

INTERNAL AUDIT DEPARTMENT

Audit of the Annual Physical Inventory

Fiscal Year 2019

September 2019 Performance Audit

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EXECUTIVE SUMMARY

INTRODUCTION

Port Authority internal auditors observed the fiscal year (FY) 2019 Annual Physical Inventory (Inventory). The Inventory is coordinated by Purchasing and Materials Management Department personnel. Its purpose is to ensure that the on-hand quantity for each inventory item is accurately recorded in the PeopleSoft system so that transit operations are supported by having materials and supplies available when needed. This Inventory was performed from March 1, 2019 to March 3, 2019. For FY 2019, material and supply expenditures were approximately \$20.6 million or 4.8% of total expenses of \$430.4 million (note: total expenses per the audited financial statements as of June 30, 2018).

OBJECTIVES, SCOPE AND METHODOLOGY

The audit objectives were to determine the adequacy of internal controls for the Inventory and to determine if items were accurately counted, variances and adjustments were recorded correctly in PeopleSoft, and the cut-off process was properly followed for requisitions and receivers issued before and after Inventory. The scope of the audit was the FY 2019 Inventory.

We observed the employees as they counted the inventory items, and we independently tested a sample of the inventory counts, the accuracy of the inventory cut-off process and assisted in resolving variances.

STATEMENT OF OPINION

In our opinion, the internal controls associated with PAAC's FY2019 Annual Physical Inventory at Manchester, South Hills Junction (SHJ), South Hills Village (SHV), and the garage locations (Ross and West Mifflin) are effective and the processes are generally adequate. Opportunities for improvement with the Annual Physical Inventory and internal controls over the processes are summarized in the observations and recommendations below.

STRENGTHS NOTED DURING THE AUDIT

Strengths noted during the audit included the following:

- 1) The cut-off processes were well controlled during the FY2019 Annual Physical Inventory.
- 2) Prior to the start of FY2019 Inventory, the Manager, Purchasing Materials worked with the Manager of Inventory Operations & Distribution to identify items with more than one bin location and to review and adequately resolve the items.
- In general, the overflow stock notices were effectively used and typically placed for items with overflow stock.

RESULTS OF TEST

Based on our statistically valid sample and a margin of error of plus or minus 4%, we are 95% confident that the true accuracy rate of item counts in the population is between 86.4% and 94.4%.

OBSERVATIONS AND RECOMMENDATIONS

OBSERVATION 1 - BUSINESS PROCESSES RELATED TO SPARE ENGINES REQUIRE IMPROVEMENT (STORAGE, TRACKING/MOVEMENT AND QUANTITY/PERCENTAGE)

Observation 1a – Spare Engine – Storage

During the FY 2019 Annual Physical Inventory, Internal Audit Department personnel observed 33 new spare engines stored in the Treasury Room at Manchester. These engines were purchased during the procurement of transit coaches and part of the major components package.

Internal Audit observed that these new spare engines were in various stages of long-term storage (not covered or partially or completely sealed in plastic) with most of the engines appearing to be stored as recommended by the manufacturer's service manual, "Preparing Spare or Rebuilt Engine for Long-Term Storage."

Internal Audit discussed the rebuilt engines with the Vehicle Project Coordinator and the Manager – Maintenance & Service, and they stated that there are 14 internally rebuilt engines available for future use and the engines are stored in various stages of long-term storage throughout Manchester and are not being stored as recommended by the manufacturer's service manual.

Business Impact 1a – Spare Engine – Storage

If Port Authority fails to store the major component parts (new spare engines) as recommended in the manufacturer's service manual, any failures resulting from improper long-term storage practices may result in these engines not being warrantable by the manufacturer and/or potentially a shortened useful life, which may cause increased expense to Port Authority.

Recommendation 1a – Spare Engine – Storage

Internal Audit recommends that major component parts (engines) be stored in accordance with the manufacturer's service manual.

Internal Audit Department recommends that appropriate management follow up with the manufacturer to confirm the current long-term storage guidelines and, if there are any changes, notify appropriate Port Authority personnel responsible for storing the engines of the changes and modify Port Authority long-term storage practices with the latest guidelines established by the manufacturer.

Internal Audit recommends that rebuilt engines be physically stored and relocated in an area that assists in complying with the manufacturer's recommended long-term storage guidelines and stored similarly to the new spares.

Management Response 1a – Spare Engine – Storage

Management concurs with the recommendation.

Target Date: Implemented

Observation 1b – Spare Engine – Tracking/Movement and Quantity/Percentage

Tracking/Movement

Internal Audit determined that Port Authority purchased 31 spare engines from one manufacturer through the initial agreement and subsequent change orders related to RFP4000 and:

- 7 new spare engines (year built 2011 & 2012) were utilized (VOH/maintenance) and tracked through the PeopleSoft and the Work Order System,
- 23 new spare engines (year built 2014, 2015 & 2016) are available for use in future vehicle overhauls (VOHs), and
- 1 new spare engine (year built 2012) was unaccounted for in the PeopleSoft and the Work Order System.

Internal Audit also determined that Port Authority purchased 11 spare engines from a second manufacturer through the initial agreement and change orders related to RFP4000 and:

- 10 new spare engines (year built 2011 & 2013) were utilized (VOH/maintenance) and tracked through the PeopleSoft and the Work Order System, and
- 1 new spare engine was unaccounted for in the PeopleSoft and the Work Order System.

The Vehicle Project Coordinator and Manager – Maintenance & Service, stated that information regarding the two unaccounted for new spare engines may not have been recorded in the current Work Order System to include information regarding when the engines were used during a vehicle overhaul (VOH).

Quantity/Percentage

Internal Audit discussed with Operations and Purchasing and Materials Management personnel the major component package (quantity/percentage of spare engines) purchased during the initial procurement of transit coaches and subsequent change orders. They stated that a 10% spare ratio of major components (engines) to the number of transit coaches purchased was historically the quantity/percentage procured.

The Vehicle Project Coordinator and the Manager – Maintenance & Service provided spare engine usage information from various sources (PeopleSoft, Work Orders, Agreements and subsequent change orders); however, there was:

• Limited documentation to support that management/maintenance personnel performed an ongoing analysis of the data to determine that the appropriate quantity/percentage of new spare engines was purchased during a procurement of transit coaches, and

 No documented process related to the analysis of new spare engine usage to determine if an appropriate quantity/percentage of engines was purchased.

Business Impact 1b – Spare Engine – Tracking/Movement and Quantity/Percentage

If the purchase of major component parts (engines) and usage information is not analyzed, there is a risk that Port Authority may not have an adequate supply available potentially resulting in a disruption of service, or may have a surplus of engines potentially resulting in an increased cost to Port Authority.

Recommendation 1b – Spare Engine – Tracking/Movement and Quantity/Percentage

In the event that Port Authority continues to track spare engines in the same manner as in previous years, we recommend the following going forward:

- Appropriate operation/maintenance personnel should accurately record the usage information of spare engines in PeopleSoft and the Work Order System.
- Appropriate management/maintenance personnel should analyze engine usage information and determine a reasonable quantity/percentage of major component parts (engines) as guidance for future purchases and document the results.
- Appropriate management/maintenance personnel should develop and document processes related to determining a reasonable quantity/percentage of major component parts (engines) that should be purchased.

This process/procedure should consider (but not be limited to) the following:

- Identifying, informing and instructing appropriate personnel responsible for collecting the spare engine information (tracking/movement, quantity purchased, usage of spare and rebuilt engines, etc.), recording it in PeopleSoft and the Work Order System and ensuring they are aware of the essential information needed for management's analysis and decision-making processes.
- Monitoring and analyzing the information by appropriate management personnel ensuring data collected and recorded is accurate for the tracking and usage of spare and rebuilt engines. In addition, appropriate management should ensure that there is sufficient information collected and recorded to permit calculating a reasonable spare ratio percentage for future spare engine purchases.

Management Response 1b – Spare Engine – Tracking/Movement and Quantity/Percentage

Management concurs with the recommendation and going forward:

 Appropriate operation/maintenance personnel will accurately record the usage information of spare engines in PeopleSoft and the Work Order System.

Target Date: Implemented

 Appropriate management/maintenance personnel will analyze engine usage information and determine a reasonable quantity/percentage of major component parts (engines) as guidance for future purchases and document the results.

Target Date: November 1, 2019

 Appropriate management/maintenance personnel will develop and document processes related to determining a reasonable quantity/percentage of major component parts (engines) that should be purchased.

Target Date: November 1, 2019

This process/procedure will consider (but not be limited to) the following:

- Identifying, informing and instructing appropriate personnel responsible for collecting the spare engine information (tracking/movement, quantity purchased, usage of spare and rebuilt engines, etc.), recording it in PeopleSoft and the Work Order System and ensuring they are aware of the essential information needed for management's analysis and decision-making processes.
- Monitoring and analyzing the information by appropriate management personnel ensuring data collected and recorded is accurate for the tracking and usage of spare and rebuilt engines. In addition, appropriate management will ensure that there is sufficient information collected and recorded to permit calculating a reasonable spare ratio percentage for future spare engine purchases.

Target Date: December 31, 2019

OBSERVATION 2 – SOME INVENTORY ITEMS WITH AN AVERAGE COST OF AT LEAST \$2.00 EXCLUDED FROM THE COUNT SHEETS

When reconciling the number of items in inventory (at Manchester and Ross), we noted differences between the number of inventory items listed on the PeopleSoft query generated by Manager, Purchasing Materials and the number of items appearing on the inventory count sheets.

The Manager, Purchasing Materials and Information Technology Services Department personnel determined that the criteria to create and detail the inventory items on the count sheets utilizes the physical location table in PeopleSoft and the criteria to create and detail the inventory items on the Purchasing and Materials Management Department personnel query utilizes the default bin location table.

In addition, Internal Audit determined that the count sheets included 7 inventory items at Manchester with two different units of measure (each or other than each) resulting in these items being detailed on the count sheets twice.

Business Impact

If items in inventory with an average cost of at least \$2.00 are not on the count sheets, there is a risk that these items may not be counted and that inventory shortages may not be identified for these items and/or that the items may not be available when needed for operations.

If items in inventory have more than 1 unit of measure on the count sheets, there is a risk that these items may not be accurately counted and/or the count accurately recorded in PeopleSoft and that the inventory count may be misstated.

Recommendation 2

Purchasing and Materials Management Department personnel should:

- 1) Provide necessary information to Information Technology Services Department personnel to enable them to update the process and instructions to ensure that items that should be included in inventory appear on the count sheets. This may be accomplished by developing an exception report and, prior to the annual physical inventory, running the report to identify inventory items with no physical location in PeopleSoft and should ensure these items appear on the count sheets. Going forward this exception report should be provided to Internal Audit prior to the start of the annual physical inventory
- 2) Count any items with an average cost of \$2.00 or greater that appear on the exception report and process inventory adjustments if necessary.
- 3) For future inventories, ensure that all inventory items that should be counted appear on the count sheet with one unit of measure.

Management Response 2

Management concurs with the recommendation and:

1) Provided the necessary information to Information Technology Services Department personnel to enable them to update the process and instructions to ensure that items that should be included in inventory appear on the count sheets. An exception report was developed and will be run prior to performing the annual physical inventory. This report may identify inventory items with no physical location in PeopleSoft and will help ensure these items appear on the count sheets. Going forward this exception report will be provided to Internal Audit prior to the start of the annual physical inventory.

Target Date: Prior to the start of the FY 2020 Annual Physical Inventory

2) Will count any items with an average cost of \$2.00 or greater that appeared on the exception report and process inventory adjustments if necessary.

Target Date: Prior to the start of the FY 2020 Annual Physical Inventory

3) For future inventories, will ensure that all inventory items that should be counted appear on the count sheets with one unit of measure.

Target Date: FY 2020 Annual Physical Inventory

FOLLOW UP ON OUTSTANDING AUDIT RECOMMENDATIONS FROM PREVIOUS AUDIT

We made several observations/advisory comments/recommendations during our previous audit, and they have been closed.

INTRODUCTION

Port Authority internal auditors observed the fiscal year (FY) 2019 Annual Physical Inventory (Inventory). The Inventory is coordinated by Purchasing and Materials Maňagement Department personnel. Its purpose is to ensure that the on-hand quantity for each inventory item is accurately recorded in the PeopleSoft system so that transit operations are supported by having materials and supplies available when needed. This Inventory was performed from March 1, 2019 to March 3, 2019. For FY 2019, material and supply expenditures were approximately \$20.6 million or 4.8% of total expenses of \$430.4 million (note: total expenses per the audited financial statements as of June 30, 2018).

OBJECTIVES, SCOPE AND METHODOLOGY

The audit objectives were to determine the adequacy of internal controls for the Inventory and to determine if:

- · Inventory items were accurately counted,
- Dollar variances of at least \$250.00 (\$150.00 at the garage inventory locations) and a quantity variance of at least 10 percent were resolved and recorded correctly in PeopleSoft,
- Adjustments to on-hand quantities were properly recorded in PeopleSoft, and
- The cut-off process was properly followed for requisitions and receipts issued before and after Inventory. The cut-off is the time at which system processing of receipts and requisitions is suspended in PeopleSoft. The purpose of the cut-off testing is to determine if:
 - Items that were physically received and placed in stock prior to the start of counting were included in PeopleSoft's on-hand quantities,
 - Items that were physically received and not placed in stock prior to the start of counting were not included in PeopleSoft's on-hand quantities,
 - Requisitions that were filled and shipped prior to the start of counting were processed in PeopleSoft so that the on-hand quantities in the system are reduced prior to counting,
 - Items removed from stock after counting has begun (Emergency Requisitions) are added to the physical count if the item was removed from stock before it was counted,
 - Items physically received while the Inventory is in progress are held at the receiving dock instead of being placed in Inventory, and
 - Employees do not resume filling requisitions, stocking items and processing requisitions and receivers in PeopleSoft until after the Inventory is finalized and the cut-off is ended.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We observed the employees as they counted the inventory items, tested inventory counts, and the cut-off process at the Manchester, South Hills Village and South Hills Junction locations. We tested the accuracy of the inventory cut-off process by tracing a sample of requisitions and receivers to the Review Transaction History panel in PeopleSoft to ensure that they were processed in PeopleSoft at the correct time in relation to the cut-off. We also assisted in resolving variances. In addition, at these three locations and at the Ross and West Mifflin garage locations, we tested the accuracy of on-hand quantities recorded by the employees conducting the Inventory by independently counting a sample of inventory items and comparing our counts with the counts on the count sheets.

STATEMENT OF OPINION

In our opinion, the internal controls associated with PAAC's FY2019 Annual Physical Inventory at Manchester, South Hills Junction (SHJ), South Hills Village (SHV), and the garage locations (Ross and West Mifflin) are effective and the processes are generally adequate. Opportunities for improvement with the Annual Physical Inventory and internal controls over the processes are summarized in the observations and recommendations below.

STRENGTHS NOTED DURING THE AUDIT

Strengths noted during the audit included the following:

- The cut-off processes were well controlled during the FY2019 Annual Physical Inventory. In general, the requisitions and receipts reviewed as part of the inventory cutoff testing were processed according to the cut-off instructions.
- 2) Prior to the start of FY2019 Inventory, the Manager, Purchasing Materials worked with the Manager of Inventory Operations & Distribution who coordinated with applicable supervisory personnel at the locations to identify items with more than one bin location and to review and adequately resolve the items.
- 3) In general, the overflow stock notices were effectively used and typically placed for items with overflow stock at both the default bin location and the excess inventory location and were helpful in identifying items with overflow stock.

RESULTS OF TEST COUNTS

Based on our statistically valid sample and a margin of error of plus or minus 4%, we are 95% confident that the true accuracy rate of item counts in the population is between 86.4% and 94.4%.

Using attribute sampling for a population size of 13,011 items with an average cost of at least \$2.00, a statistically valid sample of 157 items was selected for testing. Internal Audit Department

personnel counted each item in the sample and compared our count to the count recorded on the count sheets. Any discrepancies were resolved by having storeroom personnel recount item count discrepancies. We noted 15 errors and 142 items counted correctly by the inventory count crew, an overall accuracy rate of 90%.

Location	Number of Items with an Average Cost of at Least \$2	Number of Test Counts	Number of Count Discrepancies	Number of Accurate Counts	Percentage of Accurate Counts
Manchester	9,367	112	13	99	88%
South Hills Junction	1,775	22	1	21	95%
South Hills Village	<u>1,869</u>	23	1	22	96%
Totals	<u>13,011</u>	<u>157</u>	<u>15</u>	<u>142</u>	90%

Summary of Systematically Selected Test Counts

Of these 157 test counts, 147 items had a unit of measure of "each" and 10 items had a unit of measure of something other than "each" such as "case," "set," "foot," "kit," "roll," or "spool," etc.

We determined that 142 items with a unit of measure of each and other than each were counted correctly and 15 items were incorrectly counted by the inventory count crews, an accuracy rate of 90%. For the 147 items with a unit of measure of "each," 133 items were counted correctly and 14 items were incorrectly counted by the inventory count crew, an accuracy rate of 90%. For the 10 items with a unit of measure of other than "each" such as "case," "set," "foot," "kit," "roll," or "spool," etc., 9 items were counted correctly and 1 item was incorrectly counted by the inventory count crew, an accuracy rate of 90%.

Location	Number of Test Counts	Number of Count Discrepancies	Number of Accurate Counts	Percentage of Accurate Counts
Manchester	102	4	98	96%
South Hills Junction	50	5	45	90%
South Hills Village	50	0	50	100%
Ross	50	1	49	98%
West Mifflin	<u>50</u>	4	<u>46</u>	92%
Totals	<u>302</u>	<u>14</u>	<u>288</u>	<u>95%</u>

Summary of Judgmentally Selected Test Counts

In addition to the systematically selected test counts from our sample, we judgmentally selected and counted 302 Inventory items, 271 items had a unit of measure of "each" and 31 items contained a unit of measure of something "other than each," such as "case," "set," "foot," "kit," "roll," or "spool," etc.

We determined that 288 items with a unit of measure of each and other than each were counted correctly and 14 items were incorrectly counted by the inventory count crews, an accuracy rate of 95%. For the 271 items with a unit of measure of "each," 258 items were counted correctly and 13 items were incorrectly counted by the inventory count crew, an accuracy rate of 95%. For the 31 items with a unit of measure of "other than each," 30 items were counted correctly and 1 item was incorrectly counted by the inventory count crew, an accuracy rate of 97%.

Note that the accuracy rates discussed above estimate the accuracy of the counts that are made by the inventory count crews. This accuracy rate should not be compared with the Purchasing and Materials Management Department's estimate of the accuracy rate at which the on-hand quantities of inventory items are maintained in PeopleSoft's records.¹

¹ Purchasing and Materials Management Department staff calculates their accuracy rate, which is reported on the Recap of Inventory Results – FY 2019 Inventory Accuracy report, for items with an average cost of at least \$2.00 by dividing the number of items with no variances and the number of items with minor variances as determined by the Purchasing and Materials Management Department staff, by the total number of items with an average cost of at least \$2.00. The Purchasing and Materials Management Department staff, by the total number of items with an average cost of at least \$2.00. The Purchasing and Materials Management Department staff defines a minor variance for the Manchester, South Hills Village and South Hills Junction warehouses locations as one that is less than \$250.00 in value and 10% in quantity. For the garage locations, a minor variance is defined as one that is less than \$150.00 in value and 10% in quantity.

OBSERVATIONS AND RECOMMENDATIONS

OBSERVATION 1 - BUSINESS PROCESSES RELATED TO SPARE ENGINES REQUIRE IMPROVEMENT (STORAGE, TRACKING/MOVEMENT AND QUANTITY/PERCENTAGE)

Observation 1a - Spare Engine - Storage

During the FY 2019 Annual Physical Inventory, Internal Audit Department personnel observed 33 new spare engines stored in the Treasury Room at Manchester. These engines were purchased during the procurement of transit coaches and part of the major components package as detailed in several bus procurement agreements/change orders. The Manager, Inventory Operations & Distribution stated that these engines had recently been moved to Manchester and that Port Authority management had decided to consolidate the physical storage location of these major component parts (new spare engines) and compiled a comprehensive list of these engines to better control their tracking/movement.

Internal Audit observed that these new spare engines were in various stages of long-term storage (not covered or partially or completely sealed in plastic) with most of the engines appearing to be stored as recommended by the manufacturer's service manual, "Preparing Spare or Rebuilt Engine for Long-Term Storage."

Internal Audit judgmentally selected 13 new spare engines on the Engine Inventory List provided by the Manager, Inventory Operations & Distribution and traced them by serial # and stock # to the actual spare engines in the Treasury Room. Of the 13 spare engines selected, 10 spare engines appeared to be stored as recommended by the manufacturer's long-term storage guidelines as noted in the service manual (sealed in plastic). However, three spare engines were not stored as recommended by they were only partially sealed (with clean care caps), potentially exposing the engines to moisture and dirt. These engines are identified below.

Built Year	Stock #	Serial #
2018	425002	74305662
2018	425002	74301903
2018	425002	74305764

As a result of Internal Audit discussing the manufacturer's recommended long-term storage guidelines, the Manager, Inventory Operations & Distribution stated the process has begun to prepare all new spare engines for long-term storage by sealing them in plastic.

Internal Audit discussed the rebuilt engines (internally rebuilt by Port Authority personnel) with the Vehicle Project Coordinator and the Manager – Maintenance & Service, and they stated that there are 14 internally rebuilt engines available for future use. They also stated that these engines are stored in various stages of long-term storage throughout Manchester and are not being stored as recommended by the manufacturer's service manual, "Preparing Spare or Rebuilt Engine for Long-Term Storage" because some of them are not sealed in plastic.

Business Impact 1a – Spare Engine – Storage

If Port Authority fails to store the major component parts (new spare engines) as recommended in the manufacturer's service manual, any failures resulting from improper long-term storage practices may result in these engines not being warrantable by the manufacturer and/or potentially a shortened useful life, which may cause increased expense to Port Authority.

Recommendation 1a – Spare Engine – Storage

Internal Audit recommends that major component parts (engines) be stored in accordance with the manufacturer's service manual, which advises that spare engines and rebuilt engines be prepared for long-term storage as follows:

- Apply a lightweight lubricant or rust preventative to machined surfaces that are not painted.
- Apply a lightweight lubricant or rust preventative to any internal cast surfaces, such as coolant inlet and outlet connections, that are visible and not painted.
- Cover engine and component openings with clean care caps or heavy paper and tape to prevent dirt and moisture from entering engine.
- Remove all external drive belts.
- Install appropriate desiccant on engine to absorb any moisture.
- Cover entire engine with plastic.
- Move engine or equipment to an appropriate storage area.
- Storage area must be dry with uniform temperature.
 - Recommended storage temperature is between -12°C [10°F] and 49°C [120°F], with relative humidity less than 60 percent.

Note that generally, these steps only apply to engines that are received directly from the manufacturer's assembly plant or a master rebuild center.

Internal Audit Department recommends that appropriate management follow up with the manufacturer to ensure these above steps are the current long-term storage guidelines and, if there are any changes, notify appropriate Port Authority personnel responsible for storing the engines of the changes and modify Port Authority long-term storage practices with the latest guidelines established by the manufacturer.

In addition, Internal Audit recommends that rebuilt engines be physically stored and relocated in an area that assists in complying with the manufacturer's recommended long-term storage guidelines and stored similarly to the new spares. The Purchasing and Materials Management Department personnel should ensure that these spare (new/rebuilt) engines continue to be stored/maintained as recommended by the manufacturer's long-term storage guidelines.

Management Response 1a – Spare Engine – Storage

Management concurs with the recommendation and appropriate management/maintenance personnel will ensure:

- Engines will be stored in accordance with the manufacturer's service manual guidelines,
- Appropriate management personnel will follow up with the manufacturer to determine the current long-term storage guidelines and notify appropriate Port Authority personnel responsible for storing the engines of the long-term storage practices with the latest guidelines established by the manufacturer, and
- Rebuilt engines will physically be stored and relocated in an area that assists in complying with the manufacturer's recommended long-term storage guidelines, and stored similarly to the new spares. In addition, the Purchasing and Materials Management Department personnel will ensure that these spare (new/rebuilt) engines continue to be stored/maintained as recommended by the manufacturer's long-term storage guidelines.

Target Date: Implemented

Observation 1b – Spare Engine – Tracking/Movement and Quantity/Percentage

Tracking/Movement

Internal Audit determined that Port Authority purchased 31 spare engines from one manufacturer through the initial agreement and subsequent change orders related to RFP4000. Of the 31 spares engines:

- 7 new spare engines (year built 2011 & 2012) were utilized (VOH/maintenance) and tracked through the PeopleSoft and the Work Order System,
- 23 new spare engines (year built 2014, 2015 & 2016) are available for use in future vehicle overhauls (VOHs), and
- 1 new spare engine (year built 2012) was unaccounted for in the PeopleSoft and the Work Order System (Serial #73418203).

Internal Audit also determined that Port Authority purchased 11 spare engines from a second manufacturer through the initial agreement and change orders related to RFP4000. Of the 11 spare engines:

- 10 new spare engines (year built 2011 & 2013) were utilized (VOH/maintenance) and tracked through the PeopleSoft and the Work Order System, and
- 1 new spare engine was unaccounted for in the PeopleSoft and the Work Order System (Serial #73338518).

The Vehicle Project Coordinator and Manager – Maintenance & Service, stated that information regarding the two unaccounted for new spare engines may not have been recorded in the current

Work Order System to include information regarding when the engines were used during a vehicle overhaul (VOH).

Quantity/Percentage

Internal Audit discussed with Operations and Purchasing and Materials Management personnel the major component package (quantity/percentage of spare engines) purchased during the initial procurement of transit coaches and subsequent change orders. They stated that a 10% spare ratio of major components (engines) to the number of transit coaches purchased was historically the quantity/percentage procured. They also stated that this quantity/percentage purchased is determined by the user department to ensure that Port Authority has sufficient number of spare engines available when needed.

They further stated that another reason for purchasing a 10% new spare engines ratio is that it is difficult to purchase spare engines after a bus procurement because of the periodic changes in Environmental Protection Agency (EPA) emission standards on the production of new, certified engines. Purchasing new spare engines ensures that Port Authority has available engines when needed. The EPA laws/regulations only permit the manufacturer to produce a new engine that meets a particular emissions requirement for a certain period of time. Engines are certified to meet the parameters for a given year(s) dependent solely on the regulation in effect at the time.

Internal Audit reviewed RFP 4000 and 5000 Procurement of Transit Coaches Agreements and subsequent change orders and determined that, in general, Port Authority purchased an average 10% spare ratio of major component parts (engines) to total number of transit coaches procured.

The Vehicle Project Coordinator and the Manager – Maintenance & Service provided spare engine usage information from various sources (PeopleSoft, Work Orders, Agreements and subsequent change orders); however, there was:

- Limited documentation to support that management/maintenance personnel performed an on-going analysis of the data to determine that the appropriate quantity/percentage of new spare engines was purchased during a procurement of transit coaches, and
- No documented process related to the analysis of new spare engine usage to determine if an appropriate quantity/percentage of engines was purchased.

Business Impact 1b – Spare Engine – Tracking/Movement and Quantity/Percentage

If the purchase of major component parts (engines) and usage information is not analyzed, there is a risk that Port Authority may not have an adequate supply available potentially resulting in a disruption of service, or may have a surplus of engines potentially resulting in an increased cost to Port Authority.

Recommendation 1b – Spare Engine – Tracking/Movement and Quantity/Percentage

Internal Audit is cognizant of the fact that Port Authority is potentially transitioning to a new Maintenance Work Order System (MWOS) to be utilized for daily operations (to include tracking of

maintenance, VOH, etc.) that will affect the manner in which Port Authority tracks spare engines and vehicle maintenance.

In the event that Port Authority continues to track spare engines in the same manner as in previous years, we recommend the following going forward:

- Appropriate operation/maintenance personnel should accurately record the usage information of spare engines in PeopleSoft and the Work Order System.
- Appropriate management/maintenance personnel should analyze engine usage information and determine a reasonable quantity/percentage of major component parts (engines) as guidance for future purchases and document the results.
- Appropriate management/maintenance personnel should develop and document processes related to determining a reasonable quantity/percentage of major component parts (engines) that should be purchased.

This process/procedure should consider (but not be limited to) the following:

- Identifying, informing and instructing appropriate personnel responsible for collecting the spare engine information (tracking/movement, quantity purchased, usage of spare and rebuilt engines, etc.), recording it in PeopleSoft and the Work Order System and ensuring they are aware of the essential information needed for management's analysis and decision-making processes.
- Monitoring and analyzing the information by appropriate management personnel ensuring data collected and recorded is accurate for the tracking and usage of spare and rebuilt engines. In addition, appropriate management should ensure that there is sufficient information collected and recorded to permit calculating a reasonable spare ratio percentage for future spare engine purchases.

Management Response 1b – Spare Engine – Tracking/Movement and Quantity/Percentage

Management concurs with the recommendation and going forward:

• Appropriate operation/maintenance personnel will accurately record the usage information of spare engines in PeopleSoft and the Work Order System.

Target Date: Implemented

• Appropriate management/maintenance personnel will analyze engine usage information and determine a reasonable quantity/percentage of major component parts (engines) as guidance for future purchases and document the results.

Target Date: November 1, 2019

• Appropriate management/maintenance personnel will develop and document processes related to determining a reasonable quantity/percentage of major component parts (engines) that should be purchased.

Target Date: November 1, 2019

This process/procedure will consider (but not be limited to) the following:

- Identifying, informing and instructing appropriate personnel responsible for collecting the spare engine information (tracking/movement, quantity purchased, usage of spare and rebuilt engines, etc.), recording it in PeopleSoft and the Work Order System and ensuring they are aware of the essential information needed for management's analysis and decision-making processes.
- Monitoring and analyzing the information by appropriate management personnel ensuring data collected and recorded is accurate for the tracking and usage of spare and rebuilt engines. In addition, appropriate management will ensure that there is sufficient information collected and recorded to permit calculating a reasonable spare ratio percentage for future spare engine purchases.

Target Date: December 31, 2019

OBSERVATION 2 – SOME INVENTORY ITEMS WITH AN AVERAGE COST OF AT LEAST \$2.00 EXCLUDED FROM THE COUNT SHEETS

When reconciling the number of items in inventory (at Manchester and Ross), we noted differences between the number of inventory items listed on the PeopleSoft query generated by Manager, Purchasing Materials and the number of items appearing on the inventory count sheets. The detailed list of the differences noted was provided to Manager, Purchasing Materials for review.

In reviewing the information provided by Internal Audit, the Manager, Purchasing Materials and Information Technology Services Department personnel determined that the criteria to create and detail the inventory items on the count sheets utilizes the physical location table in PeopleSoft and the criteria to create and detail the inventory items on the Purchasing and Materials Management Department personnel query utilizes the default bin location table. This resulted in 8 inventory items with an average cost of at least \$2.00 (5 items at Manchester and 3 items at Ross) not appearing on the count sheets. Note that FY 2019 material and supply expenditures were approximately \$20.6 million or 4.8% of total expenses of \$430.4 million (total expenses per the audited financial statements as of June 30, 2018) and the sum of this error for these 8 items (which equated to a total quantity on-hand of 80 pieces) totaled \$33,091. The Manager, Purchasing Materials indicated that these items may have been moved to a different location after the "no replenish" indicator in PeopleSoft was turned on causing there to be no physical location designation in PeopleSoft.

In addition, Internal Audit determined that the count sheets included 7 inventory items at Manchester with two different units of measure (each or other than each) resulting in these items being detailed on the count sheets twice. The Manager of Purchasing Materials reviewed these items and verified the correct unit of measure was detailed in PeopleSoft to help ensure that going forward they would only appear once on the count sheets.

Business Impact

If items in inventory with an average cost of at least \$2.00 are not on the count sheets, there is a risk that these items may not be counted and that inventory shortages will not be

identified for these items and/or that the items may not be available when needed for operations.

If items in inventory have more than 1 unit of measure on the count sheets, there is a risk that these items may not be accurately counted and/or the count accurately recorded in PeopleSoft and that the inventory count may be misstated.

Recommendation 2

Purchasing and Materials Management Department personnel should:

- 1) Provide necessary information to Information Technology Services Department personnel to enable them to update the process and instructions to ensure that items that should be included in inventory appear on the count sheets. This may be accomplished by developing an exception report, and prior to the annual physical inventory, running the report to identify inventory items with no physical location in PeopleSoft and should ensure these items appear on the count sheets. Going forward this exception report should be provided to Internal Audit prior to the start of the annual physical inventory
- 2) Count any items with an average cost of \$2.00 or greater that appear on the exception report and process inventory adjustments if necessary.
- 3) For future inventories, ensure that all inventory items that should be counted appear on the count sheet with one unit of measure.

Management Response 2

Purchasing and Materials Management Department concur with the recommendation and:

1) Provided the necessary information to Information Technology Services Department personnel to enable them to update the process and instructions to ensure that items that should be included in inventory appear on the count sheets. An exception report was developed and will be run prior to performing the annual physical inventory. This report may identify inventory items with no physical location in PeopleSoft and will help ensure these items appear on the count sheets. Going forward this exception report will be provided to Internal Audit prior to the start of the annual physical inventory.

Target Date: Prior to the start of the FY 2020 Annual Physical Inventory

2) Will count any items with an average cost of \$2.00 or greater that appeared on the exception report and process inventory adjustments if necessary.

Target Date: Prior to the start of the FY 2020 Annual Physical Inventory

3) For future inventories, will ensure that all inventory items that should be counted appear on the count sheets with one unit of measure.

Target Date: FY 2020 Annual Physical Inventory

FOLLOW UP ON OUTSTANDING AUDIT RECOMMENDATIONS FROM PREVIOUS AUDIT

We made several observations/advisory comments/recommendations during our previous audit, and they have been closed.

ACKNOWLEDGEMENTS

Members of the Internal Audit Department thank Tony Trona, Director of Purchasing and Materials Management; Justin Cava, Manager, Purchasing Materials; Mike Musillo, Manager, Inventory Operations & Distribution; Bernie Faccenda, Assistant Manager, Inventory; Tom Kaczmarski, Stores Supervisor–FL; Tim Bell, Stores Supervisor-Rails; Jason Lamb, Garage Foreman; Robert Kalin, Stores Afternoon Supervisor; inventory counters; data entry clerks, Don Rivetti, Deputy Chief Operations Officer – Maintenance, Liz Moscak-Fazio, Vehicle Project Coordinator, and Dave DeAngelis, Manager – Maintenance & Service for their cooperation and assistance during this audit.

Participating auditors were Maria Nickerson, Marsha McCall, Glenn Meister and Neil Caponi.

Maria nicherson

September 27, 2019

Maria Nickerson, Director, Internal Audit Department

Date

Disclaimer:

This report is intended solely for the information and use of Port Authority management for decisionmaking purposes. It is not intended for use by any other party.

ATTACHMENT A - SAMPLING METHODOLOGY

To accomplish the audit objectives, Internal Audit Department personnel (IA) determined the population, developed sampling methodology and performed statistical and judgmental test counts as follows:

Statistical Test Counts

- 1) Obtained and reviewed the final listing, Warehouse-Active Items query/report, of the entire population of inventory items that was provided by the Manager of Purchasing Materials for Manchester, SHJ, and SHV.
- 2) Ran the PAG_WAREHOUSE_ACTIVE report in PeopleSoft to verify the integrity of the final listing, Warehouse-Active Items query/report, of inventory items data provided by the Manager of Purchasing Materials to determine if the population on IA's report agreed with the Manager of Purchasing Materials report.
- 3) Ran the PAG_WAREHOUSE_ACTIVE report for the statistical test count to determine the actual population size (number of inventory items) with a unit price of at least \$2.00.
- 4) Utilized a sample size calculator to define the sample size with a confidence level of 95%, an expected error rate not over 9% and a precision percentage of plus or minus 4% to determine the total number of statistical test counts to be performed for Manchester, SHJ and SHV.
 - a) Note that the accuracy rates discussed in the audit report estimated the accuracy of the counts that are made by the inventory count crews. This accuracy rate should not be compared with the Purchasing and Materials Management Department's estimate of the accuracy rate at which the on-hand quantities of inventory items are maintained in PeopleSoft's records.
- 5) Calculated a uniform interval by dividing the number of inventory items in the population by the total sample size for Manchester, SHV, and SHJ. Inventory items were selected systematically throughout the population at the uniform interval.
- 6) Calculated the percentage of the number of items to be sampled to the total number of items in the population by dividing the total number of items to sample by the total number of items with unit prices of at least \$2.00 at all three of these locations (Manchester, SHV, and SHJ).
- 7) Calculated the number of separate test counts for Manchester, SHJ and SHV by multiplying the percentage to total number of items calculated for each location by the total number of items with a unit price of at least \$2.00 for each of three of these locations.
- 8) Systematically selected test counts by selecting a random number as a starting point for Manchester, SHJ, and SHV locations at every nth interval (as calculated in 5) above). The interval represents the nth item that will be selected for our sample. Note: The random start point selected was 1.

- No statistical test counts were performed at the 4 garage locations (Ross, West Mifflin, Collier and East Liberty).
- 10) Used the PeopleSoft reporting tool, Random Item Sampling (PAG_RUN_INP5052), the software selected the items for testing. This report was generated for each of the three locations (Manchester, SHV, and SHJ) and it detailed the randomly selected test count items that IA used to count/examine during the inventory.
- 11) The results of statistical test counts were extrapolated over the entire population of inventory items with unit prices of at least \$2.00 as this sampling method gives each element (inventory item) in the population an equal opportunity of being selected.

Judgmental Test Counts

- Completed Inventory Checking Reports (aka Judgmental Test Count Sheets) when observing the annual physical inventory. IA judgmentally selected inventory items to trace from the crews' count sheets to item bin locations and from the item bin locations to crews' count sheets.
 - a) The Inventory Checking Reports were used to trace inventory items from the crews' count sheets to the item bin locations and verify that the accuracy of the item counted. IA judgmentally selects 90 items for Manchester, 40 items for SHJ, 40 items for SHV, and 50 items at two garage locations (Ross and West Mifflin). The garage locations alternate each annual physical inventory.
 - b) The Inventory Checking Report was also used to document selected inventory items from item bin locations to the crews' count sheets and verify the accuracy of the item counted. IA judgmentally selects 10 items each at Manchester, SHJ and SHV. This reverse judgmental test count is not performed at the 4 garage locations (Ross, West Mifflin, Collier and East Liberty).
- Judgmentally chose numerous inventory items on the crews' inventory count sheets to test for accuracy. IA counted these items and determined if IA's count agreed with the quantities entered on the crews' count sheets.
- 3) Judgmentally counted a sample of inventory items at Manchester, SHJ, and SHV to determine if these items appeared on the count sheets and determined the accuracy of the counts.
- 4) In determining inventory items to judgmentally select to count, IA considered the unit of measure of "each" and "other than each" for the inventory items. IA also considered inventory items with larger quantities and items that were physically difficult to access (i.e., heavy items, hard-to-reach items).
- 5) If errors/discrepancies were detected, IA requested management confirm the accuracy of the item count. If a significant number of errors were noted, IA would discuss the number of errors with applicable management personnel and determine if recounts of items and/or sections of the storeroom or additional judgmental test counting would be performed.

- 6) If inventory items counted by IA did not appear on the count sheets, IA determined and documented the reason(s) for these items not appearing on the count sheets. In addition, if necessary, IA performed additional testing to determine if inventory items were properly included on the count sheets.
- 7) Determined if inventory item count corrections were reported to appropriate personnel so that the most accurate count was entered into the PeopleSoft inventory system.
- 8) The results of judgmental test counts were not extrapolated over the entire population of inventory items with unit prices of at least \$2.00 as this sampling method is a purposeful method where no randomization is used to eliminate any bias and inventory items in the population did not have an equal opportunity of being selected.

ATTACHMENT B - BUSINESS PROCESS

PHYSICAL INVENTORY PROCESS

Physical inventories are performed at all inventory locations on an annual basis. Items with an average unit price of at least \$2.00 are counted as part of the annual physical inventory. Inventory items are identified with a six-digit inventory number, a description, a unit of measure, and a specific bin location. Counts of inventory items with an average unit price less than \$2.00 are only performed if the inventory quantities in stock obviously differ from the inventory quantities in PeopleSoft as noted on the count sheets. Inventory items that have not moved for an extended period of time are sometimes pre-counted. Inventory count sheets are assigned to count crews or individual counters and Purchasing and Materials Management Department personnel verify that, upon completion, these sheets are accounted for and that counts are present for all items that require them. The count information is entered into PeopleSoft, and a report of all significant inventory variances is generated. Significant variances (greater than 10% in quantity or more than \$250.00 (\$150.00 at the garage inventory locations)) are recounted for accuracy, and adjustments to the original count are processed in PeopleSoft. Inventory items, which have not been counted, appear on the Missing Tag ID report, and all items on this report require that an item count be entered into the PeopleSoft in order to clear the item from the report.

The Manager of Purchasing Materials and the Manager, Inventory Operations & Distribution oversee the physical inventory to verify procedures are properly followed, material is properly counted, and questions related to specific items are resolved. At PAAC's inventory locations, the Manager, Inventory Operations & Distribution and Foremen/Supervisors review the inventory procedures and instructions with the inventory counters prior to the start of the actual annual physical inventory. Designated employees input the item counts into PeopleSoft.

The Internal Audit Department personnel review the inventory documentation (requisitions, receipts, emergency requisitions, count sheets, etc.) to determine if cut-off procedures have been followed, determine if inventory procedures are followed, and perform test counts based on both a statistically valid sample of inventory items and judgmentally selected inventory items to determine if counts on the inventory sheets are accurate. Internal Audit's identified test count differences are recounted by Internal Audit and appropriate personnel and the correct item count confirmed. Adjustments are recorded on IA's Inventory Checking Reports (aka Judgmental Test Count Sheets) or Statistical Count Sheet and the corrected counts are entered into PeopleSoft.

PUTAWAY PROCESS

When an inventory item arrives at the receiving dock, the receiver takes possession of it and enters the item information (item description, vendor, quantity, stock #, etc.) into PeopleSoft, which then stages the batch of items that are to be placed into the inventory. The stockperson then places the items into the correct bin in inventory. At the Manchester and SHJ locations, the Storeroom Supervisor runs a process called "Complete Putaway" which increases the on-hand quantities for all items that are in the staged batch status. At the SHJ location, the "Complete Putaway" process is done at the time of receiving the item. At the SHV location, the "Complete Putaway" process is run automatically as part of the receiving process.

DEPLETION PROCESS

When an item needs to be removed from inventory, the employee who needs the item initiates the process by submitting a material stock requested in PeopleSoft. PeopleSoft includes this item on its pick list, which is generated nightly. After the item has been picked from the shelf, the Storeroom Supervisor/Garage Foreman/Receiver provides feedback to PeopleSoft to update the system that the item is no longer in inventory. At SHV, a batch process runs every half hour to look for new material stock requests, and a Pick Sheet prints at the stockperson's printer. The stockperson then fulfills the order and closes the order in the system by performing the "Material Picking Feedback" process, which confirms, ships and depletes the items that have been fulfilled. At all locations the depletion process is run nightly to automatically reduce on-hand quantities for which feedback has been entered into PeopleSoft.

WORK ORDER SYSTEM

Port Authority has an operational work order system. The documentation obtained from the current work order system is based on the information entered into the Work Order System by appropriate PAAC personnel.

DOCUMENTATION OF PROCESS FOR RECORDING INVENTORY ADJUSTMENTS

Inventory adjustments are recorded based on the results of annual physical inventories and periodic cycle counts. In addition, if inventory items are determined to be obsolete, the obsolete inventory is sold or scrapped and the inventory quantities are reduced within the system.

Cycle counts are periodically performed by receivers at the operating locations. At the bus garage operating locations, if the cycle count is greater than the quantity in the system, an inventory adjustment is processed. Conversely, if the cycle count is less than the quantity in PeopleSoft, a requisition is completed for the missing item(s) and the quantity difference is charged to the applicable garage and classified as inventory usage or consumption. Logs are maintained at each of the operating locations to record items removed from parts rooms if receivers are not on duty.

The Manager of Purchasing Materials, the Manager of Inventory Operations & Distribution, the Assistant Manager – Inventory and appropriate Storeroom Supervisors/Garage Foreman have access to inventory item information, inventory reports, and to the history of inventory purchases, consumption and adjustments.

SCRAP PROCESS AND METHOD UTILIZED TO IDENTIFY, CHARGE-OFF AND DISPOSE OF

PAAC implemented the following Materials Scrap Process:

- Fleet Approaching Retirement
 - o Min/Max Adjusted at Division Parts Rooms and Central Stores (140CS)
 - o Excess sent back (Pink Slipped) to Central Stores (140CS)

- Bus Fleet Retired
 - Fleet no longer in Revenue Service off property
- Identify Obsolete Parts
 - Determine if parts from retired fleet can be used on other existing Port Authority fleets
 - o Return items to Vendors, if possible
 - o Try to sell to other Transit Agencies and through an Auction Site
- Finalize Obsolete List
 - Manager Purchasing Materials compiles and approves final list of items to be scrapped
 - o Items set to No-Replenish
 - o Comments updated
- Scrap List sent to Central Stores Supervisor and Assistant Manager of Inventory
 - o Items are to be physically removed from Bin
 - o Bin label is removed
 - o Bin quantity is depleted in PeopleSoft
 - o Item Bin Location is transferred in PeopleSoft to the NONE Bin
 - Once process is complete, Storeroom personnel are to notify the Manager of Purchasing Materials
- Scrap Process Completed at Warehouse/Parts Rooms
 - Manager of Purchasing verifies the following:
 - Items Quantity has been depleted
 - Item is in the NONE Bin
- Inactivation Process
 - Manager of Purchasing Materials or Inventory Analyst will make items inactive in PeopleSoft.
 - Inactive Part at Business Unit (Ex. 140CS, 010RO)
 - Inactive Part at Global Level

*Inactive Item Status = Item can no longer be requested through replenishment or manual parts requests (MSR).

o Run Change Item Status Report and check for errors.

EMPLOYEE ACCESS IN PEOPLESOFT TO ADD, DELETE AND MODIFY INVENTORY INFORMATION

Access to add, delete and modify inventory information in PeopleSoft is available to the Manager of Purchasing Materials, the Assistant Manager – Inventory, the Manager, Inventory Operations & Distribution, and the Storeroom Foremen/Garage Foreman. The Manager of Purchasing Materials,

the Assistant Manager – Inventory and the Manager, Inventory Operations & Distribution currently have the ability to adjust inventory quantities and/or adjust unit prices of items in inventory.

All authorizations for access to PeopleSoft must be approved by the manager of the applicable department and must be processed by the security administrator. The security features are rolebased and define a role, which is tied to the job title. Prior to utilizing PeopleSoft to add, delete or modify data, users must attend the required PeopleSoft training.

REPORTS TO MONITOR, PROCESS AND ACCOUNT FOR INVENTORY USAGE & ADJUSTMENTS

Reports are available to monitor the inventory process and to account for inventory usage/adjustments, which include Daily Activity Report (INP7050), Inventory Activity Report (INP7051), Missing Tag ID reports, Physical Account Reconciliation Reports, requisition and receipts reports and other reports that provide inventory statistics, values, and adjustment histories.

POLICIES AND PROCEDURES

Policies and procedures related to conducting the annual physical inventory exist (written and verbal). There is currently a procedure related to proper segregation of duties. Generally, this procedure provides that the purchaser cannot enter receiving data or enter new vendors in PeopleSoft; however, there are some limited exceptions to this for employees in the Purchasing and Materials Management Department. A training manual is available to guide employees on using PeopleSoft to complete inventory transactions such as receiving and issuing stock items, creating bin locations, and transferring items between locations.