OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

High Throughput Package Sorter at the Denver, CO, Processing and Distribution Center

Audit Report

Highlights

Our objective was to evaluate the performance and functionality of the HTPS at the Denver P&DC.

Background

In October 2015, the U.S. Postal Service approved the purchase of a single pilot High Throughput Package Sorter (HTPS) machine for about $17 million for evaluation at the Denver, CO, Processing and Distribution Center (P&DC). This machine was designed to process more packages about twice as fast as current package sorters. The HTPS is projected to increase automated package processing efficiency and decrease costs. The Denver P&DC's HTPS machine became fully operational in October 2016.

The HTPS program is part of the Postal Service's *Five-Year Strategic Plan – Fiscal Years 2017 to 2021* to build a world-class package platform to meet evolving customer needs. The Postal Service projects deploying up to thirty HTPS machines at P&DCs nationwide with high package volumes.

Our objective was to evaluate the performance and functionality of the HTPS at the Denver P&DC.

What the OIG Found

The HTPS machine at the Denver P&DC was not meeting its projected performance and functionality goals. Specifically, as of February 3, 2017, the average throughput (number of packages fed through the machine divided by the time the machine was used) was 9,375 packages per hour, or 35 percent fewer than the projected 14,350 packages per hour goal. In addition,

the average calculated productivity (number of packages fed through the machine divided by employee workhours) was 181 packages per work hour, or 62 percent fewer than the 478 packages per workhour goal.

The machine exceeded the 17,162 average daily packages processed goal by 108,048 pieces, or 630 percent. However, the Postal Service based its projected goal on the manual package volume transferred from the Denver Mail Processing Annex and not on all of the packages available to be processed on the HTPS. Therefore, we concluded that throughput and productivity are more applicable measures of HTPS performance.

The HTPS was not meeting the throughput goal because Denver P&DC management ran the machine about 14 hours a day instead of nine hours a day as projected. During our site visit in November 2016, we saw employees using as few as one of 14 feeding stations and not fully utilizing the machine's capacity. The Denver P&DC Senior Plant Manager said the main goal was to process as many packages as possible throughout the day.

In addition, the HTPS project manager, Engineering Systems, provided reports showing that about 82,000 packages a day had to wait to feed into the machine because about 24 percent of the machine's trays were occupied with recirculating packages. When the HTPS cannot read a package

barcode or address, an image is sent to a Postal Service Remote Encoding Center for ZIP Code™ sorting information. Packages can recirculate on the HTPS up to three times before being resolved or rejected. As package recirculations increase, package processing space and HTPS throughput are reduced.

In an attempt to reduce rejected packages, Denver P&DC maintenance personnel replaced components that track package sorting information on the machine. The percentage of rejected packages did not improve. In early February 2017, the Postal Service took additional actions, including installing a keying station and software designed to improve the reading of barcodes and addresses. The Postal Service also scheduled a software release for summer 2017 to provide maintenance personnel with better visibility of Remote Encoding Center connectivity problems. We plan to evaluate the effectiveness of these actions in a future audit.

The HTPS was not meeting the productivity requirement, in part, because more than the projected 30 employees staffed the machine. Denver P&DC management told us that about 44 employees, or about 47 percent more than projected, are needed on one of the two shifts based on their experience with the machine. Increased staffing reduces operational savings. Another cause for lower productivity was employees charging their workhours to the HTPS machine operation when manually sorting HTPS rejected packages when they should have been

charging their hours to a manual operation number. On December 21, 2016, over 100 employees charged workhours to the HTPS operation at the same time. This is about 70 more than the projected 30 employees, or 233 percent more employees. The senior plant manager said she would correct the issue by determining the proper operation number; however, as of March 1, 2017, seven of the 12 employees manually processing mail were charging a machine operation number.

Correcting the causes for low throughput and productivity at the Denver P&DC and preventing them at future HTPS sites will help reduce costs, increase operational savings, and better support the Postal Service's strategic plan to build a world-class package platform. We calculated that the lower than expected throughput and use of 14 additional employees to run the machine per tour would cost the Postal Service about $3.15 million from October 15, 2016, through May 26, 2017.

What the OIG Recommended

We recommended management establish optimum runtimes and reduce the number of packages recirculated or rejected on the HTPS machine to help achieve the throughput goal. We also recommended management evaluate staffing used on the HTPS machine and ensure manual package processing workhours are separate from HTPS workhours.
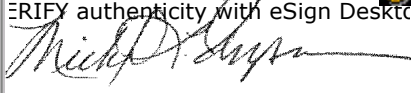
Transmittal Letter

OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

May 11, 2017

MEMORANDUM FOR: ROBERT CINTRON
                          VICE PRESIDENT, NETWORK OPERATIONS

E-Signed by Michael Thompson
ERIFY authenticity with eSign Deskt

FROM: Michael L. Thompson
                          Deputy Assistant Inspector General
                           for Mission Operations

SUBJECT: Audit Report – High Throughput Package Sorter at the
                           Denver, CO, Processing and Distribution Center
                           (Report Number NO-AR-17-009)

This report presents the results of our audit of the High Throughput Package Sorter at the Denver, CO, Processing and Distribution Center (Project Number 17XG005NO000).

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact Margaret B. McDavid, Director, Network Processing, or me at 703-248-2100.

Attachment

cc: Postmaster General
     Corporate Audit and Response Management
     Vice President, Engineering Systems

Table of Contents

Findings

The HTPS machine at the Denver P&DC was not meeting its projected performance and functionality goals.

Introduction

This report presents the results of our audit of the High Throughput Package Sorter (HTPS) at the Denver, CO, Processing and Distribution Center (P&DC) (Project Number 17XG005NO000). The objective of our self-initiated audit was to evaluate the performance and functionality of the HTPS at the Denver P&DC. See Appendix A for additional information about this audit.

In October 2015, the U.S. Postal Service approved the purchase of a single pilot HTPS machine for about $17 million for evaluation at the Denver P&DC. This machine was designed to process more packages about twice as fast as current package sorters. The Postal Service projects the HTPS will increase automated package processing efficiency and decrease costs. The Denver P&DC's HTPS machine became fully operational in October 2016.

The HTPS program is part of the Postal Service's *Five-Year Strategic Plan – Fiscal Years 2017 to 2021* to build a world-class package platform to meet evolving customer needs. The Postal Service projects deploying up to 30 HTPS machines at P&DCs nationwide with high package volumes.
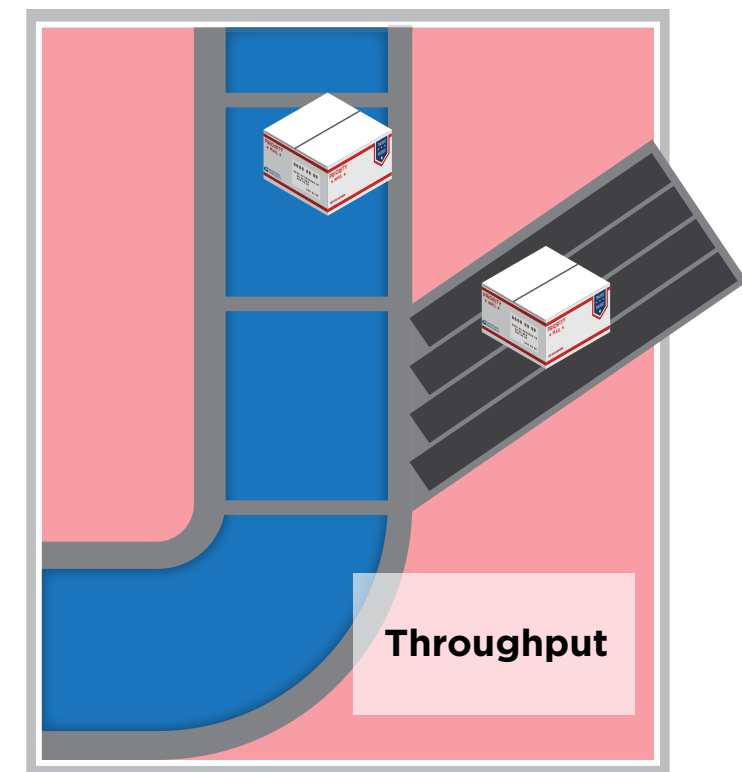
Summary

The HTPS machine at the Denver P&DC was not meeting its projected performance and functionality goals.

Specifically, as of February 3, 2017, the average throughput (number of packages fed through the machine divided by the time the machine was used) was 9,375 packages per hour (pph), or 35 percent fewer packages than the projected 14,350 pph goal. In addition, the average calculated productivity (number of packages fed through the machine divided by employee workhours) was 181 packages per workhour (ppwh), or 62 percent fewer than the 478 ppwh goal.

The machine exceeded the 17,162 average daily packages processed goal by 108,048 pieces, or 630 percent. However, management based the projected goal on the manual package volume transferred from the Denver Mail Processing Annex (MPA) rather than on all of the packages available for processing on the HTPS. Therefore, we concluded that throughput and productivity are more applicable measures of HTPS performance.

The HTPS was not meeting the throughput goal because Denver P&DC management ran the machine about 14 hours a day instead of nine hours a day as projected. During our site visit in November 2016, we saw employees using as few as one of 14 feeding stations and not fully utilizing the machine's capacity. The Denver P&DC Senior Plant Manager said the main goal was to process as many packages as possible throughout the day.

In addition, the HTPS project manager, Engineering Systems, provided reports showing that about 82,000 packages a day had to wait to feed onto the machine because about 24 percent of the machine's trays were occupied with recirculating packages.[1] When the HTPS cannot read a package barcode or address, an

Throughput

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[1] A package that makes a complete pass around the loop without dropping into a sort bin. A package can recirculate three times before it is rejected from the sorter.

image is sent to a Postal Service Remote Encoding Center (REC) for ZIP Code sorting information. Packages can recirculate on the HTPS up to three times before being resolved or rejected. As package recirculations increase, package processing space and HTPS throughput are reduced.

In an attempt to reduce rejected packages, Denver P&DC maintenance personnel replaced components that track package sorting information on the machine. The percentage of rejected packages did not improve. After February 3, 2017, the Postal Service took additional actions including installing a keying station and software designed to improve the reading of barcodes and addresses. The Postal Service also scheduled a software release for summer 2017 to provide maintenance personnel with better visibility of REC connectivity problems. We plan to evaluate the effectiveness of these actions in a future audit.

The HTPS was not meeting the productivity requirement, in part, because more than the projected 30 employees staffed the machine. Denver P&DC management told us that about 44 employees are needed, or about 47 percent more than projected, on one of the two shifts based on their experience with the machine. Increased staffing reduces operational savings. Another cause for lower productivity was employees manually sorting HTPS rejected packages and charging their workhours to an HTPS machine operation when they should have used a manual operation number. On December 21, 2016, over 100 employees charged workhours to the HTPS operation at the same time. This is about 70 more employees than the projected 30 employees, or 233 percent more employees. The Senior Plant Manager stated that the issue would be corrected by determining the proper operation number to charge. However, as of March 1, 2017, seven of the 12 employees manually processing mail were charging a machine operation number.

Correcting the causes for low throughput and productivity at the Denver P&DC and preventing them at future HTPS sites will help reduce costs, increase operational savings, and better support the Postal Service's strategic plan to build a world-class package platform.

We calculated that lower than expected throughput and use of 14 additional employees to run the machine on one shift would cost the Postal Service about $3.15 million from October 15, 2016, through May 26, 2017.

High Throughput Package Sorter Throughput

The HTPS machine at the Denver P&DC was not meeting its projected throughput goal of 14,350 pph. From October 15, 2016, to February 3, 2017, the average throughput was 9,375 pph, or 35 percent less than the Decision Analysis Report (DAR) throughput performance goal (see Figure 1).

The HTPS was not meeting the throughput goal because Denver P&DC management ran the machine about 14 hours a day instead of nine hours a day as projected. The Denver P&DC Senior Plant Manager stated that the local processing strategy was to run as much mail as possible each day on the HTPS because it has 388 discharge bins providing an increased depth of sortation not available with other package processing machines. The plant processed low volumes of mail using long run times

From October 15, 2016, to February 3, 2017, the average throughput was 9,375 pph, or 35 percent less than the DAR throughput performance goal.
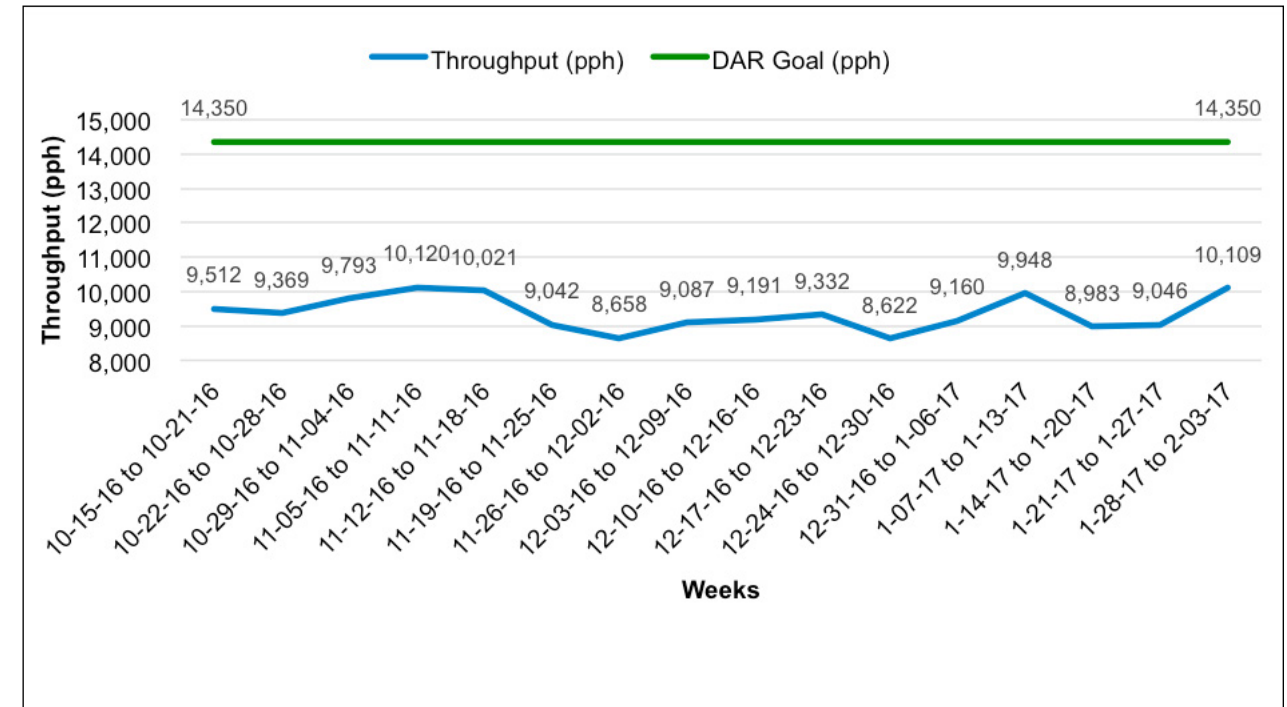
during daytime hours, thereby not fully utilizing the machine's capacity. Engineering Systems reports showed that 36.5 percent of available trays were empty when the HTPS machine ran during October 15, 2016, through February 3, 2017. During our site visit in November 2016, we saw employees using as few as one of 14 feeding stations and not fully utilizing the machine's capacity. Running the machine longer than necessary is inefficient and incurs additional machine and maintenance costs.

Management could increase throughput and decrease run time by establishing optimum run times when sufficient volume and staff support using all of a machine's feeding stations.
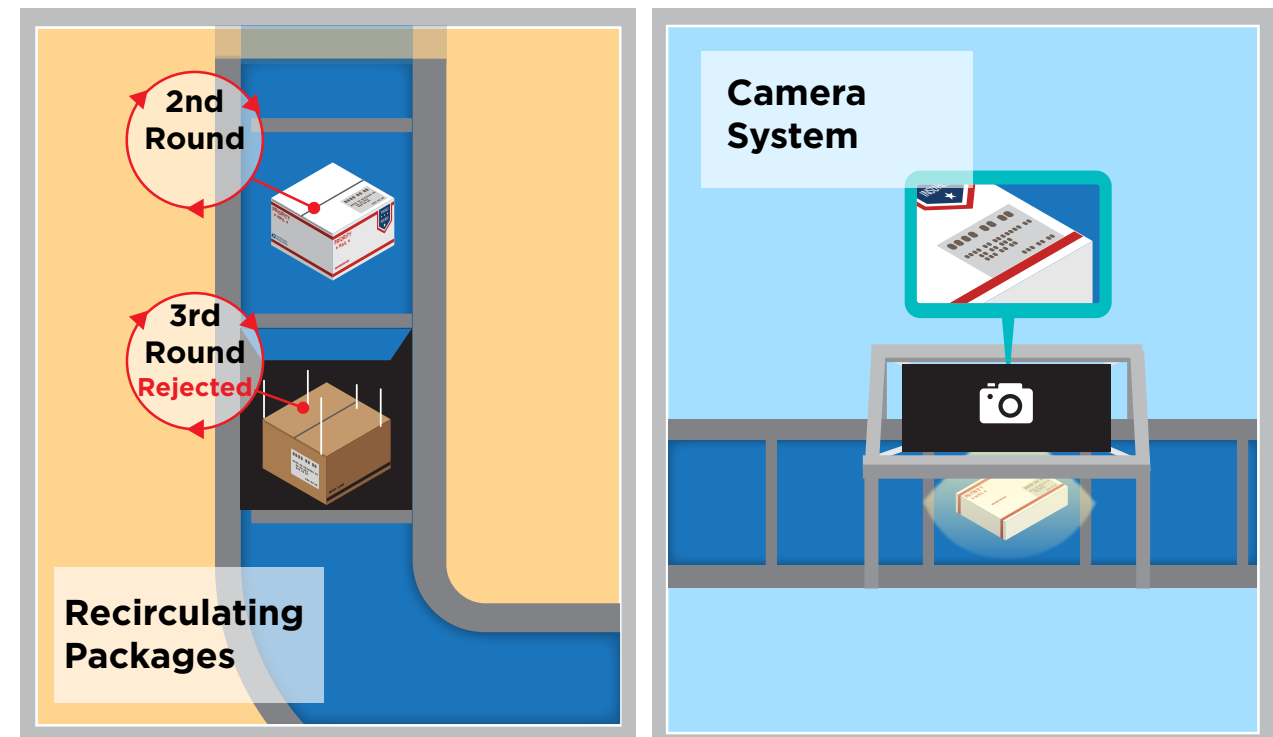
Another cause that negatively affected the HTPS throughput rate was the number of recirculating packages. About 82,000 packages daily[2] had to wait to feed onto the machine because 24 percent of the machine's trays were occupied with recirculating packages based on Engineering Systems reports.

Packages pass under the HTPS camera system to obtain barcode and address information. The HTPS camera system works with the Optical Character Recognition and Video Coding System Image Server (OVIS) to resolve the address information. If the OVIS optical

Figure 1. Throughput per Week

Sources: Postal Service Web End-of-Run (WebEOR) reports as of February 7, 2017, and HTPS DAR.

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2   Engineering Systems HTPS reports contained a weekly recirculating tray percentage and total number of trays passing the counter. We multiplied the recirculating tray percentage by the total number of trays passing the counter to determine the number of recirculating trays each week. We counted the weekly recirculating trays to get a total of 9,184,832 recirculating trays for October 15, 2016, through February 3, 2017. We divided that result by the 112 days in the time period, which equals 82,007 recirculating trays daily on average.

character reader cannot resolve the address information, it sends an image to a Postal Service REC. Packages can recirculate on the HTPS up to three times while waiting for address resolution information from the REC that provides a bin assignment or for the assigned bin container to have available space for the package to sort to its assigned bin. By the end of the third circulation, the package drops into a reject bin. As package recirculations increase, package processing space and HTPS throughput are reduced.

OVIS unresolved[3] was the primary cause of rejected packages. From October 15, 2016, to February 3, 2017, more than 955,000 of over 1.1 million rejected packages, or 84.4 percent, were OVIS unresolved. In an attempt to reduce the number of rejected packages, Denver P&DC maintenance personnel replaced the components that track package sorting information on the machine. The percentage of rejected packages did not improve. The Postal Service took additional actions, including installing a keying station[4] on February 8, 2017, and software designed to improve the reading of barcodes and addresses on March 1, 2017. The Postal Service also scheduled a software release for summer 2017 to provide maintenance personnel with better visibility of REC connectivity problems.

The second highest cause of rejected packages was discharge problems. From October 15, 2016, to February 3, 2017, over 109,000 packages, or 9.7 percent, were rejected due to discharge problems.[5] If the container at the bin is full, the bin sensor becomes blocked and packages assigned to the bin recirculate. Employees staffing the machine (sweepers) replace full containers with empty ones so packages can begin to discharge into the bins again. The HTPS display terminal shows which bins are full. Supervisors can use the HTPS display terminal to improve timeliness of bin sweeping.

The average calculated productivity between October 15, 2016 and February 3, 2017, was 181 ppwh, or 62 percent less than the projected 478 ppwh goal.

High Throughput Package Sorter Productivity

The HTPS was not meeting the productivity requirement. The average calculated productivity between October 15, 2016, and February 3, 2017, was 181 ppwh, or 62 percent fewer than the projected 478 ppwh goal (see Figure 2).

Figure 2. HTPS Weekly Productivity

Sources: Postal Service WebEOR report as of February 6, 2017, and HTPS DAR.

The DAR productivity goal was derived by dividing the throughput goal of 14,350 by the anticipated 30 employees required to staff the HTPS. The DAR assumed the 30 employees would include 14 employees feeding packages at the induction stations and 16 sweepers replacing full containers at the discharge bins. However, more than the projected 30 employees staffed the machine

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3 Packages that reject without address resolution information.
4 Employees use the keying station to manually type package ZIP Code information enabling the HTPS machine to sort the package.
5 Discharge problems occur when a package cannot sort to its assigned bin because the bin sensor is blocked.

Another cause for lower productivity was employees manually sorting HTPS rejected packages but charging their workhours to the HTPS machine operation.

causing lower productivity. Denver P&DC management told us that based on their experience with the machine about 44 employees are needed on one of the two shifts. This is a 47 percent increase over the DAR assumption and includes 12 employees feeding packages and 32 sweepers. Increased staffing reduces operational savings.

Another cause for lower productivity was employees manually sorting HTPS rejected packages but charging their workhours to the HTPS machine operation when they should have used either operation number 324[6] or operation number 321.[7] On December 21, 2016, the busiest day of the year for the Postal Service, over 100 employees charged workhours to the HTPS operation at the same time. This is about 70 more employees than the projected 30 employees, or 233 percent more employees. On November 30, 2016, the senior plant manager stated the issue would be corrected by determining the proper operation number to charge. However, during our observations on March 1, 2017, seven of 12 employees manually processing mail were charging a machine operation number. When operational supervisors do not ensure employees are clocked into the correct operation, the Postal Service cannot properly evaluate productivity.

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6 Manual distribution of incoming Priority Mail packages.
7 Manual distribution of outgoing Priority Mail packages.

Recommendations

We recommend management establish optimum runtimes and reduce the number of packages recirculated or rejected on the HTPS machine to help achieve the throughput goal, evaluate staffing used on the HTPS machine, and ensure manual package processing workhours are separate from HTPS workhours.

We recommend the Vice President, Network Operations:

1. Establish and implement site specific optimum High Throughput Package Sorter machine runtimes to help achieve the established throughput goal.

2. Develop and implement a program to ensure the number of packages recirculated or rejected on the High Throughput Package Sorter machine is reduced to help achieve the established throughput goal.

3. Evaluate and determine the optimum High Throughput Package Sorter machine staffing to help ensure achievement of established goals.

4. Ensure supervisory oversight is established to confirm employees are charging manual package processing workhours correctly.

Management's Comments

Management disagreed with most of the report's findings and recommendations 2 and 3. Management partially agreed with recommendation 1 and agreed with recommendation 4.

Management stated the audit period was not appropriate for collecting reliable data or performing objective evaluations of new equipment performance because it occurred during the initial ramp-up of a new machine type and included the fall and peak mailing seasons.

In addition, management disagreed with our monetary impact calculations, stating that the calculations double counted impacts for throughput and run time as well as productivity and workhours. Management also stated that we should have based the calculations on actual staffing levels and not the staffing levels specified in the DAR.

Regarding recommendation 1, management stated that optimum runtimes were already established for the HTPS operations and these runtimes alone will not achieve the HTPS throughput goal due to additional influences on throughput performance.

Regarding recommendation 2, management stated the package recirculation and reject rates were established in the DAR prior to deployment of the HTPS. Management also stated the audit period was not a reasonable period to base critical performance evaluations.

Regarding recommendation 3, management stated that the DAR's recommended staffing level of 30 employees was intended to be an average staffing level over a period of time and actual staffing levels will fluctuate as mail volume and operating conditions fluctuate throughout the day.

Regarding recommendation 4, management stated they will provide supervisory oversight of employee use of operation numbers. The target implementation date is May 31, 2017.

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

Evaluation of Management's Comments

Regarding management's disagreement with our audit period, the Postal Service accepted the HTPS and placed it in full operation on October 13, 2016, prior to our audit period of October 15, 2016, to February 3, 2017. The approved Postal Service Headquarters (HQ) HTPS business case was based on the machine achieving the throughput and productivity goals we used to measure the performance of the HTPS. In addition, the business case did not project a ramp-up period. The HTPS throughput and productivity did not show a trend of improvement during the audit period, even as Postal Service management applied adjustments and lessons learned. Our audit was intended to provide timely recommendations to assist management in their decision to purchase additional HTPS machines.

Regarding management's disagreement with our monetary impact calculations, we did not double count the impacts of throughput and run time and productivity and workhours. For the monetary impact calculation for throughput, we calculated the weekly differences between actual throughput and the DAR throughput goal. We used this difference to calculate additional runtime hours per week and multiplied the result by the DAR staffing goal and hourly labor rate. We used the DAR staffing goal to be consistent with the approved business case assumptions. For the monetary impact calculation for productivity, we based the staffing level on discussions with Denver P&DC management and compared it to the DAR staffing goal.

Regarding management's partial agreement with recommendation 1, the Postal Service's data showed that during the audit period, Denver P&DC management ran the HTPS about 14 hours a day instead of nine hours a day as projected. We agree that optimum runtime is not the only factor that impacts the Postal Service's ability to achieve the DAR throughput goal. We discussed this issue with management at our exit conference and revised our recommendation to reflect that discussion. Management has the ability to increase throughput by optimizing runtime.

Regarding management's disagreement with recommendation 2, the approved business case does not have package recirculation and reject rates as stated by management. In addition, during the exit conference, the Manager, Network Operations Engineering, stated that they agreed that reducing recirculated or rejected packages would help improve throughput. We agree that management should formally develop and implement a program to ensure the number of packages recirculated or rejected on the HTPS machine is reduced to help achieve the established throughput goal.

Regarding management's disagreement with recommendation 3, we agree that there were fluctuations in machine staffing; however, our recommendation to evaluate and determine the optimum HTPS staffing was intended to aid management in evaluating whether the HTPS is meeting its approved business case goals and projected return on investment.

The U.S. Postal Service Office of Inspector General (OIG) considers management's comments responsive to recommendation 4 and corrective actions should resolve the issues identified in the report.

We view the disagreements on recommendations 1, 2, and 3 as unresolved and do not plan to pursue them through the formal audit resolution process. Therefore, we are closing them with the issuance of this report. We plan to perform additional audit work on the Postal Service's actions to improve throughput and productivity of the HTPS at the Denver P&DC and any future deployed HTPSs. All recommendations require OIG concurrence before closure. Consequently, the OIG requests written confirmation when corrective action is completed. Recommendation 4 should not be closed in the Postal Service's follow-up tracking system until the OIG provides written confirmation that the recommendation can be closed.

Appendices

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Background

In October 2015, the Postal Service approved the purchase of a single pilot HTPS machine for about $17 million for evaluation at the Denver P&DC. Of that $17.3 million, $15.2 million was for the HTPS, $1.7 million was for future relocation of two package processing machines to other facilities, and nearly $0.4 million was for closing the Denver MPA. This machine was designed to process more packages about twice as fast as current package sorters. Management projects the HTPS will increase automated package processing efficiency and decrease costs.

The pilot HTPS is an automated package sorter with 388 bins and four induction platforms with 14 feeding stations to feed mail onto a double loop sorter. The HTPS uses existing Small Package Sorting System (SPSS)[8] technology on a larger scale.

The Postal Service is planning for the increased automation capacity provided by the HTPS to enable them to relocate the Automated Package Processing System[9] from the Denver MPA to another facility by May 1, 2017, and the SPSS from the Denver P&DC to another facility by spring 2018.

The HTPS program is part of the Postal Service's *Five-Year Strategic Plan – Fiscal Years 2017 to 2021* to build a world-class package platform to meet evolving customer needs. Denver, CO, P&DC management placed the HTPS in operational status on July 9, 2016. The Postal Service conditionally accepted it on July 29, 2016, and completed final acceptance tests on September 29, 2016. Postal Service HQ Engineering Systems resolved all machine issues on the punch list by October 13, 2016.

The purchase of this single pilot HTPS is part of a larger strategy to reduce the risks with and likely acceleration of the deployment of up to thirty HTPS machines at P&DCs nationwide with high package volumes.

Objective, Scope, and Methodology

Our objective was to evaluate the performance and functionality of the Denver P&DC HTPS.

To achieve our objective, we:

- Analyzed data from the Postal Service's Enterprise Data Warehouse, WebEOR, Engineering Systems SPSSGetFiles, Contract Authoring and Management System, and Time and Attendance Collection System to determine HTPS volume, productivity, throughput, and workhours.

- Compared HTPS performance with DAR performance measures.

- Observed HTPS performance and staff clocking procedures at the Denver P&DC.

- Discussed HTPS performance, expectations, and functional issues with Postal Service HQ personnel and Denver P&DC managers.

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8 A commercial-off-the-shelf automated sorter for packages weighing 20 pounds or less.
9 An automated parcel and bundle sorting system that uses a carousel-type cross belt sorter subsystem.

We conducted this performance audit from November 2016 through May 2017, in accordance with generally accepted government auditing standards and included such tests of internal controls as we considered necessary under the circumstances. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our 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 March 29, 2017, and included their comments where appropriate.

We used computer processed data from the Postal Service's Enterprise Data Warehouse, WebEOR, Engineering Systems SPSSGetFiles, the Contract Authoring and Management System, and Time and Attendance Collection System when performing our analysis. We assessed the reliability of computer-generated data by interviewing knowledgeable agency officials and reviewing related documentation. We determined that the data were sufficiently reliable for the purposes of this report.

Prior Audit Coverage

The OIG did not identify any prior audits or reviews related to the objective of the audit.

ROBERT CINTRON
VICE PRESIDENT, NETWORK OPERATIONS

UNITED STATES
POSTAL SERVICE

April 28, 2017

LORI LAU DILLARD

Subject: High Throughput Package Sorter at the Denver, CO Processing and
Distribution Center (Report Number NO-AR-17-DRAFT)

Thank you for this opportunity to respond to the OIG audit of the High
Throughput Package Sorter (HTPS) at the Denver, CO Processing and
Distribution Center. We disagree with most of the report's recommendations as
well as the scope and calculation methods of all the OIG's suggested monetary
impacts. It appears that the OIG is double counting the monetary impacts for
throughput and runtime, as well as for work hours and productivity. This is
explained in more detail later in this document.

We also believe that the period selected by the OIG to perform the audit, which
was during the initial ramp-up of a brand-new machine type and concurrent with
the fall and peak mailing seasons, should not be used to collect reliable data or
to perform objective evaluations of performance of new equipment.

We agree that optimum runtimes should be established. Indeed, site specific
runtimes are established for the Denver P&DC, which is currently the only
location with HTPS in the country. Optimum runtimes were established from the
inception of HTPS operations at Denver. The runtimes are based on planned
daily mail volumes at a target operational throughput per hour rate. Planned
(optimum) runtimes are depicted in the Run Plan Generator (RPG) reports for the
HTPS machine dating back to Oct 1, 2016, and were available during the entire
period of the OIG's audit.

Optimum machine runtimes are only one of several factors which influence
achievement of throughput per hour goals however. Additional influences on
performance include arrival profile and induction rate of mail volume; efficiently
sweeping full containers; mail piece recirculation rates; machine reject rates; and
mail piece readability, to name several. Because of these additional influences
on runtime, management disagrees that implementation of specific optimum
runtimes will, singularly, achieve either the throughput goal or the OIG's
suggested monetary impacts.

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1

Reject rates for the HTPS were established as a part of the Decision Analysis Report (DAR) prior to deployment of the machine in Denver. The target reject rate is established for long-term performance of the machine. As noted earlier, the period of the OIG audit, which was during the initial startup and ramp-up of the prototype machine, is not a reasonable period for which to base critical performance evaluations.

Nevertheless, as noted by the OIG, Denver maintenance personnel took actions to improve reject rates during the time of the audit and plan a software update in the spring of 2017. Identifying and resolving software and hardware issues are a normal part of the ramp-up period of any new mail processing equipment. This reinforces the fact that attempting to identify and provide reasonable and actionable audit recommendations during the initial operational period of new equipment is not practicable.

The DAR established the recommended staffing of the HTPS at 30 employees. This is intended to be an average staffing level over a period of time. Actual staffing, which may be either more or less employees, will fluctuate as mail volumes and operating conditions warrant throughout each operating day. The OIG noted that as few as one employee was observed staffing the machine and that as many as 100 employees were actually charging their work hours to the HTPS operation. In order to arrive at an accurate staffing level and monetary impact, actual observations for actual durations should have been observed and documented.

Management agrees that supervisory oversight should be established to confirm employees are charging manual package processing work hours correctly.

Recommendation 1:
Establish and implement site specific optimum High Throughput Package Sorter machine runtimes to help achieve the established throughput goal.

Management Response:
Management partially agrees with this recommendation.

Optimum runtimes are established for the HTPS operations at Denver. Planned (optimum) runtimes are depicted in the RPG reports for the HTPS machine dating back to Oct 1, 2016, and were available during the entire period of the OIG's audit.

Because there are additional influences on throughput performance, management disagrees that implementation of specific optimum runtimes will, singularly, achieve either the throughput goal or the OIG's suggested monetary impacts totaling $2,521,176.80.

2

Recommendation 2:
Develop and implement a program to ensure the number of packages recirculated and rejected on the High Throughput Package Sorter machine is reduced to achieve the established throughput goal.

Management Response:
Management disagrees with this recommendation.

Recirculation and reject rates for the HTPS were established as a part of the Decision Analysis Report (DAR) prior to deployment of the machine in Denver. The period of the OIG audit, which was during initial startup and ramp-up of the prototype machine, is not a reasonable period for which to base critical performance evaluations.

Recommendation 3:
Evaluate and determine the optimum High Throughput Package Sorter machine staffing to ensure achievement of established goals.

Management Response:
Management disagrees with this recommendation.

The DAR established the recommended staffing at 30 employees. This is intended to be an average staffing level over a period of time. Actual staffing, which may be more or fewer employees, will fluctuate as mail volumes and operating conditions warrant throughout each operating day. For these reasons, management also disagrees with the OIG's suggested monetary impacts of $632,136.96.

Recommendation 4:
Ensure supervisory oversight is established to confirm employees are charging manual package processing workhours correctly.

Management Response:
Management agrees with this recommendation. Management will provide supervisory oversight and validation that employees are using the correct operation numbers when assigned to manual and HTPS distribution functions.

Responsible Official: Karen Padden, Senior Plant Manager, CO/WY District

Implementation Date: May 31, 2017

3

Monetary Impact

Recommendation	Impact Category	Amount
1	Questioned Costs[1]	$1,260,588.40
1	Funds Put to Better Use[2]	1,260,588.40
3	Questioned Costs	316,068.48
3	Funds Put to Better Use	316,068.48
Total		$3,153,313.76

Management Response:

1. The Postal Service disagrees with the calculation method, scope, and magnitude of the OIG's suggested monetary impact of $1,260,588.40 for not meeting the HTPS Decision Analysis Report (DAR) throughput performance goal.

   The Postal Service acknowledges that the HTPS at Denver did not achieve the DAR throughput per hour target during the time of the OIG audit. However, the time period selected by the OIG to perform the audit, which was during the initial ramp-up of a brand-new machine type and concurrent with the fall and peak mailing seasons, should not be used to collect reliable data or to perform objective evaluations of performance.

   As with the initial deployment and ramp-up of any new mail processing equipment, a learning curve exists where adjustments must be made to several operational levers, including the mail arrival profile, staffing, mechanical and software applications and planned start and end times, to list a few. Observances noted by the OIG during their audit confirm these adjustments.

   The OIG describes instances where as few as one, and as many as 44 employees, were staffing the HTPS machine. The OIG also documents that a keying station was added to the HTPS and that, "In an attempt to reduce the number of rejected packages, Denver P&DC maintenance personnel replaced the components that process sorting information between the machine and the REC." These types of adjustments are expected with the initial use of any new equipment the Postal Service deploys and would affect the ability to achieve DAR targets during the initial ramp-up period. Moreover, they are common in many industries in the private sector

   Additionally, the suggested monetary impact in this section uses additional (excess) runtime multiplied by expected (DAR) staffing levels to arrive at additional work hours and questionable costs. Staffing levels and resulting work hours are not directly correlated to throughput performance. Therefore, calculating savings opportunities or monetary impacts associated with actual

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throughput performance by using an "assumed" fixed DAR staffing level instead of the actual staffing levels and actual employee work hours is invalid.

A more accurate calculation of "opportunity" or impact for throughput per hour performance would be the number of packages that could have been processed while running at the target (DAR) throughput per hour versus the actual throughput per hour and runtime.

Actual employee work hour usage versus target (DAR) work hour usage should be used to calculate productivity impacts and not used for calculating throughput or runtime impacts.

2. The Postal Service disagrees with the method of calculation, scope, and magnitude of the OIG's suggestion that an additional monetary impact of $1,260,588.40 is achievable by establishing optimum runtimes.

   As outlined in #1 above, the Postal Service does not agree with the OIG's suggested monetary impact related to throughput per hour performance. However, to suggest that the Postal Service has equal potential monetary impacts associated with throughput per hour performance **and** runtime performance is inaccurate and amounts to double counting the potential impact. Runtime is a variable in the throughput per hour equation:

   "Mail Volume / Runtime = Throughput per Hour"

   If throughput per hour is improved (increased) as suggested by the OIG, runtime will decrease proportionately. Conversely, if runtime is reduced, throughput per hour will improve proportionately (assuming the same volume of mail is processed in all examples).

   Accordingly, monetary impact should only be assigned to one variable, either throughput per hour or runtime, but not both. In either case, the Postal Service disagrees with using assumed work hours to calculate monetary impacts associated with either throughput per hour or runtime as the OIG does in this audit.

3. The Postal Service disagrees with the method of calculation, scope, and magnitude of the OIG's suggested monetary impact of $316,068.48 associated with the DAR productivity performance goal.

   The OIG uses incorrect work hour data in their productivity calculation. The correct work hour total should reflect the actual number of work hours used in the operation. The OIG calculation used a "projected" work hour total based on their calculated excessive runtime figure multiplied by the DAR recommended staffing instead of the observed actual staffing on the HTPS.

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This calculation produces a result that is hypothetical and based on the unreliable metrics.

The correct work hour figure and corresponding monetary impact should come from observed actual work hours used in the operation compared to target work hours for the actual sorted mail volume. The following is the correct equation for calculating productivity:

"Total mail volume processed / actual work hours used = Productivity"

There is no way to know from the information presented by the OIG what the actual staffing was during their calculated excessive runtime period. The OIG noted observations where as few as one employee and as many as 44 employees staffed the HTPS, while as many as 100 employees had charged work hours to the machine on a single day. None of these staffing data are reliable for calculating actual productivity, as there is no indication in the audit as to how many of these employees actually worked on the HTPS or for how long each day they worked.

According to the OIG's observations, many employees who were performing manual parcel distribution were charging their work hours to the HTPS machine. Therefore, simply using TACS data would also provide unreliable data for actual work hours used in the HTPS operation. As noted earlier, the OIG's method of using staffing from the DAR is also flawed, as this is a hypothetical number and not the actual staffing that was used by Denver during the audit.

In summary, using any data other than observed actual staffing and the actual duration of that staffing, as well as actual mail volume sorted, will yield a flawed productivity and monetary impact.
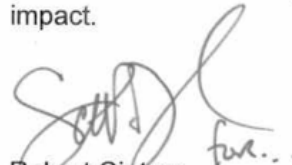
4. The Postal Service disagrees that there is an additional monetary impact of $316,068.48 by evaluating staffing used on the HTPS.

This suggested monetary impact also appears to be a double counting of the suggested monetary impact related to productivity. As described earlier, the calculation for productivity is as follows:

"Total mail volume processed / actual work hours used = Productivity"

If work hours are reduced as recommended in the previous section, the staffing will also most likely be reduced – or at a minimum, the hours worked per employee will be reduced. If, on the other hand, staffing is reduced as suggested for this monetary impact, the work hours will most likely be reduced.

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Because of reasons stated earlier, the Postal Service disagrees with the suggested monetary impacts associated with productivity as calculated by the OIG. To suggest, as the OIG does, that there is an equal monetary impact associated with reducing staffing is flawed and is duplicative of any actual impact.

Robert Cintron