evaluating the DAR cannot be assured the data supplied by those requesting such investments is reasonable and accurate, there is an increased risk of poor business decisions. By monitoring costs and savings supported with verified data, DAR stakeholders can make informed investment decisions and evaluate the success or impact of investments post-implementation.

The Postal Service was tracking the capital and expense investment costs. As of November 2016, the Postal Service had spent [redacted] million ([redacted] percent) of the $[redacted] million of the projected capital and expense investment costs in the DAR. The Postal Service estimates it will have expended 70 percent of the capital and expense investment costs when the project is completed in fiscal year 2017.

What the OIG Recommended

We recommended management include descriptions or explanations in the weekly status reports for all known issues related to Mobile Delivery Device network connectivity and functionality.

We also recommended management communicate with the vendor to resolve the battery life issues.

In addition, we recommended management revise Handbook F-66, General Investment Policies and Procedures, to require program sponsors to track estimated savings opportunities in the DAR, in the same manner as tracking financial information in the cash flow.

Transmittal Letter

OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

April 28, 2017

MEMORANDUM FOR: MICHAEL J. AMATO
VICE PRESIDENT, ENGINEERING SYSTEMS

LUKE T. GROSSMANN
VICE PRESIDENT, FINANCE AND PLANNING

FROM: John E. Cihota
Deputy Assistant Inspector General
for Finance, Pricing, and Investments

SUBJECT: Audit Report – Mobile Delivery Device Program
(Report Number CP-AR-17-008)

This report presents the results of our audit of the Mobile Delivery Device Program (Project Number 16BG019CP000).

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact Sherry K. Fullwood, Director, Cost, Pricing and Investments, or me at 703-248-2100.

Attachment

cc: Corporate Audit and Response Management

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Findings

The MDD program achieved a key metric: reducing Intelligent Mail Device repair and help desk costs by [redacted] million for fiscal year 2016. However, the Postal Service did not achieve two of the three key performance metrics identified in the DAR. Also, MDDs did not always function as expected. In addition, the Postal Service did not track delivery-related savings of [redacted]2 million identified in the DAR. Finally, the Postal Service was tracking the capital and expense investment costs.

Introduction

This report presents the results of our self-initiated audit of the Mobile Delivery Device Program (Project Number 16BG019CP000). Our objective was to assess whether the U.S. Postal Service achieved the performance metrics, savings, and costs identified in the Decision Analysis Report (DAR) Business Case. See Appendix A for additional information about this audit.

Mobile Delivery Devices (MDD) are handheld scanners that allow letter carriers to track package delivery in real time. MDDs have replaced the Intelligent Mail® Devices (IMD) and clamshell cell phones used by letter carriers on the street to track package delivery in near real time. IMDs, which are still used in the office, have limited capabilities and continue to face end-of-life issues. Unlike the pairing of IMD and clamshell cell phones, the MDD is a single device that is intended to support multiple requirements, such as Sunday package delivery, dynamic routing,[1] faster reporting of scan data, and future software enhancements. The IMD provides delivery notification about every [redacted]; the MDD delivery notification goal is within [redacted].

Management prepares a DAR to recommend an investment for approval. The DAR describes the problem or opportunity the expenditure will address. It must provide sufficient detail, including backup documentation, to enable the approving authorities to make an informed decision regarding the use of postal funds.

The MDD program is a [redacted] million[2] investment to help the Postal Service become the shipper of choice for more customers. The DAR contained three performance metrics that were vital to the success of the program: (1) average time to post delivery scan data to the tracking system is less than [redacted], (2) [redacted] percent of scans posted to the tracking system are within [redacted], and (3) reduction in IMD repair and help costs of [redacted] million in fiscal year (FY) 2016. Also, the DAR identified [redacted] million in delivery-related savings opportunities.

The MDD program hardware deployment and software releases started in September 2014 and January 2015 respectively, and was essentially completed in June 2016.[3] The Postal Service deployed 262,800 MDDs and related accessories, such as holsters, charging cradles, power supplies, and batteries.

The investment is part of a larger effort to strengthen the package processing and delivery network that supports volume growth, meets delivery expectations, and improves the customer experience by providing mail tracking status in real time.

Summary

Opportunities exist to improve the MDD program. The MDD program has improved package visibility and achieved a key metric: reducing Intelligent Mail Device repair and help desk costs by [redacted] million for fiscal year 2016. However, the Postal Service did not achieve two of the three key performance metrics identified in the DAR: (1) average time to post delivery scan data to the tracking system is less than [redacted], and (2) [redacted] percent of delivery scans posted are within [redacted] to the tracking system. The Postal Service determined these metrics were vital for evaluating the success of the MDD program.

Between November 2016 and January 2017, the average time to post delivery scans to the tracking system was [redacted]. Also, [redacted] of [redacted] billion ([redacted] percent) of delivery scan data was posted in less than five minutes. Factors that affected the posting

1 The process that allows the Postal Service to change series of deliveries or stops in a logical and efficient order in multiple ZIP Codes.
2 Capital Investment [redacted]; Expense Investment [redacted]; Operating Costs [redacted].
3 The Postal Service will incur limited, additional costs in FY 2017 for the program.

time included system network connectivity issues and MDD device conditions, such as screens freezing and laser beam readers malfunctioning. Inadequate network connectivity and MDD functionality can reduce customer satisfaction, increasing the risk customers may consider other package delivery providers.

Also, MDDs did not always function as expected. Four common functionality issues were: insufficient battery life, cellular wireless signal strength, screen freeze, and scan data stored in the MDD not transmitting to the system. Insufficient battery life is among the top functionality issues. We questioned the [redacted] million the Postal Service paid for batteries that did not consistently support continuous operation. Additional functionalities were added to the MDD after deployment. Management did not include these additional functionalities in the contract; therefore, they did not accurately project battery life needs.

Due to MDD functionality issues, letter carriers used ineffective and inefficient workarounds, which may have increased delivery route time or caused customers to receive incorrect or delayed delivery information.

In addition, the Postal Service did not track delivery-related savings of [redacted] million identified in the DAR. This amount was presented as a potential savings opportunity in the DAR justification section. Management stated that, they are only required to track financial information in the cash flow. [4] We believe information not included in the cash flow should be tracked and evaluated after implementation. The DAR is used by the Investment Review Committee (IRC)[5] to make strategic business decisions regarding significant investments in infrastructure. If the IRC cannot be assured the data used to justify investments is reasonable and accurate, the IRC is more likely to make poor business decisions. By monitoring costs and savings supported with verified data, DAR stakeholders can make informed investment decisions and evaluate the success or impact of investments after deployment.

Finally, the Postal Service was tracking the capital and expense investment costs. As of November 2016, the Postal Service had spent [redacted] million ([redacted] percent) of the [redacted] million[6] investment costs. The Postal Service estimates [redacted] percent of the investment costs will be expended when the project is completed in FY 2017. We noted additional planned functions included in the DAR and contract. The Postal Service re-evaluated plans outlined in the DAR regarding additional MDD functions and decided not to implement them. We understand the decisions management made to change priorities; however, some features could support future Postal Service products and services. For example, IMDs are currently used to scan packages at delivery units, an in-office feature. But, MDDs enhanced with the in-office use feature could eventually replace the IMDs, which have limited capabilities, are no longer manufactured, and have exceeded their anticipated useful life.

Performance Metrics

The DAR identified three key performance metrics. Although the Postal Service achieved one metric – reducing $12.9 million in IMD repair and help desk costs in FY 2016 – it did not achieve the other two:

- Average time to post MDD delivery scan data to the Product Tracking System (PTS)[7] is less than [redacted].
- [redacted] percent of delivery scans posted to PTS are within [redacted].

4 Handbook F-66, *General Investment Policies and Procedures*, November 2005, updated with Postal Bulletin revisions through October 11, 2007.
5 The IRC must review and vote on individual projects (new projects or expansions of existing projects) greater than [redacted] combined total capital investments, development/implementation expenses, and full-up annual operating expenses. The IRC establishes Postal Service investment direction, policy, and procedures; ensures compliance with investment policy procedures; and prioritizes resource use.
6 This amount does not include the operating costs of [redacted] million.
7 PTS is the database that stores tracking scan data for all barcoded packages and extra services products.

Specifically, from November 1, 2016 to January 31, 2017, the average time to post MDD scan data to PTS was [redacted]. Also, [redacted] billion of [redacted] billion [redacted] percent) individual data scans (transactions) were posted to PTS in less than [redacted], as shown in Table 1. In addition, we reviewed the deployment status update data the Postal Service presented to the IRC for the two metrics above. The data presented supported our finding that the Postal Service did not achieve the metrics. The average time to post scan data was [redacted] and [redacted] percent[9] delivery scans were posted within [redacted].

Table 1. Time to Post MDD Scans to PTS

MINUTES TO POST	TOTAL SCANS	PERCENTAGE
	November 2016 - January 2017	
[redacted]	1,442,708,203	[redacted]
[redacted]	51,351,203	[redacted]
[redacted]	21,180,175	[redacted]
[redacted]	12,356,321	[redacted]
[redacted]	8,446,492	[redacted]
[redacted]	5,106,131	[redacted]
[redacted]	57,451,898	[redacted]
Total	**1,598,600,423**	**100%**

Source: Postal Service PTS.

Postal Service management reported that factors such as Regional Intelligent Mail Server (RIMS)[10] network connectivity issues and MDD device conditions could affect the delay in posting MDD scans to PTS. According to the *FY 2016 IMD-MDD Weekly Status Report*,[11] for the 37 weeks of available data provided by the Postal Service:

- Thirty-two percent (of the issues) were related to RIMS network connectivity. Examples include:
  - RIMS experienced a slowdown in processing, caused by possible network-related issues.

8 The Postal Service used August 9 to November 5, 2016 data.
9 The Postal Service used August 6 to November 5, 2016 data.
10 The RIMS is a cloud based enterprise system that stores MDD scan data.
11 The weekly status reports reflect the average amount of time to post scan data for both IMD and MDD. The Postal Service uses a seven-minute delivery time threshold to identify reasons for long posting times above that seven-minute threshold.

- Over capacity of RIMS servers.
- RIMS experienced network issues that resulted in an outage.
- Connection errors caused the RIMS database to become unresponsive.

- Forty-nine percent did not contain descriptions or explanations for delay in posting scanned data to PTS.
- Nineteen percent were for other issues, such as PTS software application issues and an increase in mail sampling scans that letter carriers had to perform on their delivery routes.

MDD device conditions, such as screen freezes and laser beam reader malfunctions, could also cause delays in transmitting scanned data.

- Screen freezes – When keys are pushed or the screen is tapped, the MDD does not always perform the end delivery scans needed to complete the product tracking data sequence. To troubleshoot, letter carriers perform a Warm[12] or Cold Boot.[13] The Warm Boot can take three-four minutes, and the Cold Boot can take six-seven minutes, contributing to the delay in transmitting data.

- Laser beam – When the laser beam reader is not working, the letter carrier manually enters the barcode information to the MDD at the delivery point or either writes down or takes a picture of the information and enters it into the MDD at the end of the route, which contributes to the delay in transmitting data.

Postal Service management indicated they are evaluating options to reroute some of the scan data to other servers to reduce RIMS network issues. They are also trying to enhance the ability of the MDD's laser beam to remain active during scanning.

While overall mail volume is expected to continue to decline, shipping and package volume still show strong year-over-year growth. Customers are relying on real-time delivery information to track their packages. When tracking scans are not uploaded timely, customers may lose confidence in the Postal Service's ability to meet their shipping needs and may consider alternative package delivery providers.

Functionality

Delivery personnel[14] reported that MDDs did not always function as expected. The issues are listed below, with the number in parenthesis indicating how many times the issue was reported by managers (M) and letter carriers (C):

- The battery life did not consistently support continuous operation because the batteries discharged too quickly (M21) (C29). The batteries generally lasted between five-seven hours. When the battery was totally discharged, one of the following occurred:

12 A Warm Boot or a soft reset reboots the device and preserves any objects recreated in the device's memory. It requires pressing and holding "CTRL/ALT+ Enter" keys for about five seconds. When the reset is complete, the "Today" screen displays.
13 A Cold Boot or a hard reset reboots the device and closes any open applications running at the time of the reset. It requires holding and pressing "CTRL/ALT+ Escape" keys for about five seconds, then the device reinitializes.
14 The audit team visited 10 Postal Service facilities and interviewed 21 managers and 34 letter carriers.

- Letter carrier replaced it with a spare battery he/she took before leaving the delivery unit.
- Letter carrier returned to the delivery unit to obtain a spare battery or another MDD.
- Manager brought a spare battery or another MDD to the letter carrier.
- Letter carrier took pictures of package barcodes with a personal cellphone or camera and entered the barcodes into another MDD upon return to the delivery unit.

Postal Service management stated after MDD deployment, many additional functionalities were added; eight of the added functionalities primarily contributed to higher battery consumption. As a result, the battery life did not last for a minimum of 12 hours.[15] Although the functionalities were added after the deployment of the MDD, the DAR had listed two of eight additional functionalities. If management had included the additional functionalities when building the contract, management could have projected battery life needs more accurately and reduced these functionality issues reported in the field. As a result, the Postal Service paid [redacted][16] for batteries that do not consistently support continuous operation. Therefore, we questioned this cost.[17]

- Wireless signal strength that contributed to delayed transmission of scan data to PTS. For example, when carriers were surrounded by a body of water, tunnels, or mountains, they lost their wireless signal (M14) (C5).
- As noted earlier, when letter carriers pushed keys or tapped the screen the MDD froze and did not perform as expected (M19) (C26). To troubleshoot, letter carriers performed a Warm or Cold Boot, but the reboot did not always work and letter carriers could not obtain a customer's electronic signature. They had to spend extra time filling out Postal Service (PS) Forms 3849, *Delivery Notice/Reminder/Receipt* [18]
- Delivery scans stored in devices did not always upload to RIMS. For example, managers reviewed the end-of-day reports and identified possible undelivered packages. However, in some cases managers found that missing scans were being held in devices and not uploading to RIMS. Managers needed to put the MDDs in the docking station to upload the scans (M15).

Postal Service management is aware of the battery life issue. To conserve the battery, managers have informed letter carriers not to remove devices from charging cradles until leaving facilities for their routes. Also, management stated that, in an effort to address the wireless signal strength issue, they have transitioned 500 devices from AT&T to Verizon wireless service to test and monitor the signal strength.

Letter carriers used ineffective and inefficient workarounds to address MDD functionality issues, potentially increasing delivery route time or causing customers to receive incorrect or delayed delivery information.

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15 According to the Statement of Work, the batter life should support continuous heavy use (12 hours minimum) of Global Positioning (GPS), Wi-Fi, cellular, Bluetooth, and scanning.
16 The Postal Service paid [redacted] per battery and 262,800 MDDs have been deployed.
17 Questioned costs are unnecessary, unreasonable, unsupported, or an alleged violation of law, regulation, contract, etcetera. May be recoverable or unrecoverable. Usually a result of historical events.
18 The form is used as a notice for mail that cannot be delivered on the first attempt or as a delivery receipt for accountable mail.

Also, delivery managers and letter carriers suggested that the Postal Service enhance the following MDD features:

- Add sub-options to the undelivered mail selection, such as the ability to state whether a customer is on vacation or has moved, and provide mail forwarding instructions.
- Have the capability to put the devices on "sleep mode" to conserve the battery.
- Expand the MDD's capability to handle in-office mail operations. Currently, the device is primarily used for on-street mail delivery.
- Enable the device with voice communication to the delivery unit for emergencies.
- Distribute procedures for reordering new batteries to all delivery units.

A previous U.S. Postal Service Office of Inspector General (OIG) report[19] identified similar MDD functionality issues, such as insufficient battery life and screen freezes. The report also stated that supervisors are not always contacting the MDD help desk to report battery issues and obtain replacement batteries. The batteries are covered under warranty for manufacturing defects.

Management disagreed with the finding in our previous report and asserted that ongoing engineering activities monitor functionality issues reported through the help desk and solutions are regularly developed and tested through a software development process. This process includes independent verification and validation testing to ensure equipment functions are operational. However, based on the current audit, functionality issues continue to exist.

Tracking Savings

Management did not track delivery-related savings to determine whether the savings projected in the DAR were achieved. The Postal Service estimated a total of [redacted] million savings opportunities in the DAR:

- Real-Time wireless data transmission and delivery process – enable Delivery to track progress from delivery personnel throughout the days on city routes and, in conjunction with being able to communicate with carriers during the day, should be able to eliminate special trips by shifting resources out on the street for carrier pickups and special services, rather than waiting until they return to the office. Determining each carrier's progress early in the afternoon will allow the supervisor to known which carriers are behind schedule and take appropriate action. This will save unnecessary travel time and also assist in Delivery's efforts to have carriers off the street by 5:00 pm (an estimated annual savings of [redacted] million).
- Delivery route performance data – provide more granular route and route performance data and enable the use of historical data to assist in city carrier route evaluations and adjustments (an estimated annual savings of about [redacted] million).

Postal Service management stated that the MDD program was not designed to achieve delivery-related savings; rather, it was intended to enhance mail delivery operations. Also, the savings opportunities are included in the DAR's justification and not the cash flow; therefore, they are not required to track or provide support documentation. Handbook F-66 states that project sponsors[20] are only required to track potential savings in the cash flow section of a DAR.

19 *Mobile Delivery Device Deployment and Functionality* (Report Number MI-AR-15-005, dated July 8, 2016).
20 Project sponsor is the functional organization or unit requesting and justifying an investment project.

However, we believe information not included in the cash flow should be tracked and evaluated post-implementation. The DAR is used by the IRC to make strategic business decisions regarding significant investments in infrastructure. If the IRC cannot be assured the data used to justify the investment is reasonable and accurate, there is an increased risk the IRC will make poor business decisions. Stakeholders should not have to be selective about the significance of information presented in the DAR when making investment decisions.

Tracking Costs

The Postal Service tracked the capital and expense investment costs. The approved investment costs was [redacted] million.[21] As of November 2016, [redacted] million (66.4 percent) has been paid. The Postal Service estimates a total of [redacted] million (69.7 percent) will be expended when the project is completed in FY 2017, as shown in Table 2. Therefore, the estimated total costs upon completion will be [redacted] million[22] less than budgeted costs.

Table 2. Plan vs. Actual Investment Costs (Millions)

Type	DAR Estimate	Actual Costs (As of November 2016)	Est. Investment upon Completion in FY 2017
Capital Investment	[redacted]	[redacted]	[redacted]
Expense Investment	[redacted]	[redacted]	[redacted]
Total Investment	[redacted]	[redacted]	[redacted]

Source: MDD Program Investment Review Committee Post-Deployment Briefing, December 6, 2016.

Additional functionalities were planned for the MDD as part of the DAR and the Statement of Work, such as Camera,[23] Time Card,[24] In-Office Use,[25] and Point of Sale,[26] as shown in Table 3.

Table 3. Capabilities Planned for Each Software Release (Cost in Millions)

Release Date	Function	Estimated Cost
2/15/2015	Camera	[redacted]
2/15/2015	Time Card	[redacted]
1/16/2016	In-Office Use	[redacted]
1/16/2016	Point of Sale	[redacted]
	Total	[redacted]

Source: MDD DAR phases 1 and 2.

Postal Service management indicated they re-examined these features and determined they were not necessary. We understand

21 This amount does not include the operating costs of [redacted] million.
22 [redacted].
23 Ability to use the embedded camera to take pictures of damaged packages, safety-related information, and accident reporting.
24 It could replace the current time keeping system.
25 Incorporate current in-office functionalities, such as arrival-at-unit scans, forwarding, and registered mail, to the MDD.
26 Ability to conduct point-of-sale transactions such as insurance, added service, postage, credit card acceptance, and receipt transactions.

the decisions management made to change priorities; however, some features could support future Postal Service products and services. For example, IMDs are currently used to scan packages at delivery units. But, MDDs enhanced with the in-office use function could eventually replace the IMDs, which have limited capabilities, are no longer manufactured, and have exceeded their anticipated useful life.

Recommendations

We recommended management include descriptions or explanations in the weekly status reports for all known issues related to Mobile Delivery Device network connectivity and functionality. We also recommended management communicate with the vendor to resolve the battery life issues. In addition, we recommended management revise Handbook F-66, General Investment Policies and Procedures, to require program sponsors to track estimated savings opportunities in the DAR, in the same manner as tracking financial information in the cash flow.

We recommend the vice president, Engineering Systems:

1. Include descriptions or explanations in the weekly status reports for all known issues related to Mobile Delivery Device network connectivity and functionality.

2. Communicate with the vendor to resolve the battery life issue to support continuous operation.

We recommend the vice president, Finance and Planning:

3. Revise the Handbook F-66, *General Investment Policies and Procedures*, to require program sponsors to track estimated savings opportunities in the DAR, in the same manner as tracking financial information in the cash flow.

Management's Comments

Management agreed with recommendations 1 and 2 but disagreed with recommendation 3 and the monetary impact. Management did not believe the OIG recognized the many positive aspects of the program in the report.

Regarding recommendation 1, management agreed to establish corrective program controls to ensure network connectivity and MDD functions operate. Specifically, upon detecting systemic MDD issues, management will escalate these issues to technical experts for identification and remediation. Also, management will institute a formal tracking of these escalations. Management's target implementation date is July 31, 2017.

Regarding recommendation 2, management stated they met with the vendor in February 2017 to discuss actions to improve battery life. As a result, management has taken several steps to extend battery life with additional improvements scheduled for implementation by July 31, 2017.

Regarding recommendation 3, management stated the DAR cash flow represents the business financial plan and is relied upon and approved by the IRC and the Postmaster General. In some instances, supplemental financial information, which includes potential savings, is difficult or impossible to accurately track. This information is provided within a DAR only to help illustrate other ancillary savings or benefits and is included for informational purposes.

Regarding the monetary impact, management disagreed with the methodology used, stating the $13.7 million assumes, without sufficient data, that all batteries purchased did not provide continuous operation as required by the contract's requirements. They added that the monetary impact was based on a small sample size of 55 interviews from 10 Postal Service facilities rather than based on a random, statistically-represented sample. Additionally, management stated that not all MDDs experience the same level of usage in any given shift, and some devices have extremely high level usage.

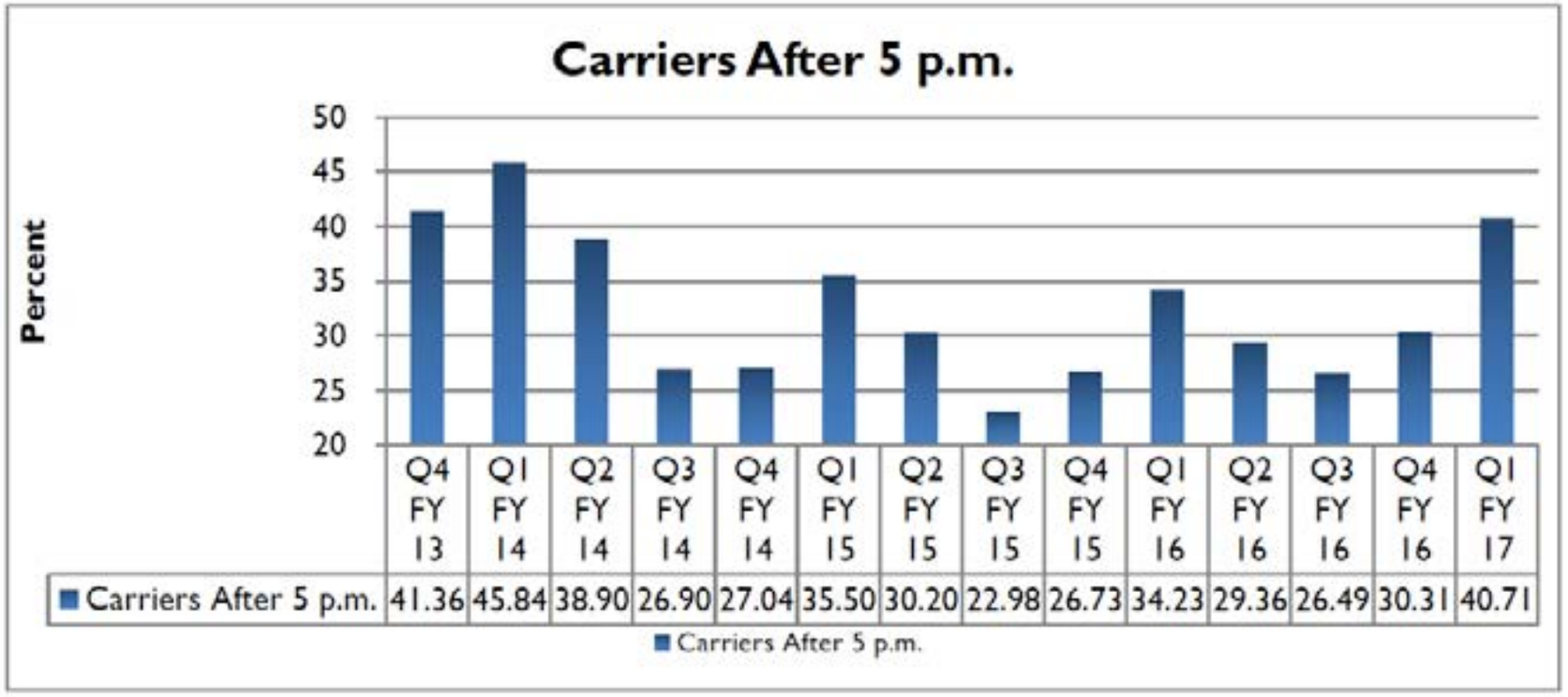
See Appendix B for management's comments in their entirety.

Evaluation of Management's Comments

The OIG considers management's comments responsive to the recommendations 1 and 2 in the report and corrective actions should resolve the issues identified in the report.

Regarding recommendation 3, we understand that Postal Service's systems do not have the capability to track everything. However, where available, we believe potential savings should be tracked and evaluated post-implementation. For example, the MDD DAR cited that MDDs would help get carrriers off the street by 5:00 p.m. The Postal Service has data that measures carriers returning from their routes after 5:00 p.m. The OIG uses that data and communicates the results to the Postal Service quarterly to assess risk associated with city delivery efficiency. Chart 1 shows the most recent information on carriers returning after 5 p.m.

Chart 1. Carriers After 5 p.m. by Quarter, Q4, FY 13, Through Q1, FY 17



The DAR is used by the IRC to make strategic business decisions regarding significant investments in infrastructure. Decision-makers and stakeholders need to clearly understand the significance of information presented in the DAR when making investment decisions. If the IRC cannot be assured the data used to justify the investment is reasonable and accurate, there is an increased risk the IRC will make poor business decisions. At a minimum, to ensure transparency and support appropriate decision-making, we believe DARs could distinctly note any reported ancillary benefits or savings that cannot or will not be tracked. However, we do not plan to pursue recommendation 3 through the formal audit resolution process.

The monetary impact claimed was not based on interviews conducted during the audit. Rather, it was based on the contract development to procure the MDDs. The MDD requirements were not properly communicated to the vendor. Additional functionalities were added after MDD deployment, which contributed to higher battery consumption. If management had identified and included the additional functionalities when building the contract, management could have projected battery life needs more accurately and ensured batterly life needs were met.

Finally, the OIG did recognize positive aspects of the MDD program in the report, such as:

- The MDD program has improved package visibility and achieved a key metric: the reduction of IMD repair and help desk costs.
- The MDD is a single device, unlike the pairing of two existing devices - IMD and clamshell cell phones - that allow letter carriers to track package delivery in real time.
- The MDD investment can help the Postal Service become the shipper of choice for more customers.
- The investment is a larger effort to strengthen the package processing and delivery network that supports volume growth, meets delivery expectations, and improves the customer experience by providing mail tracking status in real time.

All recommendations require OIG concurrence before closure. Consequently, the OIG requests written confirmation when corrective actions are completed. Recommendation 1 should not be closed in the Postal Service's follow-up tracking system until the OIG provides written confirmation that the recommendations can be closed. We consider recommendation 2 closed with the issuance of this report. We consider recommendation 3 closed, but not implemented by the Postal Service, with the issuance of this report.

Appendices

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Appendix A: Additional Information

Background

MDDs are handheld scanners that allow Postal Service letter carriers to track package delivery in real time. The MDDs have replaced the IMDs and clamshell cell phones letter carriers used on the street to track package delivery in near real time. The IMDs have limited capabilities and continue to face end-of-life issues. Their maintenance and repair costs have doubled each year over the past two years.

According to the DAR, the MDD program is a key component to successful implementation of Ready Now → Future Ready[27] Initiative #43,[28] which seeks to build a world class package platform and become the shipper of choice by establishing a package processing and delivery network that supports package volume and growth, meets delivery expectations, and improves the customer experience. This program also supports Ready Now → Future Ready Initiative #20,[29] which seeks to achieve 100 percent product visibility for packages and real-time delivery updates and street services. This technology should enable the Postal Service to be in a much stronger competitive position by offering high quality package delivery services that today's marketplace demands. Further, this program should help improve many aspects of the customer's experience that may drive confidence in existing product and services while also providing a foundation for future services.

MDDs are technologically based devices designed to support the real-time scanning requirements of Postal Service products and services, as well as future scanning needs. MDDs access wireless networks for real-time tracking. In addition, MDDs can support expanded services the Postal Service is offering and could offer in the future, such as Sunday package delivery, dynamic routing, and on-demand pick-up. According to the DAR, the MDDs will yield an accurate, reliable, and stable flow of data; improve scan upload performance to less than five minutes; and interface with the existing postal infrastructure.

The Postal Service approved [redacted] million to implement the MDD program. The hardware deployment (devices and related accessories such as holsters, charging cradles, power supplies, and batteries) and software releases started in September 2014 and ended in December 2015. A total of 262,800 MDDs were deployed. See Table 4.

Table 4. Investments Approval (Millions)

DAR	Capital Investment	Expense Investment	First Year Operating Costs	Total
Phase 1	[redacted]	[redacted]	[redacted]	[redacted]
Phase 2	[redacted]	[redacted]	[redacted]	[redacted]
Total	[redacted]	[redacted]	[redacted]	[redacted]

Source: Postal Service MDD DAR.

27 In FY 2017, the Postal Service renamed Delivery, Results, Innovation, Value, and Efficiency to Ready Now → Future Ready.
28 The title for Initiative #43 is *Building a World Class Package Platform.*
29 The title for this Initiative #20 is *Achieve 100 Percent Product Visibility.*

The Postal Service identified three key performance metrics in the DAR for evaluating the success of the program. See Table 5.

Table 5. Performance Metrics

Metric	Tracking System	Method	Indicator	DAR Goal
Time to post MDD scan data to PTS	PTS Report (updated quarterly)	Determine average time from package delivery to availability in PTS	Average time to post scan data to PTS	Less than 5 minutes
Percent of real-time MDD delivery scans	PTS Report (updated quarterly)	Calculate percent of delivery scans transmitted in real time	Compare percent of delivery scans transmitted within 5 minutes of delivery to total scans	95 percent of delivery scans
Reduction in IMD repair and Help Desk costs	Maintenance Report/ Enterprise Data Warehouse (EDW)[30] (Accounting)	Compare actual to DAR plan	Actual cost reduction in FY 2016	[redacted] million in FY 2016; million in FY 2017

Objective, Scope, and Methodology

Our objective was to assess whether the Postal Service achieved the performance metrics, costs, and savings identified in the DAR Business Case. To accomplish our objective, we:

- Reviewed and evaluated MDD program DARs for phases 1 and 2, Statement of Work, and related MDD training materials to determine whether the program achieved its goals.
- Interviewed the appropriate management to understand MDD deployment, functionality, and tracking of current and post-deployment performance.
- Visited 10 post offices[31] and interviewed 21 delivery unit managers and 34 letter carriers to understand their concerns about MDD deployment and functionality.
- Reviewed PTS reports to determine the time to post MDD delivery scan data.
- Reviewed the *FY 2016 IMD-MDD Weekly Status Report* to determine the reasons for delays in posting delivery scans to PTS.
- Reviewed the IRC post-deployment briefing slides and associated support documentation to validate the actual capital and expense investments and reduction in IMD repair costs.
- Reviewed capital outlay (expenditure) and expense reports in the Postal Service's EDW to determine whether management tracked program costs.

30 A repository for all data and the central source for information on retail, financial, and operational performance.
31 The 10 post offices we visited are located in the Seattle District in Washington, Triboro District in New York, Capital District in Maryland, and the Northern Virginia District in Virginia.

We conducted this performance audit from August 2016 through April 2017 in accordance with generally accepted government auditing standards and included such tests of internal controls as we considered necessary under the circumstances. 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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. We discussed our observations and conclusions with management on February 28, 2017, and included their comments where appropriate.

We assessed the data reliability of the MDD program by evaluating the program expenditures in the EDW and the performance metrics in the PTS. We determined that the data were sufficiently reliable for the purposes of this report.

Prior Audit Coverage

Report Title	Objective	Report Number	Final Report Date	Monetary Impact
Package Delivery Scanning – Chicago District	To assess the package scanning process for city delivery operations in the Chicago District.	DR-AR-16-003	3/31/2016	$80,832
Mobile Delivery Device Deployment and Functionality	To assess the deployment plan and functionality of the MDD.	MI-AR-15-005	7/8/2015	$255,017

Appendix B: Management's Comments

UNITED STATES POSTAL SERVICE

April 20, 2017

LORI LAU DILLARD
DIRECTOR, AUDIT OPERATIONS

SUBJECT: Mobile Delivery Device (MDD) Program (Report Number CP-AR-17-DRAFT)

Postal Service management has reviewed the subject draft audit report. The MDD program has made positive impacts on product visibility and our goal to provide more timely tracking information to our customers. In particular, one objective of the MDD program was to improve visibility for our customers through best-in-class real-time tracking capabilities using a single mobile device. In addition, we are disappointed that the Office of Inspector General (OIG) has failed to recognize the many positive aspects of the program in this report. We agree in part with recommendations made in the report; however we do not agree with the OIG's methodology used in calculating the monetary impact as it is an unrealistic assumption. We address the recommendations and monetary impact as follows.

Recommendation 1:
Determine, evaluate and establish corrective program controls for known issues and research items that did not contain description or explanations in the weekly status reports to ensure network connectivity and Mobile Delivery Device functions operate.

Management Response/Action Plan:
Management agrees with the recommendation to establish corrective program controls for known issues and research items that did not contain description or explanations in the weekly status reports to ensure network connectivity and MDD functions operate.

Management continues to support the Help Desk mechanism for field reporting of known issues. Upon detecting systemic MDD problems, the tier 2 help support personnel escalate the issue to tier 3 technical experts for identification and remediation. Management will institute the formal tracking of these escalations with a defined system for addressing those items affecting more than a minimal number of fielded devices.

Target Implementation Date:
July 31, 2017

Responsible Official:
Manager, Delivery & Mobile Technology in Engineering Systems.

Recommendation 2:
Communicate with the vendor to resolve the battery life issue to support continuous operation.

Management Response/Action Plan:
Management agrees with this recommendation. In February 2017, Postal Service engineers met with OEM's engineering group to discuss actions to improve battery life. As a result, management has taken several steps to extend battery life with additional improvements scheduled for implementation in May 2017.

Target Implementation Date:
July 31, 2017

Responsible Official:
Manager, Delivery & Mobile Technology in Engineering Systems

Recommendation 3:
Revise the Handbook F-66, General Investment Policies and Procedures, to require program sponsors to track estimated savings opportunities in the DAR, in the same manner as tracking financial information in the cash flow.

Management Response/Action Plan:
Management does not agree with recommendation 3. The DAR cash flow represents the business plan financials and is the financial plan relied upon and approved by the Investment Review Committee and/or the Postmaster General and Chief Executive Officer depending on the delegated authority. In some instances, supplemental financial information which, while "real" and intuitive, is difficult or impossible to accurately track—such as potential savings or a cost avoidance, improved quality, increased revenue due to improved customer service, etc.—is provided within a DAR only to help illustrate other ancillary savings or benefits and is included for informational purposes.

Monetary Impact:
Management disagrees with the report's monetary impact. This monetary impact assumes without sufficient supporting data that all 262,800 MDD batteries do not provide 12 hours of continuous operation as required by the contract's requirements; therefore, the full [redacted] cost for each battery is in question [redacted].

The monetary impact is based on an extremely small sample size of 55 interviews from 10 Postal Service facilities extrapolated to the entire population and was not assessed as a random, statistically significant representation of the MDD population. Nor does the sample consider the deployment dates of surveyed MDDs. This is important as MDDs were put into service in multiple phases between 2014 and 2016. Like any other battery-operated electronic hand-held device, as a device accumulates charge/discharge cycles over time, battery life declines. Additionally, not all MDDs experience the same level of usage in any given shift and some devices have extremely high levels of usage.

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