OFFICE OF
INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

Management Operating Data System

Audit Report

December 13, 2011

OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

HIGHLIGHTS

December 13, 2011

Management Operating Data System

Report Number CRR-AR-12-002

IMPACT ON:

The allocation of mail processing costs to U.S. Postal Service products and the reliability of Postal Service cost avoidance estimates.

WHY THE OIG DID THE AUDIT:

Our objectives were to determine the impact Management Operating Data System (MODS) data would have on MODS-based productivities and their associated cost avoidance models and the attribution of mail processing costs to Postal Service products.

MODS is an operations system that measures productivity by matching employee workhours with mail volume using a series of operation numbers that identify what work was performed.

WHAT THE OIG FOUND:

Additional steps are needed to provide more accurate mail processing and cost avoidance estimates. Management should focus corrective actions on those MODS operation numbers and facilities that are creating the most significant number of MODS errors. In addition, management can improve data quality review procedures and use alternative methodologies to further minimize the effect of MODS errors. We analyzed the impact of alternative methodologies on two cost avoidance models, and estimated the revised workshare discounts could have resulted in $86.8 million in reduced workshare discounts and increased revenue. Using

accurate MODS data in mail processing variability studies would have a significant impact on costs attributed to postal products. As a result, some products that are currently identified as not covering their attributable costs (underwater products) could actually be covering costs, and vice versa.

WHAT THE OIG RECOMMENDED:

We recommended the Postal Service develop a monthly report identifying MODS operation numbers and facilities with frequent errors, expand current reports to include observations that exceed automated and manual capabilities, and implement controls within MODS that enforces the requirement for facility managers to correct MODS errors. We also recommended management correct MODS errors at facilities and evaluate whether alternate quality assurance procedures would provide more reliable results.

WHAT MANAGEMENT SAID:

Management concurred with our findings and recommendations but disagreed with our calculation of monetary benefits.

AUDITORS' COMMENTS:

The U. S. Postal Service Office of Inspector General considers management's comments to be responsive to the recommendations, and corrective actions should resolve the issues identified in this report.
Link to review the entire report

December 13, 2011

MEMORANDUM FOR: MEGAN J. BRENNAN
CHIEF OPERATING OFFICER AND EXECUTIVE VICE PRESIDENT

JOSEPH CORBETT
CHIEF FINANCIAL OFFICER AND EXECUTIVE VICE PRESIDENT

DAVID E. WILLIAMS
VICE PRESIDENT NETWORK OPERATIONS MANAGEMENT

E-Signed by Darrell E. Benjamin, Jr
VERIFY authenticity with e-Sign

FROM: Darrell E. Benjamin, Jr.
Deputy Assistant Inspector General
 for Revenue and Systems

SUBJECT: Audit Report – Management Operating Data System
(Report Number CRR-AR-12-002)

This report presents the results of our audit of Management Operating Data System (MODS) data used to calculate MODS-based productivities used in workshare cost avoidance models (Project Number 11RG010CRR000).

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact Paul Kuennen, director, Cost, Pricing, and Rates, or me at 703-248-2100.

Attachments

cc: Vice Presidents, Area Operations
Luke T. Grossmann
Joseph D. Moeller
Corporate Audit and Response Management

TABLE OF CONTENTS

Introduction

This report presents the results of our audit of Management Operating Data System (MODS) data used to calculate MODS-based productivities and attribute mail processing costs to U.S. Postal Service products (Project Number 11RG010CRR000). Our audit objectives were to determine the impact MODS data have on MODS-based productivities and their associated workshare cost avoidance models and the attribution of mail processing costs to Postal Service products. This self-initiated audit addresses financial risk. See Appendix A for additional information about this audit.

The MODS, initially deployed in 1971, collects and reports data on mail volume, workhours, and machine utilization at major mail processing facilities. MODS collects and reports workhour and corresponding mail volume information using a matrix of almost 800 3-digit operation numbers that designate activities (operations) performed in Postal Service facilities.[1] MODS workhours are collected from the Time and Attendance Collection System (TACS) that has employees clocked into the MODS operation in which they are working. Each employee is assigned a base MODS operation number. If they are not assigned a base operation number, for example temporary employees, TACS assigns a default operation number based on the work activity of the employee.

For mechanized and automated mail processing operations, MODS obtains mail volume from mail processing machine counts.[2] For other operations, such as manual operations, where no mail volume is recorded, mail volume is automatically credited[3] from associated mail processing machine counts.

The accuracy of MODS data is critical both operationally and for cost attribution. MODS data are reviewed by field and headquarters managers to plan mail processing activities, project workhours and mail volumes, and evaluate facilities' efficiency. The Postal Service Network Operations group developed MODS and is responsible for the overall operation of the system.

MODS data are also used extensively in Postal Service costing and pricing activities, such as for determining workshare discounts and cost coverage for specific products. More specifically, MODS data are used to develop mail processing cost pools,[4] which are used to attribute mail processing costs to Postal Service products. This cost attribution is part of the calculations performed to ensure prices charged for products cover their attributable costs,[5] and that market dominant products do not subsidize competitive products.

---

[1] Major categories of activities include mail processing, delivery, customer service, maintenance, and so forth.
[2] The Web End of Run (WebEOR) information system.
[3] A percentage of mail volume is distributed to opening unit operations such as mail preparation and to mail separation from automated and mechanized distribution operations.
[4] Mail processing activities are grouped into 61 cost pools; each cost pool is comprised of multiple MODS operation numbers.
[5] Direct and indirect Postal Service costs that can be clearly associated with a particular postal product.

MODS data have also been a key input in numerous mail processing volume variability studies. In economic terms, mail processing volume variability is the percentage change in mail processing cost that would result from a percentage change in mail volume, holding other factors equal. The volume variable portion of mail processing costs are attributed directly to postal products, while the non-volume variable costs are considered institutional costs and are not directly attributable.

MODS errors are a term given to MODS observations[6] that logically should not occur. Four common MODS errors include mail volume recorded in an operation but zero workhours; workhours recorded in an operation but zero mail volume; first handling piece (FHP)[7] mail volume greater than total pieces handled (TPH)[8] mail volume, and negative mail volume. In addition, there are also observations where the ratio of workhours to mail volume implies machine throughputs or manual productivities that are either too low or too high to reflect actual operating conditions.

The Postal Regulatory Commission (PRC) has not accepted mail processing volume variability studies conducted by the Postal Service and other interested parties, in part because of 'error-ridden' MODS data that prevented accurate modeling.[9] The PRC noted that unless the quality of the MODS data improves, or alternative data are developed, models that rely on MODS data would likely not be accepted by the PRC.

Conclusion

Although the Postal Service has taken steps to improve the overall accuracy of MODS data, additional steps are needed to provide more accurate mail processing and cost avoidance estimates. In fiscal year (FY) 2008, the Postal Service stopped weighing mail to obtain mail volume estimates. This step reduced certain types of errors dramatically. However, these changes have not materially reduced zero workhour and zero mail volume errors. In FY 2010, about 27 percent of MODS observations were zero workhour or zero mail volume errors.

To further address zero workhour and zero mail volume MODS errors, management should identify and focus their corrective actions on those mail processing facilities that are creating the most significant number of MODS errors. In addition, management can improve their data quality review procedures to further minimize the effect errors have on Postal Service cost estimates.

Improving the accuracy and reliability of MODS data can assist in preserving revenue opportunities and transparency in cost allocation among mail products and institutional costs. For example, reducing MODS errors could result in more accurate cost

---

[6] An observation is a record in the data that captures volume and workhours for an operation number at a facility for a certain time period (for example, tour, day, week, or month).
[7] Mail volume recorded in the operation where it receives its first distribution handling within a postal facility.
[8] The total volume FHP and subsequent handling pieces for manual operations. For machine operations, TPH is total pieces fed minus any reworks or rejects.
[9] PRC Docket Number R2006-1, *Postal Rate and Fee Changes, 2006, Opinion and Recommended Decision, Volume II, Appendix J, Mail Processing Variability*.

avoidance estimates. We estimated that, all other factors remaining constant, improved avoided cost estimates could have decreased Standard Mail® presort letters workshare discounts. Lower discounts have the potential to increase Standard Mail revenue by $86.8 million in FY 2010. Similarly, improved avoided cost estimates could have increased First-Class Mail® presort letters and cards workshare discounts, and decreased First-Class Mail revenue by approximately $300,000 in FY 2010.

In addition, our analysis showed new volume variability studies, based on improved MODS data, have the potential to reallocate[10] as much as $1.2 billion in mail processing costs attributed to postal products. If the new variabilities resulted in a lower mail processing variability estimate, mail processing costs would be reallocated from attributable to institutional costs. This reallocation could affect the cost coverage[11] of various postal products, resulting in more products covering their attributable costs and fewer products appearing to be 'underwater.'[12] However, if variabilities increased based on updated variability studies, more costs would be attributed to products that would decrease product cost coverage. Continued attention to reducing erroneous MODS data can improve data integrity, increase public confidence in Postal Service cost and price estimates, and preserve customer goodwill and the Postal Service brand. See Appendix B for a description of the impact on volume variable costs.

MODS Data Reliability

A high percentage of MODS data continues to have zero workhour and zero mail volume errors. Zero workhour errors occur when there is mail volume recorded in a MODS operation, but zero corresponding workhours are recorded.[13] We analyzed all FY 2010 MODS data and found the highest number of zero workhour errors occurred in a letter sorting operation.[14] There were 1.9 billion pieces of mail recorded in that MODS operation, with zero corresponding workhours.

The second type of MODS error, zero mail volume, occurs when there are workhours recorded in a MODS operation but zero mail volume is recorded.[15] In FY 2010, the highest number of zero mail volume errors occurred in outbound platform operations.[16] There were 2,675,472 workhours recorded in that MODS operation, with zero corresponding mail volume.

---

[10] A reallocation of costs can occur when Postal Service costs are reclassified as volume variable, product specific, or institutional costs. The total amount of actual reallocated costs would depend on how many MODS errors can be corrected.

[11] The degree to which revenue from products cover their attributable cost is commonly referred to as 'cost coverage.' PAEA Section 3622(a) (2) specifies that market dominant products should cover their attributable costs.

[12] Postal Service products where product revenue does not cover costs attributed to the products.

[13] Excluding 344 MODS operation numbers where there is not a mail volume reporting requirement.

[14] MODS Operation Number 919, Delivery Bar Code Sorter/Delivery Input Output Sub System, Bar Code Sort Mode, Delivery Point Sequencing, 2nd Pass.

[15] Excluding 28 MODS operation numbers where there is not a workhour reporting requirement.

[16] MODS Operation Number 212, Platform Operations - Outbound.

Overall, in FY 2009, 27.1 percent of monthly MODS observations were zero workhour or zero mail volume errors. That percentage decreased slightly to 27 percent in FY 2010. Table 1 depicts MODS errors in FYs 2009 and 2010.

Table 1. MODS Errors
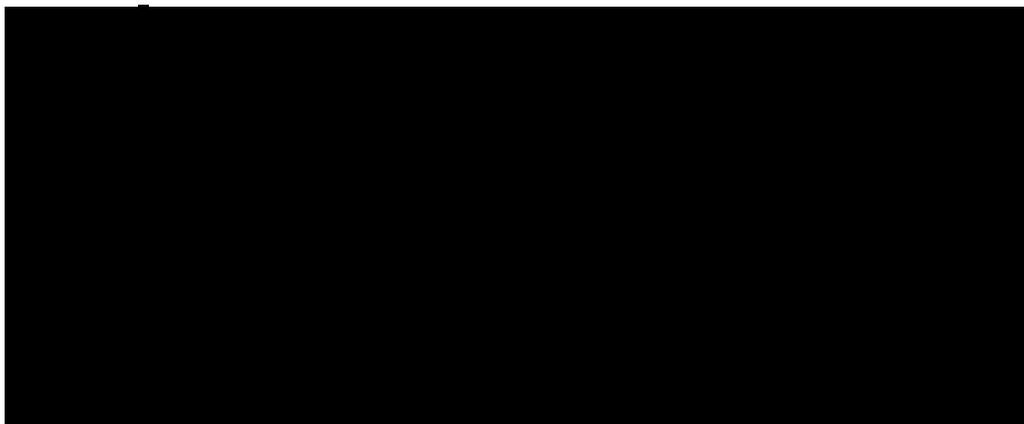
The percentage of monthly MODS observations with zero workhour or zero mail volume noted in Table 1 likely understates the true number of erroneous MODS observations. MODS data are collected by tour, and rolled up into daily, weekly, and monthly observations. MODS errors that would be apparent by tour tend to be masked when rolled up into a daily observation. The masking of MODS errors increases with the level of aggregation and can be considerable by the time MODS data are aggregated by month.

During our review we noted that:

- Twenty MODS operation numbers account for a high percentage of the MODS errors. In FY 2010, 71 percent of zero workhour errors were recorded in 10 of the 355 MODS operation numbers where an error was recorded, while 67 percent of zero mail volume errors were recorded in another 10 MODS operation numbers. See Appendix C for a listing of the 20 MODS operation numbers.

- MODS facilities often misreport MODS data throughout the entire year. In FY 2010, 70 percent of MODS facilities reported mail volume but zero workhours in at least one operation for the entire year. Additionally, 80 percent of MODS facilities reported workhours but zero mail volume in at least one operation for the entire year.

We reviewed MODS errors at 33 mail processing facilities; the facilities reported that MODS errors were caused by:

- Employees clocking into an incorrect operation;
- Employees clocking into their default operation but actually working on another operation.
- Incorrect auto-credit down flows, where mail volume is automatically credited to an operation; but employees are clocking into a different operation. When this occurs, mail volume will be recorded in a MODS operation, but no workhours are recorded.

There are several steps the Postal Service can take to reduce the number of zero workhour and zero mail volume MODS errors and increase the reliability of MODS data. To improve the reliability of Postal Service cost estimates, MODS errors need to be corrected timely at the source facility; by tour, day, week, and month.

In our 2009 MODS audit, we found that 18.5 percent of MODS observations over a 1-week period were errors (See Appendix A – Prior Audit Coverage). We recommended additional training and reporting tools to reduce the number of MODS errors. The Postal Service developed additional training materials and reports, but the number of MODS errors has not decreased.

MODS errors must be prevented or corrected at the facility level, by ensuring employees are clocked into the correct MODS operation, and ensuring auto-credit down flows to allied operations are correct. If processing plant personnel focused on correcting errors recorded in the 20 error-prone MODS operation numbers, and corrected systemic MODS errors that occur every month, the Postal Service would substantially decrease the number of MODS errors and improve the reliability of MODS-based productivities.

Reducing the number of MODS errors would also improve the reliability of MODS data and increase the likelihood that MODS data could be used in mail processing volume variability studies. Past studies have estimated mail processing variability ranged from 73 percent to over 100 percent. Absent volume variability studies based, in part, on reliable MODS data, the PRC has continued to use the assumption that almost 100 percent of mail processing costs are volume variable. As a result, the Postal Service classified 94 percent of the $12.1 billion in FY 2010 mail processing costs as volume variable ($11.4 billion) and directly attributed to postal products.

Changes in the variability estimate can have a significant impact on the attribution of Postal Service costs. The most recent Postal Service volume variability study estimated that 85 percent of mail processing costs were volume variable. Use of a lower variability estimate (for example, 85 percent rather than 94 percent) would reduce mail processing costs that are directly attributable to postal products, and increase institutional costs by a comparable amount. This potential cost transfer would occur, because a substantial component of the mail processing costs treated as volume variable would no longer be volume variable. A large transfer of costs between attributable and institutional costs could influence postal rates, costs attributed to postal products, and product cost coverage.

Further, reliance on volume variabilities substantially below 100 percent may result in lower workshare discounts. Workshare discounts are designed to reflect the cost avoided by worksharing activities. With less costs attributed to postal products, there would potentially be less avoided costs that could lower the workshare discounts for products. Raising the variability above the current 94 percent would have the reverse affect. It would increase the percentage of mail processing costs attributed to postal products and reduce institutional costs by a comparable amount.

A revised mail processing volume variability analysis based on the increased reliability of MODS data could affect the allocation of $1.2 billion in mail processing volume variable costs. See Appendix B for a description of the impact on volume variable costs.

MODS Data Quality Assurance Procedures

Although finance personnel use quality assurance procedures to review and remove zero workhour and zero mail volume MODS errors before calculating MODS-based productivities, these procedures are based on assumptions that might no longer be valid. Re-evaluation of these procedures could improve the reliability of MODS data and improve the accuracy of MODS-based productivities.

Productivity Groups

Finance personnel combine each facility's observations at the productivity group level to limit the influence of zero workhour and zero mail volume errors. For example, an observation at a MODS facility might be 1 month of workhour and mail volume observations recorded in operations 491 and 492, which are mapped to Productivity Group 1 (Advanced Facer Canceller System/Input Subsystem Outgoing Primary and Secondary Letters). In rolling these observations into the productivity group, some errors may cancel each other out, such as when workhours are recorded to operation 491, but the corresponding mail volume is recorded under operation 492.[17] In this example, a facility could report zero workhours but 10 million mailpieces in operation 491 for the month of July 2010. For that same month, the facility could report 10,000 workhours but zero mail volume in operation 492. Before finance personnel screen for MODS errors, they would combine the July 2010 results for operations 491 and 492. As a result, the combined observation from both operation numbers would have 10,000 workhours and 10 million mailpieces. These procedures reduce the total number of zero workhour or zero mail volume errors under the assumption that the 'missing' hours or 'missing' volume was charged to another MODS operation number that is also mapped to the same productivity group.

In the preceding example, the missing (zero) workhours from operation 491 were actually recorded in operation 492, while the mail volume was recorded in operation 491. Under this scenario, the workhours and mail volume would correctly aggregate as

---

[17] This happens due to 'misclocking' including cases where employees move among operations without reclocking for reasons of operational efficiency.

one observation to Productivity Group 1. Management also assumes the combined observations tend to be more reliable than the disaggregated observations.

However, data we examined did not support all of the assumptions finance personnel used in aggregating facility observations at the productivity group level. Specifically, our review of MODS errors and discussions with management at 33 mail processing facilities determined that:

- Only 14 percent of the zero workhour and zero mail volume errors aggregated to the same productivity group as assumed by finance personnel.
- About 52 percent of the zero workhour and zero mail volume MODS errors did not aggregate to the same productivity group. In other words, the facilities recorded the workhours or mail volume in operation numbers not mapped to the same productivity group or not mapped to any productivity group at all.
- For 31 percent of the zero workhour or zero mail volume errors, management could not identify the correct operation number where the workhours or mail volume should be recorded.
- Three percent of the zero workhour or zero mail volume errors aggregated to multiple productivity groups.

Cost Pools

MODS operation numbers are also used to develop mail processing cost pools. Mail processing employee workhours are recorded in MODS operation numbers that are mapped to one of 61 cost pools. As they do with productivity groups, management also aggregates MODS errors to cost pools. For the MODS errors at the 33 facilities:

- 57 percent of the zero workhour and zero mail volume errors aggregated to the correct cost pool, 9 percent did not.

- For 31 percent of the zero workhour or zero mail volume errors, management could not identify the correct operation number where the workhours or mail volume was recorded, and 4 percent were recorded in multiple operation numbers.

Because management could not identify the correct operation number for 31 percent of the zero workhour or zero volume errors, we were unable to quantify the specific aggregate effect on the mail processing cost pools. Improving the reliability of MODS data would improve the accuracy of mail processing cost pool estimates and impact the attribution of costs to postal products. As such, it should be a high management priority in assessing mail plant efficiency and allocating costs to Postal Service products.

Alternative Data Quality Assurance Procedures

Although we agree that MODS errors should be mitigated by operations managers to the extent practical, there may be a subset of errors that are not or cannot be corrected at the lowest level by operations managers. In these cases, finance personnel should

explore alternate ways to review and address the errors and outlying productivities to produce more accurate data and more transparent results. However, to maximize the effectiveness of these alternative procedures, the number of MODS errors must be reduced by operations managers first. Reducing the number of MODS errors would allow Finance to remove unreliable MODS data but still leave enough observations for reliable estimates.

In the past, the Postal Service and other interested parties attempted to overcome MODS data quality problems through various data screenings and 'scrubs,' which were intended to remove MODS errors and observations that were outside maximum and minimum productivity rates. This scrubbing dramatically reduced MODS sample sizes and affected the variability studies, either because the erroneous MODS data were removed or because there were drastic reductions in sample sizes.

Applying alternative quality assurance procedures to FY 2010 MODS data, we found that:

- Finance personnel could remove almost twice as many zero workhour and zero mail volume observations if they removed these errors before aggregating facility observations at the productivity group level. For example, using the above example with operations 491 and 492, the zero workhour and zero mail volume observations in operations 491 and 492 could be eliminated within each operation number before aggregating them in Productivity Group 1. If this alternative methodology was used in FY 2010, 52 percent of the errors that do not aggregate to the same productivity group, along with 31 percent of the errors that were recorded in undetermined operation numbers, would be removed from the MODS data. Table 2 shows FY 2010 zero workhour and zero mail volume observations removed under the current and alternative methodologies.

Table 2. Comparison of the Two Methodologies

Methodology	Errors Eliminated
Current Methodology[18]	14,555
Alternative Methodology[19]	25,168
Increase in Error Eliminations	10,613
Percentage Increase	73%

- Finance personnel could perform additional reviews of the MODS-based productivities by eliminating productivities that exceed maximum machine throughputs or manual productivities. Under the current methodology, after removal of zero workhour and zero volume errors, a fiscal year productivity is calculated, by facility, for each of the 85 productivity groups. Then, to account for

---

[18] Removal of zero workhour and zero mail volume errors after aggregating to the productivity group level.
[19] Removal of zero workhour and zero mail volume errors before aggregating to the productivity group level.

outliers,[20] the top and bottom 1 percent of productivities in each group are eliminated. However, after the 1 percent data elimination, a large number of productivities still exceed maximum machine throughputs and manual operation productivities.
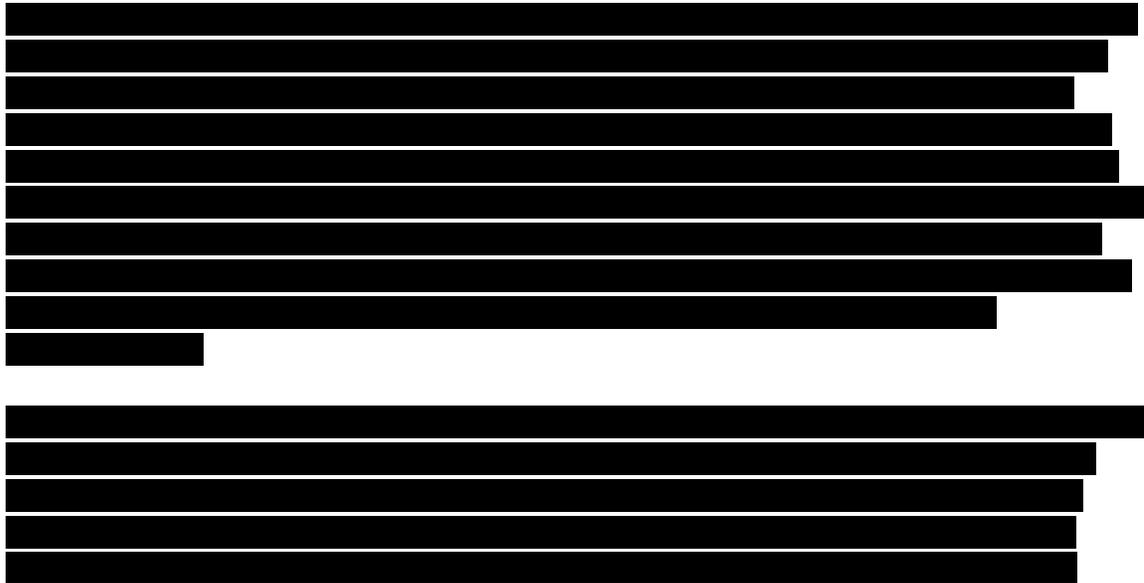
Using FY 2010 MODS data, we removed zero workhour and zero mail volume errors at the MODS operation number level, and eliminated productivities that exceeded maximum machine throughputs and manual productivities. We used these recalculated productivities in the letter cost avoidance models[21] and estimated the difference in avoided costs for FY 2010 was $328,011 more than the Postal Service avoided cost estimate for First-Class Mail presort letters. This mis-estimation of avoided costs has the potential to lower potential revenue by the same amount. For Standard Mail presort letters, we estimated the difference in avoided costs for FY 2010 was $86.8 million less than the Postal Service avoided cost estimate. This mis-estimation of avoided costs has the potential to increase revenue by $86.8 million.

Continued attention to reducing erroneous MODS data can improve data integrity, increase public confidence in Postal Service cost and price estimates, and preserve customer goodwill and the Postal Service brand. See Appendix B for additional information on monetary and other impacts.

---

[20] Outliers are atypical, infrequent observations that do not appear to follow the characteristic distribution of the rest of the data. These outliers may reflect actual properties of the underlying observation, or be due to measurement errors or other errors.
[21] First-Class Mail Presort Letters and Cards and Standard Mail Regular Presort Letters Cost Models.

Recommendations

We recommend the vice president, Network Operations Management, direct the manager, Network Development Support, to:

1. Develop a monthly report that identifies the top Management Operating Data System (MODS) operation numbers and facilities causing MODS errors.

2. Expand existing Management Operating Data System exception reports to include observations that exceed maximum machine throughput and manual productivities.

3. Issue monthly enhanced exception reports to management at the area, district, and facility level to highlight recurring Management Operating Data System errors at facilities.

4. Develop controls within the Management Operating Data System (MODS) that enforce the requirement for facility managers to correct MODS errors in a timely manner.

We recommend the chief operating officer and executive vice president, direct the vice presidents, Area Operations, to:

5. Direct district and facility managers to mitigate and correct Management Operating Data System errors.

We recommend the chief financial officer and executive vice president, direct the manager, Regulatory Reporting and Cost Analysis, to:

6. Monitor operation numbers where the majority of Management Operating Data System errors occur, and determine the potential impact on applicable cost data.

7. Evaluate existing quality assurance procedures to determine whether eliminating Management Operating Data System (MODS) errors at the facility level, and eliminating observations that exceed maximum machine throughputs or manual productivities, would improve the reliability of MODS based productivities.

Management's Comments

Management concurred with our findings and recommendations. Management stated they continue to take actions to reduce clock ring errors and improve volume reporting by reducing redundancies in MODS operations numbers used in MODS and by working to have a single set of operation numbers to reference across all facility types. Management stated that operation numbers in MODS could be modified to virtually mirror the costing groups used by Finance.

For recommendations 1, 2, and 3, management will create a monthly report that ranks facilities by the number of MODS operations errors, modify existing reports to identify situations where productivities for operations are too high or too low, and provide area, district, and facility managers with these monthly exception reports.

For recommendations 4 and 5, management will develop controls within MODS that enforce the requirement for facility managers to correct MODS errors in a timely manner and alert higher level managers of new and existing errors as well as escalation when errors are not corrected timely.

For recommendations 6 and 7, management will review their existing quality assurance procedures and adopt any revised procedures needed to improve the cost data. Management will also continue to monitor operation numbers where the majority of MODS errors occur and use quality assurance procedures to review and remove some MODS data before calculating productivities.

Management did not agree with our calculation of monetary impact and stated that it is incorrect to claim any monetary impact (positive or negative) by adjusting discounts or adjusting the price gaps between products in a given class of mail. Management stated that with the current constraints of the Consumer Price Index price cap for market dominant mail classes, decreasing discounts for selected mail products does not lead to more revenue. Further, if the cost studies were to suggest larger cost avoidances and hence larger discounts, management stated this does not necessarily lead to less revenue because prices could be increased for other components within a given class of mail. Finally, management stated that having new MODS data should not be construed to necessarily lead to estimated lower volume variabilities, that PRC approval would be needed before any reallocation of costs between mail products and institutional costs could occur, and that the outcome on costs or prices is difficult to foresee. See Appendix D for management's comments, in their entirety.

Evaluation of Management's Comments

The U.S. Postal Service Office of Inspector General (OIG) considers management's comments responsive to the recommendations, and corrective actions should resolve the issues identified in the report. Although management objected to our calculation of monetary benefits, the OIG's position is that persistent and uncorrected MODS errors can result in changes in unit costs that can have an impact on net revenue for specific mail classes of mail. We modified Appendix B to provide additional clarification that the monetary impact is dependent not only on corrective actions taken on MODS data quality but also management decisions regarding product pricing made within the limitations of the Consumer Price Index price cap and unused rate authority available at that time.

The OIG considers all of the recommendations significant, and therefore requires OIG concurrence before closure. Consequently, the OIG requests written confirmation when corrective actions are completed. These recommendations 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.

Appendix A: Additional Information

Background

The MODS system, initially deployed in 1971, is a web-based application that collects data from two Postal Service information systems: the TACS, and the WebEOR; for use in evaluating plant efficiency.

- TACS is an automated timekeeping system that collects employee clock ring data used to develop MODS workhours. Employee badge readers are located throughout Postal Service facilities, when employees work at an activity they clock in and enter the 3-digit MODS operation number for that activity. The MODS system interfaces with TACS to import the workhour data for MODS reporting. To ensure employees get paid, each employee is assigned a base operation number or a default operation number. If employees clock into an operation but do not enter an operation number, TACS records their workhours in their base or default operation number.

- WebEOR is a web-based application used to collect mail volume counts from automated and mechanized mail processing equipment. For non-automated mail processing activities, such as manual operations, mail volume estimates are calculated as a percentage of WebEOR mail volume from mechanized and automated operations that flow mail to manual operations.

MODS workhour and mail volume data are stored in the Enterprise Data Warehouse (EDW).

The Network Development Support Group within Network Operations manages the overall operation of MODS. Each area is responsible for providing detailed direction for accurately collecting MODS data and oversees the overall management of MODS within its area. Each MODS facility is responsible for managing the overall operation of MODS at that facility, to include reviewing daily MODS reports, providing training, ensuring accurate workhour and mail volume recording, and correcting errors.

The Cost Attribution group within Regulatory Reporting and Cost Analysis at Finance is an end user of MODS data primarily in costing activities. An external contractor uses MODS data to calculate MODS-based productivities, and up until 2006, used MODS data to develop mail processing volume variability estimates. In FY 2010, the Postal Service used MODS data to allocate $12.1 billion in labor costs into mail processing cost pools. This represents 16 percent of total Postal Service costs.

Although originally developed as an operations system, MODS has been used in Postal Service costing and pricing activities since 1997[22].In Docket Number R97-1, the Postal Service first proposed apportioning Cost Segment 3 mail processing costs by using the MODS operation that employees were clocked into. The PRC concluded that MODS

---

[22] PRC Docket Number R97-1, Postal Rate and Fee Changes, 1997.

pools were valid groupings of operations around common workload or 'cost drivers' and adopted the Postal Service proposal to partition mail processing costs into operation-specific MODS pools. However, the PRC decided that it could not use Postal Service calculations of volume variable mail processing costs, in part because of 'error-ridden' samples from MODS. Postal Service procedures to 'scrub' the MODS data were considered excessive, because they removed more than 22 percent of the observations and ineffective because they were not well-designed for their stated purpose to remove erroneous and atypical observations. Postal Service procedures to scrub the MODS data included using threshold levels, eliminating unusual productivities, and eliminating all the observations in the 1 percent tails of the distribution of productivities for the activity.

Objectives, Scope, and Methodology

Our objectives were to determine the impact MODS errors and other excluded MODS data have on MODS-based productivities and their associated workshare cost avoidance models as well as the attribution of mail processing costs to Postal Service products.

To assess the reliability of FY 2010 MODS data used to develop productivities, we extracted FY 2010 MODS data from the EDW and, using Postal Service procedures, reconciled our MODS data to the Postal Service MODS data.

To calculate the FYs 2009 and 2010 MODS errors, we extracted MODS data from the EDW and eliminated MODS operations where mail volume reporting was not required or optional. We then totaled four types of MODS errors: zero workhours but mail volume, zero mail volume but workhours, FHP greater than TPH, and negative mail volume.

To determine whether errors aggregated to the same productivity group or cost pool, we judgmentally selected 40 mail processing facilities for further analysis. We selected the top two facilities that reported the highest number of zero workhour and zero volume errors in the top 10 zero workhour and top 10 zero volume operation numbers. Of the 40 facilities, five were on both lists. Of the 35 facilities we analyzed, two facilities did not provide usable information. The remaining 33 facilities reported to us the correct MODS operation number where workhour or volume should have been recorded and the causes why the errors occurred.

To estimate the effect additional procedures would have on FY 2010 MODS-based productivities, we removed zero workhour and mail volume errors at the MODS operation number level. We removed the remaining high productivities that exceeded machine throughputs and manual productivities that exceed targets by 50 percent. Following the same methodology used in the top and bottom 1 percent data scrub, we removed an equal number of high and low observations from each data set and calculated average productivities.

We conducted this performance audit from February through December 2011 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 objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We discussed our observations and conclusions with management on October 26, 2011, and included their comments where appropriate.

We assessed the reliability of computer generated data by extracting FY 2010 MODS data from EDW and comparing our data to FY 2010 MODS data the Postal Service used to calculate productivities. We also verified the accuracy of certain MODS errors with respective facility managers. We determined that the data were sufficiently reliable for the purposes of this report.

Prior Audit Coverage

Report Title	Report Number	Final Report Date	Final Report
Management Operating Data System	MS-AR-07-003	8/21/2007	MODS data were valid and reliable when used for the purpose for which it is intended – to assess overall plant efficiency. However, controls were not effective in ensuring that volume and workhour data recorded against MODS operation numbers was valid. We recommended certain system-wide internal control improvements to include updating outdated policies, procedures, and on-line training materials. Management agreed with our findings and recommendations.

Follow-up Audit of the Management Operating Data System	CRR-AR-09-004	4/14/2009	Operational changes had reduced the number of errors in MODS data, but about 18.5 percent of MODS data for a 1-week period still contained errors. The root causes of MODS errors were primarily misclocking and auto-credit issues that could be mitigated with streamlined MODS operation numbers. We recommended training that emphasized the importance of clocking into the correct MODS operations, and training in the use of MODS exception reports to identify and correct recurring errors. Management agreed with our findings and recommendations.

Appendix B: Monetary Impact

Finding	Impact Category	Amount
██████████████████████ ██████	████████████	(328,011)
██████████████████████ ██████	████████████	86,818,955
███████████		86,490,944

Impact on Cost Avoidance Models

We estimate that the FY 2010 avoided cost estimates for Presort First-Class Mail letters and cards were underestimated by a unit cost average of .001 cents per mailpiece. As a result, holding all other inputs constant, had the workshare discount been .001 cents higher, the Postal Service would have collected $328,011 less revenue from Presort First-Class Mail letters and cards workshare discounts.

To develop our Presort First-Class Mail letters and cards estimates, we recalculated FY 2010 MODS-based productivities by removing zero workhour and zero mail volume errors at the MODS operation number level, and removing productivities that exceeded machine throughputs and manual productivities. We inserted the revised productivities into the FY 2010 First-Class Mail Presort Letters and Cards Cost Model, holding all other model inputs constant. Overall, our per mailpiece estimate for all presort levels was .001 cent over the Postal Service estimate. To determine the potential impact a .001 cent per mailpiece change in discount rates has on Postal Service revenue, we multiplied the revised per mailpiece estimate for each presort level by FY 2010 presort mail volume, and estimated the overall impact was $328,011.

We estimate that the FY 2010 avoided cost estimates for Presort Standard Mail Regular letters was overestimated by a unit cost average of .023 cents per mailpiece. As a result, holding all other inputs constant, had the workshare discount been .023 cents lower, the Postal Service would have collected $86,818,955 in additional revenue from Presort Standard Mail regular letters. To develop our Presort Standard Mail regular letters estimate, we recalculated FY 2010 MODS-based productivities by removing zero workhour and zero mail volume errors at the MODS operation number level, and removing productivities that exceeded machine throughputs and manual productivities. We inserted the revised productivities into the FY 2010 Standard Mail Regular Presort Letters Cost Model, holding all other model inputs constant. To determine the potential impact a .023 cent per mailpiece change in discount rates has on Postal Service revenue, we multiplied the revised per mailpiece estimate for each presort level by FY 2010 Standard Mail presort letters mail volume, and estimated the overall impact was $86,818,955. The actual impact on future revenue streams would depend, in part, on how many errors are replaced with corrected data. Revenue impacts also depend on management decisions regarding product pricing made within the limitations of the Consumer Price Index price cap and unused rate authority available at that time.

Other Impacts

Finding	Impact Category	Amount
███████████████	████████████	$1,178,077,000

Impact on Volume Variable Costs

Improving the accuracy of MODS data could have a significant effect on the allocation of mail processing costs. Had the Postal Service improved the quality of MODS data by correcting MODS errors, it would have increased the likelihood that past mail processing volume variability studies would have been accepted by the PRC. If the Postal Service's volume variability studies had been accepted, we estimate that as much as $1,178,077,000 in FY 2010 costs charged to various mail products could be charged to institutional costs, thereby affecting the cost coverage for various mail products.

To estimate the potential impact on mail processing volume variability, we recalculated FY 2010 mail processing volume variability using Postal Service volume variability estimates developed in PRC Docket Number R2006-1.[23] That docket was the last time the Postal Service proposed volume variability estimates of 85 percent for processing and distribution centers (PDCs) and other large mail processing facilities, 85 percent for network distribution centers (NDCs), and 83 percent for non-MODS post offices, stations, and branches.

In FY 2010, the Postal Service used mail processing volume variability estimates of 95 percent for PDCs and other large mail processing facilities, 94 percent for NDCs, and 91 percent for non-MODS post offices, stations, and branches. The FY 2010 mail processing volume variable costs for PDCs, NDCs, and non-MODS offices totaled $11,423,080,000 using the 95-, 94-, and 91-percent estimates. Using the lower estimates developed in the 2006 study (85, 85, and 83 percent) the FY 2010 mail processing volume variable costs totaled $10,245,003,000, for a difference of $1,178,077,000.

Absent a reliable volume variability study, the PRC has continued to use the assumption that most mail processing costs are volume variable. As a result, about 94 percent of the $12.1 billion in FY 2010 mail processing costs were classified as volume variable ($11.4 billion) and directly attributed to postal products. Adoption of Postal Service volume variability estimates, which are significantly lower than 94 percent, would reduce mail processing costs that are directly attributable to postal products, and increase institutional costs by a comparable amount. This transfer occurs because a substantial component of the mail processing costs treated as volume variable would no longer be volume variable. This large transfer of costs between attributable and institutional costs would influence postal rates, costs attributed to postal products, and product cost coverage.

---

[23] PRC Docket Number R2006-1, *Postal Rate and Fee Changes, 2006.*

Appendix C: MODS Operation Numbers

Ten MODS operation numbers account for 71 percent of the zero workhour errors, with just over 11.1 billion pieces of mail. Focusing corrective action on these operation numbers would significantly reduce zero workhour errors. Table 3 shows the 10 MODS operation numbers with the largest workhour errors, by mail volume.

Table 3. FY 2010 Top 10 Zero Workhour Errors

Operation Number	Operation Description	Mail Volume	Zero Workhours

Another 10 MODS operation numbers account for 67 percent of the zero mail volume errors, and total just over 8 million workhours. Focusing corrective action on these operation numbers would significantly reduce zero mail volume errors. Table 4 shows the 10 MODS operation numbers with the highest number of zero mail volume errors, by workhours.

Table 4. FY 2010 Top 10 Zero Mail Volume Errors

Operation Number	Operation Description	Zero Mail Volume	Workhours

Appendix D: Management's Comments

UNITED STATES
POSTAL SERVICE

December 6, 2011

SHIRIAN B. HOLLAND
ACTING DIRECTOR, Audit Operations

SUBJECT: Draft Audit Report – Management Operating Data System
(Report Number CRR-AR-12-DRAFT)

We reviewed the audit performed by the Office of Inspector General on the
Management Operating Data System (MODS) and we appreciate the opportunity to
provide feedback to your findings.   Management agrees with the recommendations
as outlined in the audit, as well as many of the findings. However, the calculation of
monetary impact is incorrect.

Management continues to take actions designed to simplify and improve the
reliability of the WebMODS data. To that end, a recent endeavor has been
undertaken to reduce and eliminate the redundant operations currently found in
the WebMODS system. This will help to eliminate many of the clock ring errors
currently experienced.

In addition, management is working to remove the redundancy found across
functions. Where the same type of task or distribution is being performed in
different types of offices, we are working to use a single operation to identify the
work while still providing credit to the proper labor distribution code. This will help
to improve the clock rings and volume reporting by having a single set of
numbers to reference across all facility types.

Looking ahead, management believes that operations in WebMODS can be
further collapsed to virtually mirror the costing groups used by Finance. This will
further eliminate opportunities for errors to be made while still providing the same
level of data. Any analysis requiring finer separation of processes could be
handled by the feeder systems into WebMODS.

To the extent the changes described above improve the quality of the data, it will
be reflected in cost allocations and cost avoidance studies for which MODS data
are inputs.

- 2 -

There is an error in the assumption about monetary impact. The calculation of the monetary impact is based on analysis of two Market Dominant classes of mail, both of which are subject to the application of the Consumer Price Index price cap. Given the constraint of the price cap, decreasing discounts does not lead to *more* revenue. If the cost studies were to suggest larger cost avoidances, and the price gaps (or discounts) were widened within a class, that does not result in *less* revenue since other prices could be pushed up in order to meet the cap. In any event, it is incorrect to claim any monetary impact (positive or negative, though the general implication in this report is that there could be a net positive impact, albeit only 0.13 percent of total revenue) by adjusting the discounts, or adjusting the price gaps between cells in a given class of mail.

The report also recognizes that mail processing volume variability has been an issue with the Postal Regulatory Commission. It notes that if the Postal Service's proposal in 2006 was applied to fiscal year 2010 costs, there would be a shift of $1.2 billion from attributable costs to institutional costs. The Postal Service questions the usefulness of this quantification since it relies on volume variability estimates derived using data that, in this report, the Office of Inspector General is describing as unreliable. In any event, having new MODS data should not be construed to necessarily lead to estimated lower volume variabilities, and even if it did, approval of the Postal Regulatory Commission would be required before any reallocation of costs would occur. As noted in the report, this could simply result in a shifting of costs between institutional and attributable and the outcome on costs or prices is difficult to foresee

Recommendation 1:
Develop a monthly report that identifies the top Management Operating Data System operation numbers and facilities causing MODS errors.

Management Response/Action Plan:
Management agrees with this recommendation. In MIRS, there exists a report that ranks the facilities by decreasing number of errors. This report can be run for various timeframes including monthly. Management will create a similar report to show the operations with errors.

Target Implementation Date:
March 2012

Responsible Official:
Manager, Network Development and Support

Recommendation 2:
Expand existing Management Operating Data System exception reports to include observations that exceed maximum machine throughput and manual productivities.

- 3 -

Management Response/Action Plan:
Management conditionally agrees with this recommendation. Existing reports will be modified to include identification of situations where productivities for operations are either too high or too low. WebMODS is not designed to track and rate machine throughputs and adding this to existing reports would potentially produce false alarms, causing unnecessary use of resources and a lack of confidence in the results being reported. Management will explore the potential use of machine throughput in WebEOR to prevent the transmission of possible bad data from the machines.

Target Implementation Date:
March 2012

Responsible Official:
Manager, Network Development and Support

Recommendation 3:
Issue monthly enhanced exception reports to management at the area, district, and facility level to highlight recurring Management Operating Data System errors at facilities.

Management Response/Action Plan:
Management agrees with this recommendation. Expanded reports that track a facility's errors will be compiled monthly and issued to the field. Messaging will be done through the Processing Operations group to retain focus on identifying and correcting the errors at the lowest level.

Target Implementation Date:
April 2012

Responsible Official:
Manager, Network Development and Support
Manager, Processing Operations

Recommendation 4:
Develop controls within the Management Operating Data System (MODS) that enforce the requirement for facility managers to correct MODS errors in a timely manner.

Management Response/Action Plan:
Management agrees with this recommendation. Management will review the possibility of adding notification of facilities to the application in order to alert higher level management to new and existing errors as well as escalation when errors are not corrected timely.

- 4 -

Target Implementation Date:
September 2012

Responsible Official:
Manager, Network Development and Support

Recommendation 5:
Direct district and facility managers to mitigate and correct Management
Operating Data System errors.

Management Response/Action Plan:
Management agrees with this recommendation. The Vice President, Network
Operations will ensure the creation of proper messaging to be provided to the
Area Vice Presidents from the Chief Operating Officer reaffirming the requirement
that errors in MODS data must be avoided and corrected at the lowest possible
level and within a reasonable timeframe.

Target Implementation Date:
December 2011

Responsible Official:
Vice President, Network Operations

Recommendation 6:
Monitor operation numbers where the majority of Management Operating Data
System errors occur, and determine the potential impact on applicable cost data.

Management Response/Action Plan:
Management agrees with this recommendation. As mentioned in the Report,
Finance personnel use quality assurance procedures to review and remove some
MODS data before calculating productivities. We will continue to employ such
procedures, and adopt any revised procedures that are likely to improve the cost
data.

Target Implementation Date:
July 2012

Responsible Official:
Manager, Regulatory Reporting and Cost Analysis

Recommendation 7:
Evaluate existing quality assurance procedures to determine whether eliminating
Management Operating Data System (MODS) errors at the facility level, and
eliminating observations that exceed maximum machine throughputs or manual
productivities, would improve the reliability of MODS based productivities.

- 5 -

Management Response/Action Plan:
Management agrees with this recommendation in that we, of course, want to improve the reliability of MODS-based productivities. We will review our existing quality assurance procedures to determine the best course for dealing with data handling procedures.

Target Implementation Date:
July 2012

Responsible Official:
Manager, Regulatory Reporting and Cost Analysis

This report and management's response do not contain information that may be exempt from disclosure under the FOIA.

David E. Williams
Vice President
Network Operations

Joseph Corbett
Chief Financial Officer
and Executive Vice President

- 6 -

cc: Ms. Brennan
    Mr. Corbett
    Vice Presidents, Area Operations
    Mr. Grossmann
    Mr. Moeller
    Mr. Benjamin
    Corporate Audit and Response Management