



OFFICE OF
**INSPECTOR
GENERAL**
UNITED STATES POSTAL SERVICE

Revenue, Pieces, and Weight Inputs into the Cost and Revenue Analysis Report

Audit Report

January 27, 2012

Report Number CRR-AR-12-003



IMPACT ON:

The U.S. Postal Service currently spends approximately \$69 million annually in manual data collection efforts to support Finance personnel who prepare the Cost and Revenue Analysis (CRA) Report and to meet other analytical needs. This includes about \$38 million per year to collect data for the Revenue, Pieces, and Weight (RPW) portion of the statistical models. This report explores alternate ways of estimating the RPW component required for the CRA report using automated data, thus reducing manual data collection efforts.

WHY THE OIG DID THE AUDIT:

Our objective was to determine whether RPW estimates used in the CRA report could be prepared more efficiently and effectively using automated data to reduce manual data collection.

WHAT THE OIG FOUND:

The Postal Service could significantly reduce manual data collection for RPW estimation by modifying existing automated processes to collect mailpiece images for analysis and by moving sampling from delivery units to supporting processing plants.

We estimate the Postal Service could save about \$13 million in annual data collection costs. The Postal Service could make the hardware changes needed with existing technology, which

would benefit both operational needs and statistical sampling efforts.

WHAT THE OIG RECOMMENDED:

We recommended that Finance explore using automated data and image recognition capabilities to replace the manual RPW data collection for mail processed on automation equipment, explore concentrating data collection of manually processed mail from delivery units to processing and distribution facilities, and coordinate with the Postal Regulatory Commission regarding these changes.

WHAT MANAGEMENT SAID:

Management agreed with the recommendations but disagreed with the assessment of the state of automated data and the cost savings estimate, indicating that the report was misleading.

AUDITORS' COMMENTS:

We consider management's comments responsive to the recommendations. We reject the assertion that the report is misleading and should be significantly altered. Our savings estimate is based on greater use of automation, and the potential use of support employees at a lower wage rate. It is a conservative estimate of possible savings in this area.

[Link to review the entire report](#)



January 27, 2012

MEMORANDUM FOR: JOSEPH CORBETT
CHIEF FINANCIAL OFFICER AND
EXECUTIVE VICE PRESIDENT

A rectangular box containing a handwritten signature in cursive that reads "Darrell E. Benjamin, Jr." with a small yellow question mark icon in the bottom right corner.

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

SUBJECT: Audit Report – Revenue, Pieces, and Weight Inputs
Into the Cost and Revenue Analysis Report
(Report Number CRR-AR-12-003)

This report presents the results of our audit of the Revenue, Pieces, and Weight Inputs into the Cost and Revenue Analysis Report (Project Number 11RG001CRR002).

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

Attachments

cc: Joseph Moeller
Corporate Audit and Response Management

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Introduction

This report presents the results of our audit of the Revenue, Pieces, and Weight (RPW) Inputs used in the Cost and Revenue Analysis (CRA) Report (Project Number 11RG001CRR002). Our objective was to determine whether RPW estimates used in the CRA report could be prepared more efficiently and effectively using automated data to reduce manual statistical data collection. This self-initiated review addresses financial risk. This report is the second in a series of three reports¹ and addresses the RPW component of the CRA. See [Appendix A](#) for additional information about this audit.

Each class or type of mail service is required to bear the direct and indirect costs attributable to that class of service and the CRA report aids the Postal Service in meeting this requirement. Because the accounting systems do not accumulate financial data by mail categories, management uses statistical models and studies to attribute costs to the mail classes in the CRA. The statistical systems mostly use data that data collectors gather manually to produce the CRA. The Postal Service uses principles and methodologies the Postal Regulatory Commission (PRC) accepts in preparing the CRA report.

The RPW system and the Origin/Destination Information System (ODIS) provide basic data on the volume of mail and its associated revenue. The RPW portion of the data is an essential input to the annual CRA report and management uses it to determine average unit revenue and average unit attributable costs for products. An RPW report is published quarterly and is widely used throughout the postal community to track the revenue, volume, and weight of various postal products. The RPW also provides information used in budget, workload preparation, and management studies — information that also supports management's decisions concerning mail flow and transportation requirements.

ODIS-RPW tests are conducted at delivery units, such as associate offices, stations, and branches; and at certain destination mail processing plants in the early morning hours before mail volume is distributed to the carriers at the Post Office.TM These destination postal units serve as mail exit points² for RPW sampling. Management conducts about 130,000 tests, costing approximately \$38 million, each year at nearly 20,000 mail exit points. The tests are conducted on all mail, but management uses only single-piece mail data for RPW estimation, since the *PostalOne!* system collects equivalent data for bulk mail from mailing statements. RPW also uses a census of data from the Point of Service system in the estimation.

¹ The first report, issued September 19, 2011, addressed the Transportation Cost System component of the CRA. The final report we plan to issue will address the In-Office Cost System (IOCS) component of the CRA.

² The physical location in the mail processing stream between and including a destination mail processing plant and the final delivery unit, where mailpieces are isolated for RPW testing. Mail exit points are designed so that every mailpiece is associated precisely with one mail exit point and every mailpiece in each mail exit point is amenable to being readily isolated for testing.

This is the second of three reviews we are performing to determine the extent to which mail images and other available system data could be used to reduce manually collected CRA data. Our first review focused on transportation costs, this review focuses on RPW, and our third review will focus on the In-Office Cost System.

Conclusion

The Postal Service could significantly reduce manual data collection for RPW estimation by modifying existing automated processes to randomly collect mailpiece images for analysis and by moving sampling from delivery units to their supporting processing plants. For single-piece mail processed through automation, data elements required for the estimation could be randomly collected by extracting the data from images of mailpieces using available technologies. This will reduce manual data collection requirements to approximately 10 percent of the mail that is not processed on automation equipment. Additionally, the required data could be collected at approximately 300 processing facilities, instead of the approximately 20,000 destination units. If the planned significant reductions in the mail processing infrastructure occur, the number of facilities for data collection would be reduced even further. Using technology to collect data for automation mail, conducting the sampling at processing and distribution centers (P&DCs), and restructuring the data collection workforce using postal support³ employees could result in an estimated \$127.88 million savings over a 10-year period, or about \$13 million in annual savings. See [Appendix B](#) for details.

Finance's Regulatory Reporting and Cost Analysis group continually works with Operations in exploring opportunities to use available automated data for cost attribution purposes. For example, bulk mail data obtained electronically currently provides approximately [REDACTED] of the volume data and [REDACTED] of revenue data needed for RPW data requirements. In addition, recent efforts have enabled the Postal Service to use data from the Point of Service system for estimating the volume and special services component of the RPW system.

In responding to our report, *Transportation Cost System Inputs into the Cost and Revenue Analysis Report*, issued September 19, 2011, Regulatory Reporting and Cost Analysis disagreed with the OIG's assessment of readiness of certain Operations systems to provide acceptable and applicable census data⁴ needed for costing purposes but agreed to work with applicable vice presidents to develop interfaces to provide automated data to the Transportation Cost System (TRACS) for product costing purposes. These same near-term system readiness issues apply to the ODIS-RPW testing environment. The Postal Service spends approximately \$102 million annually to collect and analyze cost data, including administering the statistical programs and preparing the CRA. Therefore, it is critical that Finance's data collection needs are incorporated into the requirements of evolving Operations systems. This long-term

³ Postal support employees are non-career bargaining unit employees, whose numbers cannot exceed 20 percent of the career mail processing clerk craft employees within a district.

⁴ Census data involves using mail characteristics, such as mail type, weight, shape, and destination ZIP Code™, captured from all mailpieces by automated systems, rather than relying on statistical sampling of mail.

assessment of data needs is especially important as the Postal Service intends to modify its mail processing infrastructure.

Increased Use of Automation Mail Data

For mail undergoing automated processing, most of the data needed for a statistically valid sample could be captured through the enhanced use of automation and optical character recognition (OCR) capabilities. Current mail processing equipment is able to collect mailpiece images as the mail passes through the equipment. A new initiative, the Image Capture Environment, will consolidate⁵ mailpiece images and provide information for greater operational efficiencies and value added customer services. Together with the OCR software and longer term hardware enhancements that are being tested by management, the necessary data, except weight, may be captured from mailpiece images. Rather than data collection technicians recording the data, the necessary data could be extracted by system processes and transferred into the Computerized On-Site Data Entry System or into a virtual ODIS-RPW test system. Table 1 shows information that can be collected from images through OCR conversion from various types of mail processing equipment.⁶

**Table 1. Current and Future Software Enabled Technical Capability
Automation Image Information Capture Feasibility**

ODIS-RPW Mailpiece Information Collected	Mail Type		
	Letters	Flats	Parcels
	Automation Mail Processing Equipment		
	AFCS-200, DBCS, and DIOSS	AFSM 100 and FSS	APPS and APBS
Length and width	Yes	Yes	Yes
Thickness	Yes	Yes	Yes
Weight	No	No	Yes
Class of mail	Yes	Yes	Yes
Origin ZIP Code	Yes	Yes	Yes
Destination ZIP Code	Yes	Yes	Yes
Type of indicia	Yes	Yes	Yes
Value of indicia/amount of postage paid	Yes	Yes	Yes
Postmark date	Yes	Yes	Yes
Meter serial number	Yes	Yes	Yes
Meter manufacturer	Yes	Yes	Yes
Special markings/ endorsements	Yes	Yes	Yes

⁵ This consolidation would bring all images extracted at a processing and distribution center (P&DC) to a centralized server at that location, where data extraction can occur.

⁶ Advanced Facer Cancellor System-200 (AFCS-200), Delivery Barcode Sorter (DBCS), Delivery Input Output Subsystems (DIOSS), Automated Flats Sorting Machine 100 (AFSM-100), Flats Sequencing System (FSS), Automated Package Processing System (APPS), and Automated Parcel and Bundle Sorter (APBS).

Data that cannot be obtained from images on the current mail processing systems are the individual mailpiece weight. The Mailing Evaluation Readability Lookup Instrument (MERLIN) machines, located at P&DCs, can automatically capture the weight and thickness of mailpieces, and is currently used to verify bulk mail data. Although single-piece mail currently does not go through MERLIN machines, a sampling process can be established for randomly selecting trays of mail to run through MERLIN to capture weight between the end of the automated run and the dispatch for transport to the delivery unit. If management discontinued MERLIN for acceptance verification, these units or selected components could be made available for RPW sampling. This procedure could be part of the manual component of the proposed system, or be performed as a special, periodic study to accurately project the weight of sampled mailpieces.

Changes in Sampling Sites

The Postal Service could collect required data for RPW estimation more efficiently by moving the primary sampling sites from nearly 20,000 destination units that serve as mail exit points to about 300 P&DCs. With evolving mail scanning capabilities and appropriate system interfaces, data for automation mail could be captured using available technologies, while data for manually processed mail at the P&DCs would require a reduced amount of manual sample data collection by data collectors. Additionally, the Postal Service could retain current sampling design principles to use the same overall sample size to collect the data at P&DCs.

The proposed data collection plan features two components: automation and manual. The automation component uses software to extract ODIS-RPW data from images of mailpieces processed through automation equipment and is obtained in the last machine sort. The manual component involves non-machinable mailpieces that still require physical observation and recording of data by the data collection technician. The non-machine processed mail is physically sampled at the servicing mail processing facility during Tour 1⁷ before it is dispatched to the delivery unit. The same mail that the ODIS-RPW data collector currently samples would be sampled a few hours earlier at the servicing P&DC.

The automation component uses existing or ongoing hardware deployments and future software enhancements to produce images of mailpieces and extract data currently gathered by the data collection technicians conducting ODIS-RPW tests. This essentially eliminates much of the current data collection time and cost of manually sampling data. It also eliminates some potential non-sampling errors introduced by manual data collectors and permits larger samples to be taken. Although a full census of the mail may be possible in the future, the initial automated process could simply replace current manual sampling of delivery point sequenced (DPS) mail currently performed at the delivery units. Below are examples of how letters, flats, parcels, and manually processed mail sampling would occur using these proposed procedures.

⁷ Plant operations during a 24-hour period involve three 8-hour segments known as tours. Tour 1 is from 11:00 a.m. to 7:00 a.m., Tour 2 is from 7:00 a.m. to 3:00 p.m., and Tour 3 is from 3:00 p.m. to 11:00 a.m.

Letters

Currently, [REDACTED] of Letter Mail is processed through automation. For this mail, images can be extracted on processing machines, such as the AFCS 200, DIOSS, and Delivery Bar Code Sorter. These machines spray a fluorescent identification barcode on the mailpieces, recording the processing event including the date and time. This code can be used to identify the mailpiece image for the image data extraction process.

Mail for a 5-digit ZIP Code area is run through a two-pass DPS sort plan on a DBCS a few hours before the mail is transported to delivery units. The output, organized in trays placed in rolling stock or other containers by 5-digit ZIP Code and carrier, is then staged for transportation to the delivery unit. For those delivery units that do not have DPS processing, the automated processing of 5-digit mail volumes typically occurs after midnight and is transported through the multiple dispatches to those delivery units served by the plant. Under the current ODIS-RPW system, this DPS mail will be sampled once it arrives at the delivery unit. With the proposed plan, this mail volume would be analyzed virtually using mailpiece images and ODIS-RPW testing would be completed before dispatch to the delivery units.

Flats

Automated processing accounts for about [REDACTED] of flats mail. The flats mail processing stream is similar to the letter flow, with the exception that different machines are used in the processing. The Automated Flat Sorting Machine-100 (AFSM 100) has the ability to lift images of flats using OCR technologies. Although not all processing facilities have AFSM 100 and Flat Sequencing System equipment installed, future facility consolidations would likely increase the percentage of processing facilities with this capability.

Parcels

Machinable parcels that flow through either an Automated Package Processing System (APPS) or an Automated Parcel and Bundle Sorter (APBS) comprise [REDACTED] of parcel volume. The Postal Service is currently modifying APBS machines to be capable of obtaining mailpiece images as well as package weight and dimensions. As these upgrades occur, the electronic data and images from the APBS can be used, along with images generated by the APPS, to provide most of the required data regarding the machinable mail going through these machines.

Manual Mail

Manually sorted mail represents approximately [REDACTED] of total mail volume and can be sampled more economically at the serving P&DC facility during Tour 1 before it is dispatched to the delivery unit, which currently serves as the mail exit point. This involves manually sampling the same mail at the P&DC a few hours earlier than the data collector would otherwise have sampled it at a delivery unit. The Postal Service already uses some destination P&DCs as mail exit points for the RPW sampling. Although the sampling location is changed from the delivery unit to the P&DC, the accuracy of the sampling procedures and statistical results can be preserved or improved, as the same mail is sampled the same day. The number of P&DCs is approximately 300 facilities, which helps concentrate the number of sampling locations to a much smaller number than the 20,000 destination units. If the planned significant reductions in the mail processing infrastructure occur, the number of facilities for data collection would be reduced even further. Additionally, postal support employees can be used to perform the manual sampling instead of fulltime employees, as the duration of the test will be shorter and tests will be conducted during one work tour.

A prerequisite for the manual sampling to work successfully is that all single piece mail should go through a P&DC before being sent to a delivery unit for delivery and possible sampling. Mail not going through a P&DC before being sent to a delivery unit may include mail accepted at a delivery unit for local delivery and drop-shipped⁸ mail. However, official Postal Service policy is that mail accepted at a delivery unit for local delivery should be sent to the supporting P&DC for processing.

Virtually all manually processed single-piece mail is sorted to five digits on Tour 1. The P&DC operating plan provides for sorting to be completed by the time of the final pull-down for transportation to the delivery units. Therefore, manually sorted mail can be sampled using the same stratified sampling plan that is used now, including shape and the 5-digit ZIP Code.

Recommendations

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

1. Explore using census data and image recognition capabilities to replace the manual Revenue, Pieces, and Weight data collection for the mail processed through automation.
2. Explore concentrating sampling and data collection of manually processed mail from delivery units to the serving processing and distribution facilities for Revenue, Pieces, and Weight estimation purposes.

⁸ Presorted mail dropped off by a bulk mailer at a destination entry unit for delivery by the Postal Service. Characteristics of this mail can be captured from the electronic documentation.

3. Explore using postal support employees for the manual data collection required to sample nonmachinable mail.
4. Coordinate with the Postal Regulatory Commission to use census data together with sample verification of mailpieces through image recognition for Revenue, Pieces, and Weight input.

Management's Comments

Management agreed with the recommendations. However, management disagreed with the U.S. Postal Service Office of Inspector General's (OIG) assessment of the state of automated data and the estimate of cost savings, and suggested that the report is misleading and should be significantly altered.

Management stated that certain aspects of the report are theoretical in nature and not possible, and the costs reported for implementing the upgrades are not realistic. In repeating their position to the OIG's report on the TRACS inputs to the Cost and Revenue Analysis Report, management stated that acceptable and applicable automated data is not currently available to meet all analytical needs and will not be available nationally in the timeframe OIG stated. Management also stated that the Postal Service could not support its business needs by moving ODIS-RPW data collection exclusively to the P&DCs.

Management acknowledges that software can be developed to aggregate data from images captured on processing machines but stated that those capabilities and the associated costs are unknown. Further, the current mail imaging and recognition capabilities were designed to process and sort mail and not to extract data. As examples of obstacles to obtaining reliable data from images, management stated that multiple indicia with more than one revenue amount often appear on mailpieces, as do multiple barcodes, and that cancellation markings and multiple barcodes obscure relevant data, making it difficult for the software to decipher the data.

Management also stated that the OIG significantly underestimated the importance of weight data for business needs and PRC reporting. According to management, as weight for each weight and zone cell in pricing tables and granularity for all postal rate categories are required, samples selected from MERLIN will not fulfill the reporting requirements. Management also stated that parcel processing machines may not provide weight data at the required tolerances and this imprecision could result in uncertain volume and revenue reporting.

Management stated that the cost savings the OIG projected for using image extraction is overstated. Management disagreed with OIG's estimations of when savings could begin to materialize, the investment required for determining mailpiece weight, and the annual maintenance expenses required for the systems. Management stated that the uncertainties and delay in obtaining PRC approvals would delay implementation to the fifth year, reducing the cost savings.

Management questioned whether the entire data collection could be moved to P&DCs, contending that a significant portion of drop-shipped mail bypass P&DCs and the data necessary for postage adjustment for Electronic Verification System (eVS) mailers could not be collected at P&DCs.

With regard to recommendation 1, management will coordinate with Engineering to form a working group; providing specifications for RPW data. The working group will evaluate image recognition capabilities and where feasible and cost-effective, develop an implementation plan. The working group will be established in January 2012.

For recommendation 2, management agreed to evaluate the measure of ODIS-RPW data collection currently performed at serving P&DCs and to form a working group to consider the mail exit point strategy regarding manually processed mail and testing at the P&DCs. The working group will meet quarterly and provide as status of its work in June 2012.

For recommendations 3 and 4, management agreed to investigate the use of additional part-time employees as allowed by union contracts and to coordinate with the PRC the use of census data together with sample verification of mailpieces through image recognition for RPW data, respectively. These efforts are on-going and target dates for coordination with the PRC will ultimately be derived by the schedules for the various changes to analytical principles proposed by the Commission.

See [Appendix C](#) for management's comments, in their entirety.

Evaluation of Management's Comments

The OIG considers management's comments responsive to the recommendations in the report, but rejects management's assertion that the report is misleading and should be significantly altered.

As we reported in our TRACS report, we recognize that all the necessary data is not currently available from Postal Service systems to use for RPW estimation purposes. The establishment of a vice president-level coordination committee, as recommended in the TRACS report, will enable the Postal Service to identify data gaps, develop an action plan, and allocate resources to address the deficiencies.

OIG agrees that consultations with Engineering Systems would help to overcome the perceived constraints in gathering data through image recognition. By incorporating the image recognition requirements in the Postal Service's equipment and process upgrade and redesign process, most of the obstacles associated with deciphering the images can be addressed. We included \$10 million in our prior cost savings calculations in the TRACS report for the necessary modifications of the optical character recognition software system.

As weight data at a high precision is required for certain reporting purposes, using an adequate sample size for the MERLIN-based weight determination will provide the necessary data. Although the Postal Service currently uses voluminous weight data in its complex pricing tables, reevaluation of the need for such data and future simplification of the rate structure will help to fill these gaps. This subject could be a matter for consideration by the coordination committee.

Regarding drop-shipped bypass mail, all mail submitted by business mailers are recorded in the *PostalOne!* system, and the necessary data could be obtained from that system. Additionally, our audits of the eVS system⁹ provided recommendations to improve controls to prevent revenue leakage, mitigating the need for further verification at post offices.

With regard to the estimate of cost savings, our estimate is based on greater use of automation and technology, with a concurrent reduction in the need for manual labor, and the potential substitution of postal support employees at a lower wage rate. The OIG considers recommendations 1 and 2 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.

⁹ *Application Controls Review of the Electronic Verification System*, report number CRR-AR-08-003, issued March 31, 2008 and *Electronic Verification System Rejected Transactions*, report number CRR-AR-09-006, issued August 19, 2009.

Appendix A: Additional Information

Background

The Postal Service annually prepares the CRA report to determine whether it complied with the statutory requirement that each class or type of mail service bear the direct and indirect costs attributable to that class or service. The Postal Service's accounting systems do not accumulate financial data by categories of mail. The Postal Service uses methods approved by the PRC, which include the use of apportionment factors derived from operational and statistical information sources to prepare the CRA report.

Major statistical systems used in the CRA process include the IOCS, the City Carrier Cost system, and the Rural Carrier Cost system to attribute labor costs; TRACS to attribute mail transportation costs; and the RPW system to estimate national RPW information.

Two major components of the RPW system are the Bulk RPW (BRPW) component and the single-piece component. The BRPW collects data from *PostalOne!* on the amount of postage paid, rate category, weight, shape, and volume on the approximately [REDACTED] [REDACTED] of mail volume entered in bulk into the mail stream from bulk mailers. A lesser amount of census data is also derived from other systems, such as the Point of Service system. The single-piece portion collects data on a stratified sample of approximately [REDACTED] of the mail, which constitutes the input into the RPW system. Data collection technicians conduct ODIS-RPW tests as well as data collection for the other statistical systems that support the rate-making process.¹⁰ Currently, RPW tests are conducted on a single shape at a sample of mail exit points on a randomly selected day. Data collectors test the mail and record information in accordance with the guidelines in Handbook F-75.¹¹ Data collected include volume, weight, product category and subcategory, origin, and destination information. The collected data are subjected to a series of processing using a set of SAS^{®12} programs to produce the quarterly and annual reports.

Objective, Scope, and Methodology

Our objective was to determine whether portions of the CRA report could be prepared more efficiently and effectively using automated data to reduce statistical data collection.

To conduct our audit, we reviewed policies and procedures and systems documentation relating to RPW and other statistical systems. We engaged a contractor to assist in our audit work, provided guidance to the contractor, and supervised their work to accomplish our audit objective. We interviewed Postal Service personnel in

¹⁰ RPW data collectors also collect data for the IOCS, the City Carrier Cost System, and the Rural Carrier Cost System.

¹¹ *Data Collection User's Guide for Revenue, Volume, and Performance Measurement System.*

¹² SAS is a data analytic and programming system developed and marketed by SAS Institute, Inc.

Engineering, Operations and Finance, conducted site visits, and observed statistical tests.

We conducted this performance audit from May 2011 through January 2012 in accordance with generally accepted government auditing standards and included such tests of internal controls as we considered necessary under the circumstances. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. We discussed our observations and conclusions with management on December 1, 2011, and included their comments where appropriate.

We evaluated business processes, the availability of system-generated data, and potential enhancements to systems and processes. We did not base our conclusions on the results of computer-generated data, therefore, did not evaluate the reliability of any such data.

Prior Audit Coverage

Report Title	Report Number	Final Report Date	Monetary Impact	Report Results
<i>Cost and Revenue Analysis Reporting Model</i>	CRR-AR-10-003	7/27/2010	None	The Postal Service needs to establish proper access controls for its shared network drive. Also, the Postal Service could enhance controls by improving CRA process documentation. Management agreed with the findings and recommendations.
<i>Transportation Cost System Inputs into the Cost and Revenue Analysis Report</i>	CRR-AR-11-004	9/19/2011	\$9.8 million	Additional planning, systems design, and system integration could enable the Postal Service to use more of the data generated by operational systems for CRA cost attribution purposes. Management agreed with the findings and recommendations.

Appendix B: Monetary Impacts

Finding	Impact Category	Amount
RPW Data Collection	Funds Put to Better Use ¹³	\$127,880,195

The Postal Service could achieve cost savings by using automated processes to collect data for RPW estimation. For single-piece mail processed through automation, the necessary data could be obtained from images of mail captured by mail processing equipment. As discussed in the report, *Transportation Cost System Inputs into the Cost and Revenue Analysis Report*, equipment upgrade costing between \$3,000 and \$5,000 per machine is required to capture some of the necessary data. This upgrade will also benefit other systems, including Operations systems, as well as TRACS, and ODIS-RPW. Mailpiece weight, which cannot be obtained from the image, could be obtained using the MERLIN as part of the manual data collection process. Management could also conduct a special, periodic study to project the weight of mailpieces.

Concentrating the manual data collection on manually processed single-piece mail to 300 or fewer P&DCs, coupled with the decrease in data collection workload, and the use of postal support employees, will result in labor savings. Taking into account the necessary maintenance and incidental expenses, the net present value of savings over a 10-year period is between \$127.88 million and \$141.27 million.

¹³ Funds that could be used more efficiently by implementing recommended actions.

Appendix C: Management's Comments

JOSEPH CORBETT
CHIEF FINANCIAL OFFICER
EXECUTIVE VICE PRESIDENT



January 11, 2012

SHIRIAN HOLLAND
ACTING DIRECTOR, AUDIT OPERATIONS

SUBJECT: Revenue, Pieces, and Weight Inputs into the Cost and Revenue Analysis Report
(Report Number CRR-AR-12-DRAFT)

We found certain aspects of the subject report to be theoretical but not possible, and we believe that the calculation of savings is incorrect as outlined herein. As such, we suggest that you significantly alter your report as it is misleading, and then we could respond to a more factual group of findings. However, here are our responses to the existing report.

The United States Postal Service agrees with the Office of Inspector General's (OIG) recommendations to explore using automated data and image recognition capabilities to: replace manual revenue, pieces, and weight (RPW) data collection for mail processed on automation equipment; explore concentrating data collection of manually processed mail from delivery units to processing and distribution facilities; and, coordinate with the Postal Regulatory Commission (PRC) on these changes. However, as previously noted in our response to the Transportation Cost System (TRACS) Inputs to the Cost and Revenue Analysis Report (Report Number CRA-AR-11-DRAFT), the automated data are not currently available, and will not be available nationally in the timeframe specified by the OIG. In addition, we disagree that the cost savings is \$12.79 million annually. Finally, we disagree that data collection can be solely conducted at processing and distribution facilities, given the wide-ranging needs for Origin/Destination Information System-Revenue, Pieces and Weight (ODIS-RPW) program data within the Postal Service. The Postal Service cannot support its current business needs by moving ODIS-RPW data collection exclusively to the processing and distribution facilities.

We disagree with the OIG's assessment of the state of automated data reporting.

The report states: Current mail processing equipment is able to collect mailpiece images as the mail passes through the equipment. A new initiative, the Image Capture Environment, will consolidate mailpiece images and provide information for greater operational efficiencies and value-added customer services. Together with Optical Character Recognition (OCR) software and longer-term hardware enhancements that are being tested by management, the necessary data, except weight, may be captured from mailpiece images. (page 3)

We agree that many mail processing machines capture images, and that if software is developed to recognize and aggregate revenue, pieces, mail class, thickness, and other mail characteristics, this data is useful for revenue and volume reporting. However, the capabilities and the costs for image recognition and data reporting for RPW purposes are unknown at this time.

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For example, we need mail exit point data from delivery-point sorting equipment such as the Delivery Point Barcode Sorter (DBCS), and not the Advanced Facer Canceler System (AFCS), which sorts incoming mail. Pieces on the DBCS often have cancellation markings that make them unusable for recognition software.

Following are our specific comments in response to the OIG's findings:

The OIG states: The automation component uses existing or ongoing hardware deployment and future software enhancements to produce images of mailpieces and extract data currently gathered by data collection technicians conducting ODIS-RPW tests. (page 4)

As stated in the TRACS audit response, there is a big difference between theory and practice in terms of image processing and producing complete data of known reliability (see the TRACS audit response, issue 2 on page 2). Images are complex, with many markings. Multiple indicia with more than one revenue amount often appear on mailpieces, as do multiple barcodes. Markings may obscure relevant data. Meter numbers are positioned differently within different indicia types. The current mail imaging and recognition capabilities were designed to process and sort mail and not to decipher mail characteristics for financial reporting. Even assuming that image recognition and reporting can occur (i.e., the gap between theory and practice can be closed) as the OIG suggests, the cost savings are overstated. (We discuss these costs later in our response.) However, as mentioned later in the response to recommendation 1 we agree to evaluate the feasibility of extracting data in lieu of ODIS-RPW sampling.

The OIG states: The Mailing Evaluation Readability Lookup instrument (MERLIN) machines, located at processing and distribution centers (P&DCs), can automatically capture weight and thickness of mailpieces. A sampling process can be established for randomly selecting trays to run through MERLIN to capture weight. (page 4)

The OIG significantly understates the importance of weight data for business needs and PRC reporting. The OIG considered only the few weight statistics shown in the summary RPW report. However, we need granularity for all postal rate categories, for which there are hundreds. More critically, weight is required for each weight and zone cell in every pricing table (these cells correspond to the billing determinants, which are used for costing and pricing). A few selected samples from MERLIN cannot fulfill our reporting requirements.

The OIG states: Machinable parcels that flow through [automated processing equipment] comprise 94 percent of parcel volume. The Postal Service is currently modifying the Automated Parcel and Bundle Sorter (APBS) machines to be capable of obtaining mailpiece images as well as package weight and dimensions. (page 5)

While indeed a very high proportion of parcels flows through this equipment, the tolerance for parcel processing scales is four ounces, and the ODIS-RPW standard for weight measurement is to the nearest 0.1 ounce. This same concern was discussed in the TRACS audit response (issue 3 on page 2). This lack of precision results in uncertain volume and revenue reporting by weight cell.

We disagree with the OIG's cost savings estimate.

The OIG states: We estimate the Postal Service could save about \$12.79 million in annual data collection costs. The Postal Service could make the hardware changes needed to existing technology. (from the "Highlights" section of the report).

The OIG analysis does not consider all costs and assumes that data collection savings can begin in year four.¹ This is an unrealistic timeline since the effects of the change in methods would have to be documented, and subsequent approval of those new methods would need to be secured from the PRC. Our specific concerns are:

The OIG assumes no new costs for measuring weight, theorizing that weight can be obtained from a special periodic study or as a manual input using MERLIN. The OIG also assumes that MERLIN machines will be excessed and used by ODIS-RPW.

The same structure as for the ODIS-RPW program would be needed to measure weight and produce estimates with a known degree of precision. Therefore, rather than being costless, the frame development, sampling plans, data collection, administration, software development, and related activities would total \$1 million or more per year.

The OIG incorrectly calculates the recurring cost for equipment maintenance and system upgrades. The OIG uses a five percent yearly recurring rate of the original investment cost. A ten percent rate is consistent with industry standards. Using a ten percent rate results in an additional annual cash outflow of \$2.8 million.

The OIG incorrectly assigns the cost of the sorting machine upgrades. Instead of \$2,500 assigned to DBCS machines in major P&DCs, ODIS-RPW should absorb the full \$5,000 cost.² (In other words, the upgrades aren't necessary for the functioning of the DBCS in its primary role as sortation equipment, so the entire cost would be related to improvements designed for ODIS-RPW). Using the full \$5,000 upgrade cost the annual cash outflow over the ten-year period is \$0.6 million.

The OIG analysis shows data collection cost savings of approximately \$30 million beginning in year four and continuing with slight increases through year ten. With so much uncertainty in the capabilities of the hardware and software required to process images, the one-year parallel testing required to measure the before-and-after impact (of the method change) and the extensive PRC approval process (filing, comment period, information requests, and analysis period) it is likely to move the implementation date to year-five. This timeline would eliminate the \$30 million savings projected by the OIG in year four. Over the projected ten-year time frame, this equates to about \$3 million per year less in data collection savings.

As explained in the TRACS audit response, numerous additional costs are left out by the OIG, such as: full investment costs for image processing; recurring costs for sampling and analyzing mailpiece images; data processing and editing costs; and, IT-related costs for aggregating, transmitting, and storing large amounts of data (see the TRACS audit response bullets at the bottom of page 4).

Considering the cost corrections noted in 1 through 4 above, we arrive at annual savings of approximately \$5.4 million instead of \$12.79 million. Further revisions to the OIG estimate need to be made as explained in the following section.

We disagree that data collection can be moved entirely to the P&DCs.

The OIG states: The Postal Service could collect required data for RPW estimation more efficiently by moving the primary sampling sites from nearly 20,000 destination units that serve as mail exit points to about 300 P&DCs. (page 4)

¹ The OIG cost analysis begins in year zero through year nine. For the purposes of this response the Postal Service will use year one instead of year zero and end in year ten instead of year nine.

² In the TRACS audit 50% of the sorting machine upgrade was assigned to TRACS. However, in the Postal Service response it showed that the return on investment was negative. Therefore, no costs of machine upgrades can be assigned to TRACS.

Under the OIG's plan, manual mail would be sampled in the P&DC instead of at destinating Post Offices, and this data would be merged with image capture data from automation mail at the P&DC.

We disagree with the conclusion that all data collection can move to the P&DCs. All mail does not go through a P&DC. A significant share of mail is drop-shipped by businesses to the delivery unit, and therefore bypasses the P&DC. Mail entered at the destination Post Office by mailers is sampled by ODIS-RPW data collectors for uses other than the RPW report. For example, ODIS-RPW data for electronic verification system (eVS) mail is used to calculate postage adjustments for proper payment. Also, the Postal Service relies on our ODIS-RPW statistics for destination volume by mail product to allocate field workload budget. Without ODIS-RPW statistics that include drop-shipment mail volume, there is no aggregated system data that can be used for this purpose.

Given the need for these statistics, sampling would also have to occur downstream at the delivery units (in addition to the manual sampling at the P&DC that the OIG suggests). Assuming that some downstream testing still needs to occur, at an estimated cost of \$6 million (which is much lower than today's \$38 million annually), negates the recalculated annualized savings of \$5.4 million derived above. This would result in a net cost to the Postal Service, instead of \$12.79 million savings.

In summary, we recognize the importance of using data from image processing systems and reducing costs associated with sampling. However, we do not want to overstate the benefits. There are costs not considered by the OIG, and the savings estimates are aggressive given the scope of the project. We believe that the net \$12.79 million per year benefit for the first ten years is overstated. Nevertheless, we are committed to reducing costs through technological advancements and reconsidering our sampling frame.

Recommendation 1:

Explore using census data and image recognition capabilities to replace the manual Revenue, Pieces, and Weight data for mail processed through automation.

Management Response:

Management agrees with this recommendation. We will coordinate with Engineering to form a working group; providing specifications for revenue, pieces, and weight data. The working group will evaluate image recognition capabilities and, where it is feasible and cost-effective, develop an implementation plan.

Target Implementation Date:

The working group will begin in January 2012 and meet quarterly thereafter.

Responsible Official:

Manager, Regulatory Reporting and Cost Analysis, Finance, Postal Service

Recommendation 2:

Explore concentrating sampling and data collection of manually processed mail from delivery units to the serving processing and distribution facilities for revenue, pieces and weight estimation purposes.

Management Response:

Management agrees with this recommendation. ODIS-RPW data collection is currently conducted in some P&DCs for both automated and manual mail. Management will provide a measure of this activity. Management will form a working group to consider the Mail Exit Point

strategy regarding manually processed mail and testing at the P&DCs. Network optimization may also provide new opportunities for upstream testing at the P&DCs.

Target Implementation Date:

The working group will report the status of its work by June 2012.

Responsible Official:

Manager, Regulatory Reporting and Cost Analysis, Finance, Postal Service

Recommendation 3:

Explore using postal support employees for the manual data collection required to sample non-machinable mail.

Management Response:

We currently rely on "cadre" employees to perform statistical sampling and intend to continue this money-saving practice. We will investigate the use of additional part-time employees as allowed by union contracts.

Target Implementation Date:

Ongoing.

Responsible Official:

Manager, Regulatory Reporting and Cost Analysis, Finance, Postal Service

Recommendation 4:

Coordinate with the Postal Regulatory Commission to use census data together with sample verification of mailpieces through image recognition for revenue, pieces, and weight input.

Management Response:

Management agrees with the recommendation. We will work with the Postal Regulatory Commission to use image recognition data as it becomes available for RPW reporting purposes.

Target Implementation Date:

Ongoing. Target dates for coordinating with the Postal Regulatory Commission will ultimately be derived by the schedules for the various changes to analytical principles proposed by the Commission.

Responsible Official:

Manager, Regulatory Reporting and Cost Analysis, Finance, Postal Service

FOIA exemptions are attached.



Joseph Corbett

Attachment

cc: Mr. Moeller
Ms. Simmons
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Attachment

The following sections of the Postal Service Management Recommendations to Report Number CRR-AR-12 contain proprietary information on competitive products that should be exempt from disclosure under the Freedom of Information Act (FOIA).

On page 2,
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On page 5,

On page 5,

On page 5,

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In Appendix

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