Automated Vehicle Utilization System Mileage Use – Southern Area

Audit Report

Report Number DR-AR-17-006

May 25, 2017

OFFICE OF
INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

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INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

Highlights

The Southern Area's delivery route mileage data was not always accurate.

Background

The U.S. Postal Service delivers almost 154 billion pieces of mail annually using 227,896 postal-owned vehicles. In fiscal year (FY) 2016, postal-owned delivery vehicles traveled over one billion miles nationwide, about 203 million miles more than initially estimated.

A delivery route is a scheduled course of travel to deliver the mail. Management generally establishes the base miles for the delivery routes twice each year; as part of the annual route inspection for city delivery, and during the National Rural Mail Count for rural delivery.

Postal Service supervisors and managers use the Delivery Operations Information System (DOIS), the e-PS Form 4003 Official Rural Route Description web application system (e-PS Form 4003), and the Automated Vehicle Utilization System (AVUS) to help manage carrier operations and mileage on delivery routes.

The DOIS and e-PS Form 4003 are used to record the authorized base miles for carrier routes and the AVUS manages day-to-day vehicle use. Carriers enter vehicle mileage information at the beginning and end of their routes via a Mobile Delivery Devices (MDD) or Intelligent Mail Devices (IMD) scanner. The MDD geo-fence technology component tracks carriers as they travel along their routes from departure until they return from street delivery, whether on foot or in a vehicle. This data is maintained in the Regional Intelligent Mail Server (RIMS), which sends the mileage data to AVUS.

Using the end-of-route mileage data, the AVUS calculates hourly vehicle use, and compares miles driven to authorized base miles for the route. Delivery unit supervisors use this information to ensure carriers are not deviating from the line of travel for their routes. The AVUS information is also of primary importance to Vehicle Maintenance Facility officials. Each month, AVUS downloads vehicle mileage data into the Solution for Enterprise Asset Management (SEAM) system for these officials to schedule vehicle maintenance service for postal-owned vehicles.

The Southern Area has 12 districts and 33,902 delivery routes. In FY 2016, the Southern Area's route base miles were 158,910,081 and its mileage variance—the difference between the base miles and actual miles — was 47,627,516 miles or 29.9 percent, the highest mileage variance in the country, while the Northeast Area's mileage variance of 21,697,817 miles was the lowest in the country.

Our objective was to evaluate the accuracy of delivery route mileage data in the Southern Area.

What the OIG Found

The Southern Area's delivery route mileage data was not always accurate. Delivery route base mileage data for over 6,000 routes or about 27 percent of the Southern Area's city routes was inconsistent between the AVUS and the DOIS. In addition, over 4,000 or about 77 percent of the rural route's base mileage data was inconsistent between the AVUS and the e-PS Form 4003. Furthermore, actual daily miles recorded in the AVUS exceeded the AVUS route base miles by almost 80,000 miles with no justification for the mileage deviations.

These conditions occurred because supervisors did not always maintain route base miles in the AVUS, DOIS and the e-PS Form 4003 systems, update mileage data, or monitor and document daily mileage use and deviations. As a result, the area incurred more than $25 million in questioned costs in FY 2016 for the unsupported mileage. Eliminating mileage deviations could further reduce area costs by more than $25 million annually.

In other matters, Postal Service Headquarters management suggested we evaluate the accuracy of delivery route mileage data using the data from the Delivery Management System (DMS) rather than the AVUS actual route mileage data, given the recent advances in geo-fence data from the MDD scanners. We noted that the geo-fence technology in the MDD tracks all carrier movement on the route – both walking and driving – but does not distinguish between the two. The technology could be modified to differentiate carrier movement from vehicle movement to more accurately record actual vehicle mileage data. Alternatively, sensors could be used in the vehicles to track actual mileage and eliminate the need for manual input into AVUS.

What the OIG Recommended

We recommended management review route base mileage and make the necessary corrections in the AVUS, the DOIS, and the e-PS Form 4003 systems. We also recommended management provide training to existing, newly promoted, and temporary supervisors on maintaining route base mileage, monitoring daily mileage and variances, and documenting daily mileage deviations.

In addition, we recommended management explore automated solutions for recording vehicle mileage, which could include modifications to separate carrier and vehicle activity on delivery routes or use of vehicle sensors.

Transmittal Letter

May 25, 2017

MEMORANDUM FOR: KEVIN C. MCADAMS
VICE PRESIDENT, DELIVERY OPERATIONS

SHAUN E. MOSSMAN
VICE PRESIDENT, SOUTHERN AREA OPERATIONS

E-Signed by Janet Sorensen
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FROM: Janet M. Sorensen
Deputy Assistant Inspector General
 for Retail, Delivery, and Marketing

SUBJECT: Audit Report – Automated Vehicle Utilization
System Mileage Use – Southern Area
(Report Number DR-AR-17-006)

This report presents the results of our audit of Automated Vehicle Utilization System Mileage Use – Southern Area (Project Number 17RG005DR000).

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact Rita F. Oliver, Director, Delivery Directorate, or me at 703-248-2100

Attachment

cc: Corporate Audit Response Management
    Postmaster General

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Findings

The Southern Area's route base miles for FY 2016 were 158,910,081 and its mileage variance was 47,627,516 miles (29.9 percent), the highest mileage variance in the country.

Introduction

This report presents the results of our self-initiated audit of Automated Vehicle Utilization System[1] Mileage Use – Southern Area (Project Number 17RG005DR000). Our objective was to evaluate the accuracy of delivery route mileage data in the Southern Area. See Appendix A for additional information about this audit.

A delivery route is a scheduled course of travel to deliver the mail. The U.S. Postal Service generally establishes the route's base miles for city delivery and rural delivery routes. Postal supervisors and managers use the Delivery Operations Information System (DOIS)[2], e - Postal Service Form 4003 Official Rural Route Description web application system (e-PS Form 4003),[3] and Automated Vehicle Utilization System (AVUS) to help them manage daily carrier operations.

Although the DOIS and e-PS Form 4003 are important in recording the authorized miles for carrier routes, AVUS is the primary system for managing day-to-day vehicle use. Carriers enter vehicle mileage information at the beginning and end of their routes via Mobile Delivery Device (MDD) or Intelligent Mail Device (IMD)[4] scanners. The route mileage data is maintained in the Regional Intelligent Mail Server (RIMS)[5] and sent to AVUS, which calculates hourly vehicle use and compares actual miles driven to the base miles for the route. Delivery unit supervisors use this information to ensure that carriers are not deviating from the line of travel for their routes.

AVUS information is also of primary importance to Vehicle Maintenance Facility officials. Each month, AVUS downloads vehicle mileage data into the Solution for Enterprise Asset Management (SEAM)[6] system for officials to schedule vehicle maintenance service for postal-owned vehicles.

The Southern Area's route base miles for fiscal year (FY) 2016 were 158,910,081 and its mileage variance was 47,627,516 miles (29.9 percent), the highest mileage variance in the country, while the Northeast Area's mileage variance of 21,697,817 miles was the lowest in the country. Moreover, a monthly mileage variance analysis for the selected sites showed that actual route mileage exceeded base mileage on average each month by over 140,451 miles, including miles driven on routes during non-peak and peak season (see Appendix B).

Summary

The Southern Area's delivery route mileage data was not always accurate. Our review of route base mileage data determined that base mileage data for over 6,000 or about 27 percent of the Southern Area's city routes was inconsistent between AVUS and DOIS and base mileage data for over 4,000 or about 77 percent the Southern Area's rural routes was inconsistent between AVUS and e-PS Form 4003. Also, nearly 80,000 miles or 66 percent of the actual daily miles recorded in AVUS exceeded the AVUS route base miles and deviations were unsupported. These conditions occurred because supervisors did not always maintain route base miles in the AVUS and DOIS systems, update mileage data, or monitor and document daily mileage use and deviations. As a result, the Southern Area incurred more than $25 million in questioned costs in FY 2016 for the unsupported mileage. Eliminating mileage deviations could further reduce area costs by more than $25 million annually.

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1   AVUS was originally a part of Managed Service Point, but became a separate system in 2002. It is web-based and costs about $434,000 annually to maintain.
2   DOIS is intended to be used by delivery unit supervisors to support the management of delivery unit office activities, planning of street activities from the office, and management of route inspection and adjustment activities for city routes only.
3   e-PS Form 4003 is a web application that allows delivery unit management to create a line-of-travel for each rural route record and pertinent information such as distance for rural routes.
4   The IMD and MDD are handheld devices with an integrated barcode scanner for data collection.
5   RIMS captures geo-location from wireless IMDs or MDDs and displays that information on a web interface for delivery supervisors to use in daily operations.
6   A web-based application designed to improve fleet inventory tracking, visibility. It also standardizes asset tracking and maintenance repair functions.

Postal Service Headquarters management suggested the U.S. Postal Service Office of Inspector General (OIG) evaluate the accuracy of delivery route mileage data. Headquarters management recommended use of data from the Delivery Management System (DMS) [7] rather than AVUS actual route mileage data, given the recent advances in geo-fence[8] data from the MDDs. However, we noted that the geo-fence technology in the MDD tracks all carrier movement on the route – both walking and driving – but does not distinguish between the two. The technology could be modified to differentiate carrier movement from vehicle movement to more accurately record actual vehicle mileage data. Alternatively, sensors could be used in the vehicles to track actual mileage and eliminate the need for manual input into AVUS.

Inaccurate Mileage Data

The Southern Area's delivery route mileage data was not always accurate. Our comparative analysis of the AVUS Base Mileage Report and the DOIS Route Base Information Report[9] showed AVUS had base mileage information for only 23,112 of the 25,412 city routes listed in DOIS. Furthermore, route base mileage data for 6,155 (26.6 percent) of the Southern Area's city routes listed in AVUS and DOIS (see Table 1).

AVUS Base Mileage Report and the DOIS Route Base Information Report showed AVUS had base mileage information for only 23,112 of the 25,412 city routes listed in DOIS.

Table 1. OIG Comparison of City Route Base Miles in AVUS and DOIS

District	DOIS Routes	DOIS Routes Not Listed In AVUS	DOIS Routes Listed in AVUS	Number of Routes w/ Different Routes Base Mileage in DOIS and AVUS	Percentage of Routes w/ Different Base Mileage
Alabama	1,393	92	1,301	337	25.9%
Arkansas	821	47	774	207	26.7%
Dallas	2,127	116	2,011	815	40.5%
Fort Worth	1,578	245	1,333	288	21.6%
Gulf Atlantic	2,007	171	1,836	365	19.9%
Houston	3,257	229	3,028	905	29.9%
Louisiana	1,831	191	1,640	479	29.2%
Mississippi	642	36	606	186	30.7%
Oklahoma	1,299	25	1,274	179	14.1%
Rio Grande	2,871	377	2,494	520	20.9%
South Florida	3,787	480	3,307	676	20.4%
Suncoast	3,799	291	3,508	1,198	34.2%
Totals	25,412	2,300	23,112	6,155	26.6%

Source: OIG analysis of the AVUS data as of October 13, 2016.

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7   The DMS provides visibility on packages, vehicles, routes, and actual deliveries in real time.
8   Geo-fence technology is a proactive approach to increasing carrier visibility to aid street management.
9   Our comparison of the DOIS and AVUS systems only included city routes because rural routes are not in DOIS.

Our comparative analysis of the AVUS Base Mileage Report and the e-PS Form 4003 Route Base Information Report[10] showed AVUS had base mileage information for only 5,578 of the 8,988 routes listed on e-PS Form 4003. Additionally, route base mileage data was inconsistent for 4,316 (77.4 percent) of the 5,578 rural routes listed in AVUS and e-PS Form 4003 (see Table 2).

We analyzed 120,456 variance miles in 10 districts and identified 79,540 variance miles (66 percent) that were unsupported.

Table 2. OIG Comparison[11] of Rural Route Base Miles in AVUS and e–PS Form 4003

District	e-PS Form 4003 Routes	e-PS Form 4003 Routes Not Listed In AVUS	e-PS Form 4003 Routes Listed in AVUS	Number of Routes w/ Different Routes Base Mileage in e-PS Form 4003 and AVUS	Percentage of Routes w/ Different Base Mileage
Alabama	569	229	340	257	75.6%
Arkansas	197	75	122	96	78.7%
Dallas	879	247	632	509	80.5%
Fort Worth	615	187	428	340	79.4%
Gulf Atlantic	960	734	226	181	80.1%
Houston	975	246	729	586	80.4%
Louisiana	517	126	391	304	77.7%
Mississippi	262	117	145	103	71.0%
Oklahoma	444	106	338	252	74.6%
Rio Grande	853	344	509	431	84.7%
South Florida	430	73	357	295	82.6%
Suncoast	2,287	926	1,361	962	70.7%
▷ Totals	8,988	3,410	5,578	4,316	77.4%

Source: OIG analysis of AVUS and e-PS Form 4003 data as of December 14, 2016.

We analyzed 120,456 variance miles in 10 districts and identified 79,540 variance miles (66 percent) that were unsupported.[12] Specifically, 47,526 (39.5 percent) could not be supported by management, and 32,014 (26.6 percent) were mileage deviations management attributed to uncorrected errors[13] (see Table 3).

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10 Our comparison of the e-PS Form 4003 and AVUS systems only included rural routes that used a postal-owned vehicle.
11 Comparison analyses were completed using the most recent data available in AVUS at the time of testing.
12 Supported variance mileage may be incurred when a carrier must deviate from their route due to splits, pivots, collections, parcel runs, new growth, Express Mail deliveries, customer demands, or Amazon Sunday deliveries.
13 Input error to mileage in the MDD scanners. Carriers often input the mileage incorrectly and the supervisory does a daily review, and should provide feedback to the employee when errors are input.

Table 3. OIG Analysis of Unsupported Variance Miles in AVUS

District	Total Variance Miles Reviewed[14]	Variance Miles Unsupported	Percentage of Variance Miles Unsupported	Variance Miles Attributed to Uncorrected Errors	Percentage of Variance Miles for Uncorrected Errors	Combined Miles	Combined Percentage
Alabama	12,731	1,588	12.5%	7,325	57.5%	8.913	70%
Dallas	2,409	0	0.0%	0	0.0%	0	0.0%
Gulf Atlantic	1,487	0	0.0%	0	0.0%	0	0.0%
Houston	19,121	6,323	33.1%	0	0.0%	6,323	33.1%
Louisiana	12,781	648	5.1%	9,392	73.5%	10,040	78.6%
Mississippi	4,615	1,940	42.0%	1,381	29.9%	3,321	72.0%
Oklahoma	3,214	935	29.1%	0	0%	935	29.1%
Rio Grande	27,063	18,026	66.6%	3,308	12.2%	21,334	78.8%
South Florida	14,963	12,569	84.0%	0	0.0%	12,569	84.0%
Suncoast	22,072	5,497	24.9%	10,608	48.1%	16,105	73.0%
▷ Totals	120,456	47,526	39.5%	32,014	26.6%	79,540	66.0%

Source: OIG analysis of AVUS, Enterprise Data Warehouse/Delivery Data Mart Report.

These conditions occurred because supervisors did not always maintain route base miles in the AVUS and DOIS systems, update mileage data, or monitor and document daily mileage use and deviations.

For example:

- Supervisors informed the OIG they were not trained on AVUS or DOIS or aware of the requirements to establish or update route mileage data or monitor and document daily mileage use and deviations. New or reassigned supervisors had not included inputting and updating route mileage base data into their daily routine and relied on district management to update route base mileage after they performed route inspections.[15] Postal Service policy[16] requires unit management to establish base miles for a city delivery route using the PS Form 3999 and for a rural delivery route using e-PS Form 4003. Postal Service policies[17] also require management to update route base miles in the AVUS, DOIS, and e-PS Form 4003 systems. In addition, supervisors should maintain carrier route information for all carrier routes for a facility and add or edit base miles for each route in AVUS daily. According to area officials, if the base mileage varies in the AVUS, DOIS, and e-PS Form 4003 systems, the District Operating Specialist office must be involved in changing the authorized miles.

- At 15 of 30 units supervisors did not discuss mileage variances with carriers, and at 14 of 30 units, supervisors did not perform daily reviews of the actual miles in AVUS. Furthermore, only one of the 30 units documented variances on the vehicle utilization daily report and filed the reports for potential auditing. AVUS guidelines[18] require supervisors to use the AVUS application

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14 We reviewed routes with variances greater than five miles.
15 PS Form 3999, Inspection of Letter Carrier Route, is used for city delivery routes and e-PS Form 4003, is used for rural delivery routes.
16 Handbook M-39, *Management of Delivery Services*, March 18, 2004.
17 Delivery, Standard Operating Procedures, March 2009.
18 AVUS, *Supervisor Users Guide*, September 2005.

daily to conduct supervisory reviews and provide feedback to the employees when necessary. The guidelines also require supervisors to use the vehicle utilization daily report to document the reason for deviations of one or more miles per route, and to file this documentation for potential auditing. During discussions with area management, officials stated that unit management should obtain the AVUS report from the previous day, review, correct, sign, and date the form, and place it in the carrier's daily folder for review purposes. The Southern Area requires supervisors to correct all errors by the end of the week. Errors may be corrected the last day of the month, after which corrections or adjustments cannot be made.

Accurate mileage data established at the route inspection, adjustments, and managing and monitoring daily mileage are critical to effectively manage vehicle use. As a result the area incurred more than $50.3 million[19] in questioned costs for unsupported mileage.[20] Eliminating mileage deviations could further reduce area costs by more than $50,277,866[21] annually.

Corrective Action

During the audit, management took corrective actions to ensure the accuracy of vehicle mileage data at six of the 30 delivery units. Actions included giving stand up talks, training, and correcting established base mileage and errors in the AVUS, DOIS, and e - PS Form 4003 systems (see Table 4).

Table 4. Districts, Delivery Units, and Corrective Actions

⊙ District	Delivery Unit	▷ Corrective Action Taken
Alabama	Birmingham Downtown Carrier Facility	Conducted refresher training regarding proper scanning, mileage entry, and mileage deviations on December 21, 2016, and January 10, 2017.
Alabama	West End Post Office	Conducted a stand-up talk on verifying accurate profile information and mileage in scanners on January 20, 2017.
Alabama	Fairfield Station	Conducted training on entering vehicle number and odometer mileage in scanners, and documenting daily mileage variances on January 19, 2017.
Houston	Martin L King Station	Began maintaining records for daily reviews, corrections, and variance discussions with carriers on January 26, 2017.
Mississippi	Ridgeland Main Post Office	Corrected and updated base mileage established in AVUS on November 30, 2016.
Suncoast	Tarpon Springs Main Post Office	Corrected and updated base mileage established in AVUS on November 15, 2016.

Source: OIG analysis

19 We calculated unsupported questioned costs of $50,277,866 by adding $28,191,035 for FYs 2015 – 2016 mileage deviation and $22,086,030 for FYs 2015 – 2016 for uncorrected errors.
20 Unnecessary, unreasonable, unsupported, or an alleged violation of law, regulation contract, etc. May be recoverable or unrecoverable. Usually a result of historical events.
21 Funds that could be used more efficiently by implementing recommended actions.

Other Matters

With recent advances in technology and data, including geo-fence information from the MDD scanners, Postal Service Headquarters management suggested the OIG evaluate the accuracy of delivery route mileage data using the data from the DMS rather than AVUS actual route mileage data. The DMS aids in carrier efficiency during street delivery because the system combines Global Positioning System (GPS)[22] data and other data from various systems such as Managed Service Points (MSP),[23] RIMS, and DOIS to allow supervisors to review each route and monitor the location of each carrier and whether he or she is ahead or behind the scheduled delivery[24] times. This is accomplished with the geo-fence technology component in the MDD that tracks carriers from their departure to begin their routes to their return from street delivery. In addition, RIMS contains each delivery unit's route number, vehicle identification number, and employee assigned to the route.

The OIG reviewed the DMS and RIMS route data from the geo-fence route daily tracking and discussed these issues with Postal Service management. We noted that the geo-fence technology in the MDD tracks the carrier whether walking the route or driving in a vehicle on the route, but does not differentiate between the two. The technology could be modified to distinguish carrier movement from vehicle movement to more accurately record actual vehicle mileage data. Alternatively, sensors could be use in the vehicles to track actual mileage and eliminate the need for manual input into AVUS.

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22 GPS locator chip, which is present in all of the IMD or MDD wireless devices, tracks the location of the cellphone by latitude and longitude and records data every 60 seconds.

23 A designated location along a delivery route with an affixed barcode that a carrier is expected to scan. Management uses MSP scan times to help supervise the performance on each route.

24 The scheduled delivery times are based on each route's base evaluation and the associated MSP scan times on each route.

Recommendations

We recommend management review route base mileage and make necessary corrections, and provide training to supervisors on maintaining route base mileage and monitoring and documenting daily mileage use and deviations.

We recommend the Vice President, Southern Area, direct district managers to:

1. Review route base mileage and make the necessary corrections in the Automated Vehicle Utilization System, Delivery Operations Information System, and e Postal Service Form 4003 systems.

2. Provide training to existing, newly promoted, and temporary supervisors on maintaining route base mileage, monitoring daily mileage and variances, and documenting daily mileage deviations.

We recommend the Vice President, Delivery Operations, coordinate to explore:

3. Automated solutions for recording vehicle mileage, which could include modifications to separate carrier and vehicle activity on delivery routes or use of vehicle sensors.

Management's Comments

Management disagreed with the report's assumptions, methodologies, findings, recommendations and monetary impact. Management stated they do not believe the auditors used due diligence in completing the audit and relied too heavily on interviews rather than data. Management also disagreed with numerous aspects of the report, including the percentage of rural routes that have mileage inconsistences, the number of routes and vehicles, and the number of unsupported miles. Management indicated that we did not consider numerous operational aspects including the *Amazon Parcel Return Service Pilot* program and the time needed to deliver packages. Management also stated that the Birmingham Main Post Office listed in the report does not have any delivery routes and it is unclear what vehicles were checked at this facility and to whom they were assigned.

Regarding recommendation 1, management disagreed because the Southern Area does not know if the cost outweighs the benefit.

Regarding recommendation 2, management disagreed because the cost of recording every deviation on every city and rural carrier on a daily basis is unknown.

Regarding recommendation 3, management stated the Postal Service does not currently have a working technology solution for collecting and analyzing vehicle miles driven. However, management stated they will continue to explore passive technology based solutions for identifying, tracking, recording, and analyzing vehicle miles driven.

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

Evaluation of Management's Comments

Management's written comments were unresponsive and inconsistent with their verbal comments expressed throughout the audit and during our most recent meetings, including the exit briefings. At our last meeting on April 5, 2017, management indicated agreement with our findings and recommendations, while disagreeing with the report's monetary impact. Such written comments are uncharacteristic of the management and field staff we interacted with throughout the audit. In addition, management's comments indicated a disregard for compliance with Postal Service policy as it relates to the accuracy of mileage in AVUS. Such information is one critical component to ensuring appropriate maintenance for vehicles in the Southern Area.

We acknowledge that our report did not clearly outline the types of delivery vehicles we included in our review and incorrectly identified the Birmingham Downtown Carrier Facility as the Birmingham Main Post Office. We have updated our report for both issues accordingly. Beyond these two minor issues, we stand by all of the work performed during this audit, and are perplexed and disappointed by the comments provided by management in response to this report.

Regarding the disagreements with recommendations 1 and 2, we note that Postal Service policy requires supervisors to make mileage corrections in AVUS. Updates to this system are critical to ensure the accuracy of the data in AVUS and the integrity of the vehicle maintenance program.

Regarding recommendation 3, management disagreed but stated that they will explore passive technology to identify, track, record and analyze miles driven in the future. While this action satisfies the intent of our recommendation, management declined to provide a completion date. We view the failure to provide an implementation date as non-responsive.

We view the disagreements on recommendations 1, 2, and 3 as unresolved until we coordinate a resolution with management.

Appendices

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Background

The Postal Service delivers almost 154 billion pieces of mail annually using one of the largest vehicle fleets in the country, which includes over 227,896 postal-owned vehicles used primarily to deliver and collect mail. In FY 2016, postal-owned delivery vehicles traveled over one billion miles nationwide, about 203 million miles more than initially estimated.

A delivery route is a scheduled course of travel to deliver the mail. The Postal Service generally establishes the route's base miles for city delivery and rural delivery routes twice each year: as part of the annual route inspection for city delivery, and during the National Rural Mail Count for rural delivery. Postal Service supervisors and managers use the DOIS, e-PS Form 4003 web application system and AVUS to help manage daily carrier operations. DOIS contains the city delivery base mileage data and route adjustment information as well as mail volume and projected office and street hours for each route. The e-PS Form 4003 contains the rural delivery base mileage data and pertinent information such as boxes served, dismounts, dismount distances.

Although DOIS and the e-PS Form 4003 are important in recording the authorized miles for carrier routes, AVUS is the primary system for managing day-to-day vehicle use. AVUS was designed to allow carriers to enter vehicle mileage information via MDDs or IMDs, at the beginning and end of their routes. The route base mileage data is maintained in RIMS with the ending mileage data. At the end of the route, AVUS calculates hourly vehicle use and compares the miles driven to authorized miles for the route. Delivery unit supervisors use this information to ensure that carriers are not deviating from the line of travel for their routes. AVUS information is also of primary importance to Vehicle Maintenance Facility officials. Each month, AVUS downloads vehicle mileage data into the SEAM system. Vehicle maintenance officials use this information to schedule vehicle maintenance service based on mileage.

The Southern Area's FY 2016 route base miles were 158,910,081 and its mileage variance was 47,627,516 miles (29.9 percent), the highest variance mileage in the country.

Objective, Scope, and Methodology

Our objective was to evaluate the accuracy of delivery route mileage information in the Southern Area.
To accomplish our objective we:

- Reviewed documentation and applicable policies and procedures for vehicle operations relevant to AVUS, DOIS, e-PS Form 4003, and SEAM.

- Reviewed PS Forms 3999 to determine whether supervisors were following policies and procedures for establishing or updating miles in the AVUS and DOIS.

- Obtained, reviewed, and analyzed delivery unit data from AVUS, DOIS, e-PS Form 4003, and SEAM for all delivery unit miles, variances, and fuel costs.

- Selected the Southern Area for review based on it having the second highest variance mileage percentage (29.9 percent).

- Selected 30 units in the Southern Area to review based on delivery units grouped by variance percentage range (for example: .01-10 percent, 11-20 percent and so forth) and using a cluster point statistical sampling methodology. Evaluated average monthly variance mileages over a 2 year period, for all routes in our review sample (see Appendix C.)

- Evaluated all routes, all delivery vehicle types, and obtained support for routes with an average daily variance rounded to 5 miles or greater.

- Compared established route base mileage information in AVUS to established route base mileage information in the DOIS and in the e-PS Form 4003, for accuracy.

- We also compared the base mile data contained in the DOIS to the PS Forms 3999 for selected routes to determine if base miles matched.

- Used the total unsupported variance miles determined in our review to establish a variance mileage percentage for the Southern Area in order to estimate monetary impact.

- Conducted on-site interviews and observations at selected delivery units to obtain information on vehicle operations, unit operations, office processes, vehicle procedures, etc.

- During on-site interviews, supervisors pulled PS Form 3996 to identify pivots, splits or other deviations and PS Form 4565 Vehicle Repair Tag to identify managers vehicles placed shop or needed repair.

- Interviewed and discussed results of the audit with delivery unit and area management; the acting Manager, Delivery; the vice president, Southern Area Operations; and Postal Service Headquarters management.

We conducted this performance audit from October 2016 through May 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 finding and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our finding and conclusions based on our audit objective. We discussed our observations and conclusions with management on March 14 and March 24, 2017, and included their comments where appropriate.

We assessed the reliability of the systems using reports obtained from AVUS[25] to determine if base mileage established in the DOIS and the e-PS Form 4003 was consistent with base mileage established in AVUS. 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
Automated Vehicle Utilization System Mileage Use – Pacific Area	To evaluate the accuracy of delivery route mileage data in the Pacific Area.	DR-AR-16-010	9/15/2016	$23 million

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25 We used the AVUS Base Mileage report and the AVUS Vehicle Utilization report for our analysis.

Appendix B:
Monthly Variance Mileage for Site Observations

Year and Month	Routes in AVUS	Base Miles per Month	Actual Miles per Month	Variance Miles per Month	Variance Mileage Percentage
2014-10	891	295,610	434,232	138,622	46.9%
2014-11	890	257,188	383,806	126,618	49.2%
2014-12	889	298,396	471,010	172,614	57.8%
2015-01	895	283,781	428,692	144,911	51.1%
2015-02	890	262,055	387,822	125,767	48.0%
2015-03	896	297,984	461,902	163,918	55.0%
2015-04	896	295,159	436,160	141,001	47.8%
2015-05	900	273,264	395,568	122,304	44.8%
2015-06	899	286,140	428,730	142,590	49.8%
2015-07	897	282,271	421,019	138,748	49.2%
2015-08	899	279,925	417,121	137,196	49.0%
2015-09	911	284,588	419,082	134,494	47.3%
2015-10	915	305,930	439,390	133,460	43.6%
2015-11	895	260,230	384,395	124,165	47.7%
2015-12	899	304,859	470,153	165,294	54.2%
2016-01	902	284,537	417,025	132,488	46.6%
2016-02	901	272,454	399,866	127,412	46.8%
2016-03	895	303,839	453,444	149,605	49.2%
2016-04	900	303,224	446,319	143,095	47.2%
2016-05	894	286,317	422,849	136,532	47.7%
2016-06	897	293,616	441,986	148,370	50.5%
2016-07	891	267,810	410,586	142,776	53.3%
2016-08	893	305,533	451,965	146,432	47.9%
2016-09	906	283,303	415,719	132,416	46.7%
Total	---	**6,868,013**	**10,238,841**	**3,370,828**	---
Averages	**898**	---	---	**140,451**	**49.1%**

Source: OIG analysis of monthly AVUS Vehicle Utilization Report, from October 1, 2014, through September 30, 2016.

Appendix C: Delivery Units Selected for Site Observations

District	Delivery Unit	Variance Range
Alabama	Birmingham Downtown Carrier Facility	61 to 70%
Alabama	Fairfield Station	Above 91%
Alabama	West End Station	51 to 60%
Dallas	Robert Price Station	31 to 40%
Gulf Atlantic	Nobles Station	11 to 20%
Houston	Eastwood Station	Above 91%
Houston	Martin L King Station	31 to 40%
Houston	Texas City Main Post Office	11 to 20%
Houston	Westfield Station	61 to 70%
Houston	William Rice Carrier Annex	81 to 90%
Louisiana	Kaplan Main Post Office	.01 to 10%
Louisiana	Lynbrook Station	41 to 50%
Louisiana	Southfield Station	71 to 80%
Mississippi	Ridgeland Main Post Office	21 to 30%
Oklahoma	Ada Administrative Post Office	41 to 50%
Oklahoma	Downtown Station/Tulsa	21 to 30%
Rio Grande	Cedar Elm Station	51 to 60%
Rio Grande	Lamar Park Station	81 to 90%
Rio Grande	Northcross Station	71 to 80%
Rio Grande	Southeast Austin Station	Above 91%
South Florida	Greenacres Branch	11 to 20%
South Florida	Pahokee Administrative Post Office	.01 to 10%
South Florida	Tamarac Branch	81 to 90%
Suncoast	Clermont Carrier Annex	51 to 60%
Suncoast	Crossroads Station	61 to 70%
Suncoast	Gotha Main Post Office	.01 to 10%
Suncoast	New Smyrna Beach Main Post Office	21 to 30%
Suncoast	Northside Station	71 to 80%
Suncoast	Sunset Point Branch	31 to 40%
Suncoast	Tarpon Springs Main Post Office	41 to 50%

Source: OIG analysis of the AVUS Vehicle Utilization Reports, from October 1, 2016, through January 26, 2017.

UNITED STATES
POSTAL SERVICE

April 24, 2017

LORI LAU DILLARD
DIRECTOR, AUDIT OPERATIONS

SUBJECT: Automated Vehicle Utilization System Mileage Use – Southern Area Report Number
DR-AR-17-DRAFT

The Southern Area appreciates the opportunity to address the findings and recommendations cited in the Southern Area AVUS report.

The portion of the Office of Inspector General Report titled "What the OIG Found:" states,

"The Southern Area's delivery route mileage data was not always accurate. Delivery route base mileage data for over 6,000 routes or about 27 percent of the southern Area's city routes was inconsistent between the AVUS and the DOIS. In addition, over 4,000 or about 77 percent of the rural routes base mileage data was inconsistent between the AVUS and the e-PS Form 4003. Furthermore, actual daily miles recorded in the AVUS exceeded the AVUS route base miles by almost 80,000 miles with no justification for the mileage deviations. These conditions occurred because supervisors did not always maintain route base miles in the AVUS, DOIS and the e-PS Form 4003 systems, update mileage data, or monitor and document daily mileage use and deviations. As a result, the area incurred more that $25 million in questioned costs in FY 2016 for unsupported mileage. Eliminating mileage deviations could further reduce area costs by more than $25 million annually."

Southern Area, however, disagrees with the assumptions and methodologies found in the report. We do not believe due diligence was done to complete this audit, as it fails to validate the charges of excess mileage versus deficiencies with administrative processes.   Also, the auditors did not provide data that would have been helpful to the Area and the Districts, to validate the allegations, and initiate remediation, if necessary. The report was found to be so general in nature, and containing numerous unsubstantiated claims, to be of little value.

Of the 30 Offices cited in the report, there was no evidence that the auditors pursued any type of mileage verification of their own. There was no mention of visual verification of delivery employees or vehicle activities to substantiate claims. Information sources such as the Delivery Unit Daily Packets, PS Form 3999, PS Form 3996, Scan Data from the End Of Day Report, Southern Area or District Local Operation Centers (LOC), Change Suspension Discontinuance Center (CSDC), PS Form 4565 Vehicle Repair Tag, and VMF Repair Logs could have been accessed. Instead, conversations with unnamed sources offering anecdotal tales were cited as evidence.

The Southern Area is aware that, almost daily, mileage exceeding the e-PS Form 4003 and AVUS data occurs due to splits, pivots, collections, parcel runs, new growth, Express Mail, customer

PO Box 224748
DALLAS, TX 75222-4748
OFFICE: 214-819-8650
FAX: 214-905-9227

demands, and Amazon Sunday. The report states that these activities were not questioned, but the methodology used to eliminate them from the report was not shared, if they were eliminated at all.

Financial assessment contained questionable entries. The likelihood that "questioned costs" for FY 2015 and 2016 would be exactly the same should raise eyebrows for even the most cursory of reviews. The fuel cost per mile is incorrect according to *SEAM's "Make/Model Cost Report for FY 2016"*, the source cited in this report. Taking this questionable data and simply doubling it without a reasonable explanation appears negligent.

In other words, the report failed to validate whether the issues were due to administrative processes or excess mileage. We agree that in some instances administrative processes may not have been followed, but to present guesses and suppositions as facts is regrettable.

1. Southern Area Management does not agree with the percentage of rural routes that have mileage that is inconsistent between e-PS Form 4003 and AVUS data.
    a. The Southern Area has 9,002 rural routes with Postal vehicles assigned.
    b. The report states that "over 4,000 or about 77 percent of the rural route's base mileage data was inconsistent ..."
    c. The calculations that make up the 77% calculations are not clearly defined

2. The computation of the 80,000 unjustified daily mileage.
    a. The report relied upon answers given by supervisors at the 30 audited delivery units.
    b. These supervisors may not have been at the Unit during the scope of the audit, and may not have had definitive knowledge of vehicle activities.
    c. This is evident in that some of the units did not discuss the Amazon Parcel Return Service Pilot program that began in February 2016 in the Gulf Atlantic, South Florida, and Suncoast Districts with the OIG audit teams.
    d. Amazon Parcel Return Service Pilot is ongoing, and has resulted in the pickup of 1,901,247 pieces of mail, and requires additional mileage.

3. Rural Route Mileage, for evaluation purposes, is measured in a calibrated car.
    a. The carrier and the manager drive the line of travel for the route straight down the middle of the road.
    b. During the official measurement, deviations are not made for:
        i. pulling into and away from mailboxes
        ii. taking large packages to the customer's door
        iii. effecting delivery of accountable mail
    c. . Because of this, the daily mileage driven by rural carriers will always be greater than the official mileage stated on PS Form 4003.

4. The report was unclear on the types of vehicles checked against AVUS data. It:
    a. Failed to make clear the types of vehicles checked; LLVs, FFVs, Pro-master vans, Caravans, 2-tons, or Administrative Staff Cars.
    b. The first office listed on the report is Birmingham Main Post Office
        i. this is a Plant Facility with a Vehicle Maintenance Facility on site
        ii. it does not have any delivery routes
        iii. it is unclear what vehicles were checked at this facility or to whom they were assigned

5. There are several data streams and sources that could have been relied upon to verify if the extra mileage was an administrative issue or unjustified cost:

- 3 -

a. Delivery Unit Daily Packets: These packets contain the day's work load for the Delivery Unit. Specifically, PS Form 3996 Carrier – Auxiliary Control would have shown if the carrier was approved any deviations for road construction, provide auxiliary assistance to another route, or deviations to deliver our premium product (Priority Mail Express) to our customers by the cutoff time.
b. PS Form 3999 Inspection of Letter Carrier Route: These forms should have been used to verify the actual mileage used to the mileage required for delivery of the route.
c. Scanning Data off of the End of Day Report: This data should have been utilized to verify if deviations were required for large parcels or extra parcel volume.
d. Local Operation Center (LOC): Area and District LOCs should have been consulted on mileage variances. The LOCs utilize the Delivery Management System (DMS) and Regional Intelligent Mail Server (RIMS) programs to verify carrier times, locations, travel patterns to ensure optimal delivery efficiency.
e. Change Suspension Discontinuance Center (CSDC): Vehicle tracking report should have been utilized to verify if the vehicles were properly assigned to the Delivery Units.
f. PS Form 4565 Vehicle Repair Tag: Vehicle repair tags should have been verified to identify vehicles picked up, or swapped with other vehicles off of routes in the middle of the day.
g. Vehicle Maintenance Facilities (VMF): Logs utilized by VMF personnel should have been consulted to verify vehicles that were swapped out for repairs.

6. Extra mileage is the required for delivery employees to take parcels to the addressee's door that receive their normal letter mail at centralized box units (CBU's).

The Report's addendum, "Monetary Impact", states,

"In determining questioned costs we identified actual miles exceeded base miles. However, we did not question miles for splits, pivots, collections, parcel runs, new growth, Express Mail, customer demands, and Amazon Sunday range."

It was not defined in the report how these activities, which would increase the variance from base miles, was removed from questioning during the audit.

7. The methodology used to calculate the monetary impacts.
a. It is unlikely that the supported questioned costs for FY2016 would exactly equal the same type costs for FY 2015.
b. It is, also, unlikely that the unsupported questioned costs for FY2016 would exactly equal the same type costs for FY 2015.
c. The fuel costs, cited in the audit, of $.87 per mile are inflated. The SEAM, Make/Model Cost Report indicates the fuel costs per mile would be likely in the $0.12 - $0.24 range.
d. $50,277,866 listed as "Funds Put to Better Use", as this amount appears to be a doubling of the supported questioned costs and unsupported questioned costs amounts, which have been previously challenged.

The OIG recommends that management review route base mileage and make the necessary corrections in the AVUS, the DOIS, and the e-PS Form 4003 systems. They also recommended management provide training to existing, newly promoted, and temporary supervisors on maintaining route base mileage, monitoring daily mileage and variances, and documenting daily mileage deviations.

Southern Area disagrees with the recommendations because a cost benefit analysis was not included in the report. Specifically, the audit did not evaluate the cost to annotate daily every single variance (as noted throughout this report) for every route.

Recommendation #1

Review route base mileage and make the necessary correction in the Automated Vehicle Utilization System, Delivery Operations Information System, and e Postal Service Form 4003 systems.

Management Response/Action Plan

Southern Area disagrees with this recommendation based on the fact that we do not know if the cost outweighs the benefit.

Target Implementation Date

NA

Responsible Official:

NA

Recommendation #2

Provide training to existing, newly promoted, and temporary supervisors on maintaining route base mileage, monitoring daily mileage and variances, and documenting daily mileage deviations.

Management Response/Action Plan

Southern Area disagrees with this recommendation based on the fact that the cost of recording every deviation on every city and rural carrier on a daily basis is unknown.

Target Implementation Date

NA

Responsible Official:

NA

We recommend the Vice President, Delivery Operations, coordinate to explore:

Recommendation #3

Automated solutions for recording vehicle mileage, which could include modifications to separate carrier and vehicle activity on delivery routes or use of vehicle sensors.

Management Response/Action Plan

We disagree with Recommendation # 3. We do not currently have a working technology based solution for collecting and analyzing vehicle miles driven. It is unclear when that solution may be available and deployed as well as any cost that would be associated with future development and deployment of such a system. However, we will continue to explore such a passive technology based solution for identifying, tracking, recording and analyzing vehicle miles driven.

Target Implementation Date

NA

Responsible Official:

NA

Should you have any questions, please contact Ray Vincent, Area Accounting Manager at 214-819-8649.
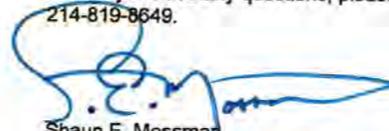
Shaun E. Mossman
Vice President, Southern Area
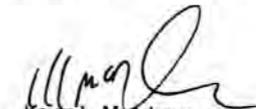
Kevin L. McAdams
Vice President, Delivery Operations

cc: Sally K. Haring, Manager, Corporate Audit Response Management
Tammy J. Rose, Controller, Southern Area
Lisse Fish, Manager, Delivery Programs Support, Southern Area
Ray Vincent, Area Accounting Manager

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1735 North Lynn Street
Arlington, VA 22209-2020
(703) 248-2100