2007-A08

Metropolitan Council

Program Evaluation and Audit

Metro Transit
Physical Inventories Review

Central Stores
Brake Shop
LRT Facility

May 25, 2007

INTRODUCTION

Background

To ensure timely, cost-effective maintenance for Metro Transit vehicles, many of the most commonly used parts and equipment are kept on hand at one of the Transit stock rooms. Keeping the items on site is valuable, but also increases the risk of misappropriation or theft. As a result, the stock rooms have been viewed by Metro Transit and Program Evaluation and Audit as relatively high risk. To that end, Audit annually reviews 1 to 3 of the stock rooms for procedural compliance, accuracy of records, and identification of any missing items.

The TXbase System, implemented in 1995-96, consists of interactive computer software designed to provide an integrated inventory control, inventory management, purchase order management, materials requisition management and accounts payable matching system. Since implementation, eleven stockrooms have been established to control and account for parts and supplies used in Metro Transit operations.

In April 2004, Program Evaluation and Audit (Audit) performed an audit of all eleven Metro Transit stockrooms. This was the first time the Body Shop and Radio Shop stockrooms located at the Overhaul Base were audited and they showed the greatest number of errors and risk of loss of Council assets. The other stockrooms had only minor findings, if any. As a result, a follow-up audit of Body Shop and Radio Shop inventories was performed in July 2005, and with similar results.

A second follow-up audit of Body Shop and Radio Shop inventories was performed in July 2006, this time with improved results. Audit observed that Metro Transit had established adequate internal control over Body Shop and Radio Shop inventories although Audit did recommend that Radio Shop internal controls could be strengthened by improving documentation when parts are removed from retired and damaged buses.

Assurances

This review was conducted in conformance with Government Auditing Standards and the Standards of the Institute of Internal Auditors. Findings are reported to auditee senior management, the Regional Administrator and the Audit Committee of the Council.

Scope

The present inventory audits were conducted at Central Stores, the Brake Shop and HLRT stock rooms, which were identified as the highest risk areas outside of the Body Shop and Radio Shop, which have been recently reviewed.

Methodology

After eliminating inventory items with zero extended costs, Audit selected a statistically significant, random sample with a 95% level of confidence and a 5% error rate. Then Audit physically counted randomly selected inventory items and compared that count to

the quantity stated in the TX base inventory system. Universe and sample stratification data based on average unit cost is as follows for all three stockrooms.

Central Stores

Average Unit Cost	Size of Universe	Size of Sample	Value of Universe	Value of Sample
$0 to $100	9,650	72	$2,558,697	$17,553
$101 to $500	1,329	69	1,732,571	74,493
$501 and above	375	61	2,132,733	145,236
Total	**11,354**	**202**	**$6,424,001**	**$237,282**

Brake Shop

Average Unit Cost	Size of Universe	Size of Sample	Value of Universe	Value of Sample
$0 to $50	898	68	$90,528	$ 1,897
$51 to $100	72	36	61,234	33,959
$101 and above	45	28	73,158	25,094
Total	**1,015**	**132**	**$224,920**	**$60,950**

HLRT Shop

Average Unit Cost	Size of Universe	Size of Sample	Value of Universe	Value of Sample
$0 to $1,000	3,484	71	$2,402,605	$ 4,637
$1,001 to $10,000	266	57	2,662,975	302,475
$10,000 and above	21	16	1,056,031	796,737
Total	**3,771**	**144**	**$6,121,611**	**$1,103,849**

1. Those items that could be located were physically counted and compared to the TX base inventory quantity.
2. Differences were noted and discussed with on-duty personnel.
3. Findings and results were recorded and summarized.
4. The status of implementation of prior audit recommendations was reviewed.

OBSERVATIONS

On April 10, 2007 physical inventory counts were performed at Central Stores and Brake Shop stockrooms located at the Overhaul Base. On April 11, 2007 a similar count of physical inventory was conducted at the HLRT facility. The following observations were made:

Central Stores

Audit sampled 202 items valued at $237,282, finding 4 shortages totaling $134 worth of inventory and 10 overages with a cumulative value of $2,009, representing .06% and .85% of sampled inventory value, respectively. The net result for all 14 variances is an overage of $1,875. One item resulted in an overage of $541 due to it being stored in two different locations on the carousel. Another item resulted in an overage of $40 due to an initial December 2004 entry deleting some of the items that were actually in inventory. Extrapolating this sample to the $6,424,001 total inventory held in Central Stores, Audit estimates a net overage of $51,896.

Brake Shop

Audit sampled 132 items valued at $60,950, finding 43 shortages for $15,935 and 15 overages for $647 representing 26.14% and 1.06% of sampled inventory value, respectively. The net result for all 58 variances is a shortage of $15,288. Extrapolating this sample to the $224,920 total inventory held by the Brake Shop, Audit estimates a net shortage of $62,071.

The Brake Shop stock room is not secure. There is an open back entrance "secured" only by a few strips of yellow police tape. Employees have open access to this inventory any time of day or night. In addition, there is but a single weekday first shift stock keeper assigned to the brake shop and when he is not working, there is no one to take care of his duties including issuing and taking in inventory and properly accounting for such transactions.

Eighty-nine percent (89%) of the total Brake Shop inventory shortage was due to brake linings, shoes and chambers that could not be located. It appears that an entire pallet of Gillig rear break linings is missing. Those linings, shoes and chambers that were located were very difficult to find, as were many other items throughout the Brake Shop stock room.

TX base originally indicated 79 rear brake chambers; however, this was changed to 49 after the stock keeper attempted to reconcile the number on hand with what was recorded in TX base. The additional 30 chambers would represent an additional $1,804 shortage had this adjustment not been made. Even with this adjustment, Audit counted 41 units, eight short of the revised inventory number.

General shop supplies are located next to bins of controlled inventory. According to the stock clerk, these supplies are expensed when received rather than being included in inventory; however, the items included in this sample were all included in the TX base inventory report. These items are ordered when a periodic visual assessment of quantity determines that they are in low supply.

LRT Facility

Audit sampled 144 items valued at $1,103,849, finding 13 shortages for $11,011 and 9 overages for $99,903 representing 1.00% and 9.05% of sampled inventory value, respectively. The net result for all 22 variances is an overage of $88,892. Extrapolating this sample to the $6,121,611 total inventory held by the LRT Facility, Audit estimates a net overage of $620,114.

The 2d floor LRT Facility stock room is shared by Bombardier with no physical barrier to separate the inventory belonging to each party. As a result, inventory can become co-mingled increasing the risk of loss.

Points and poles stored in the yard could not be individually identified. Although Audit counted 31 points, the exact number as in TX base, they could not be individually tied to a specific inventory item listed in TX base. Poles could not be individually identified, some for stock number, some for quantity, and some for both. Audit counted 29 poles, 11 of one kind and 18 of another. TX base includes pole line items totaling 22, seven fewer than the physical count.

Fifty-four used run number signs, having been taken off trains and placed in inventory, are not included in TX base. It does not appear that these items will be used. However, whatever their status, these signs, which account for $76,488 (77%) of the LRT Facility overage, should be accounted for appropriately.

Generally inventory items are identified by aisle-row-bin locations. A substantial number of LRT Facility inventory items are identified as "N-E-W." These items, including many spare parts provided by the contractor, have not been placed in easily located bins but are located primarily in large boxes awaiting conventional storage practices. "N-E-W" items are difficult to find and many require cross-referencing with additional TX base information to be located.

Shop supplies (nuts, bolts, screws, etc) at the LRT Facility are classified as inventory. These items are outside the enclosed stock rooms and available for mechanics to take when needed without any adjustment to inventory amounts. Individual items are estimated via a quick visual inspection about once a week and TX base is adjusted to reflect this estimate. If it appears that the item is below the reorder amount, additional quantities are automatically reordered. Therefore, these shop supplies will generally not reconcile to what is recorded in TX base.

In addition to the above, the following items of interest were identified:

- Some "N-E-W" crimping tools were not located. These items may be used on LRT service trucks, however, their location is unknown.
- An entire bag of 792 screws was in inventory but not recorded in TX base.
- A front designation sign ($11,880 or 11.89% of the LRT Facility total overage) was sent out for warranty repair, has come back and is in stock; however, the paperwork indicating such is lagging the physical presence of the item. As a result, TX base inventory does not include this item.
- A pantograph ($10,441 or 10.45% of the LRT Facility total overage) is used, it was on a train but is now physically in inventory. However, it is still connected to

the train electronically via its serial number in TX base. As a result, TX base includes this item as being physically on the train and not in inventory.

CONCLUSIONS

1. Central Stores – Internal controls are adequate to assure accurate inventory reporting and proper safeguarding of assets.

A gross absolute variance of less than 1% indicates that controls are in place to assure that inventory is recorded correctly and that there is little risk of loss. Controls can be tightened however by locating parts in a single location on the carousel and by correcting past administrative errors.

2. Brake Shop – Internal controls are not adequate to assure accurate inventory reporting or proper safeguarding of assets.

Brake Shop net inventory shortage of $15,288 represents one fourth of all sampled inventory. This is not acceptable. The Brake Shop stockroom is also not secure. An open back entrance is "secured" only by a few strips of yellow police tape, allowing employees to have access at any time of day or night. In addition, there is only a single weekday first shift stock keeper assigned to the brake shop. When he is not working, there is no one to take care of his duties including issuing and taking in inventory and properly accounting for such transactions.

Eighty-nine percent (89%) of the total Brake Shop inventory shortage was due to brake linings, shoes and chambers that could not be located. It also appears that an entire pallet of Gillig rear break linings is missing. In addition, those items that were located were very difficult to find.

TX base originally indicated 79 rear brake chambers; however, this was changed to 49 after the stock keeper attempted to reconcile the number on hand with what was recorded in TX base. The additional 30 chambers would represent an additional $1,804 shortage had this adjustment not been made. Even with this adjustment, Audit counted 41 units, eight short of the revised inventory number.

3. LRT Facility – Internal controls are not adequate to assure accurate inventory reporting or proper safeguarding of assets.

LRT Facility net inventory overage of $88,892 represents 8% of all sampled inventory. Although the risk of loss is low because this is an overage and not a shortage, the number and value of the variances indicates inadequate internal controls.

The 2d floor LRT stock room is shared by Bombardier with no physical barrier to separate the inventory belonging to each party, a major control weakness. In addition, although both Audit and TX base accounted for 31 points located in the yard, they could not be individually identified. Poles, also located in the yard, could neither be individually identified (some for stock number, some for quantity, and some for both) nor reconciled to TX base. Audit counted 29 poles; TX base accounted for only 22.

Fifty-four used run number signs accounting for 77% of the LRT Facility overage, having been taken off the trains and placed in inventory, are not included in TX base. In

addition, some inventory items are tools that may be used on LRT service trucks. These items were not located.

All inventories identified as "NEW" have not been placed on shelves and are primarily in large boxes awaiting shelving. These are supplies provided by the contractor. They are difficult to find and many require cross-referencing with TX base to identify their location and exactly what they are. In addition, a designation sigh (12% of total overage) returned from vendor warranty repair was physically in inventory but not in TX base. A pantograph (10% of total overage) was electronically associated with a train, not included in TX base, but physically counted as inventory.

4. Shop Supplies – Practices for accounting for shop supplies are inconsistent.

The Brake Shop and LRT Facility stock rooms account for shop supplies differently. At the Brake Shop, these items are expensed while at the LRT Facility, they are accounted for as inventory.

RECOMMENDATIONS

Program Evaluation and Audit recommendations are categorized according to the level of risk they pose for the Council. The categories are:

- **Essential** – Steps must be taken to avoid the emergence of critical risks to the Council or to add great value to the Council and its programs. Essential recommendations are tracked through the Audit Database and status is reported twice annually to the Council's Audit Committee.
- **Significant** – Adds value to programs or initiatives of the Council, but is not necessary to avoid major control risks or other critical risk exposures. Significant recommendations are also tracked with status reports to the Council's Audit Committee.
- **Considerations** – Recommendation would be beneficial, but may be subject to being set aside in favor of higher priority activities for the Council, or may require collaboration with another program area or division. Considerations are not tracked or reported. Their implementation is solely at the hands of management.
- **Verbal Recommendation** – An issue was found that bears mentioning, but is not sufficient to constitute a control risk or other repercussions to warrant inclusion in the written report. Verbal recommendations are documented in the file, but are not tracked or reported regularly.

Central Stores

1. (Consideration) Inventory personnel should consider combining items residing in duplicate locations into a single site to reduce inventory errors.

Central Stores has moved many of its inventory items to the carousel, making it easy to find and pick parts. However, some items are stored in more than one location resulting in duplicate effort, increases administrative time to account for the items and in one instance, a significant overage compared to TX base data.

Management Response: *The Carousel is designed to stock parts in many locations to maximize storage space and to balance the carousel. The carousel software keeps track of all locations and lets you pick parts from all locations. Locations are updated and maintain in PickPro. Most of the problems with picking are due to operator's errors and not the locations.*

2. (Consideration) Inventory personnel should consider reviewing administrative inventory adjustments made when the carousel was placed into service.

An item was found to have a significant quantity in excess of that recorded in TX base. Upon further review, it was disclosed that an administrative adjustment for the excess amount was made in December 2004. As a result, current TX base inventory is undercounted by the amount of this adjustment.

Management Response: *We will do some cycle counting of the carousel when the function is moved to second shift in July of this year. This will correct the parts that are off. We will also run a report of the carousel items and spot check items that have not moved in the last two years to make sure the inventory is correct.*

Brake Shop

3. (Essential) The Brake Shop stock room should be physically secured to prevent unauthorized access.

The Brake Shop stock room back entrance is "secured" only by a few strips of yellow police tape. All employees have open access to this inventory at any time.

Management Response: *I have ordered the gate and the door closed. Mechanics will be served via the half door on the Brake Shop side. Also, I have created a work order to put a new half-gate on the north side to serve Non-Revenue mechanics. The half-gate will enable the stockkeeper to keep the gate locked while still serving the mechanics.*

4. (Essential) Metro Transit should strengthen internal controls over the storage, issuing and receiving of linings, brakes and chambers to assure that all inventory items are safeguarded and properly accounted for.

Eighty-nine percent (89%) of the total Break Shop inventory shortage was due to brake linings, shoes and chambers that could not be located. It appears that an entire pallet of Gillig rear break linings is missing. Those linings, breaks and chambers that were located were very difficult to find, as were many other items throughout the Break Shop stockroom.

TX base originally indicated 79 rear brake chambers; however, this was changed to 49 after the stock keeper attempted to reconcile the number on hand with what was recorded in TX base. Even with this adjustment, Audit counted 41 units, eight short of the revised inventory number.

Management Response: *All gates and entry points to the Brake shop stockroom have been closed. I have ordered a sliding self-locking gate for the brake shop stockroom on the north Non-revenue side. The front facing the brake shop has a half-door. I am adding an issue sheet to keep track of brake shoes, brake drums and chambers. We will also be conducting a weekly inventory of all brake linings, chamber drums and finished brake shoes. Locations for all items will be clearly identified and put in TX base. This is in addition to cycle counting 50 items per day in the brake shop.*

5. (Significant) Metro Transit should develop a procedure for the management of the stock room when the stock keeper is not working (weekends, evenings, etc.). The procedure should ensure adequate internal controls to ensure the integrity of the inventory.

Only a single weekday first shift stock keeper is assigned to the brake shop and when he is not working, there is no one to take care of his duties including issuing and taking in inventory and properly accounting for such transactions in TX base.

Management Response: *We have issued procedures for obtaining parts and material when the stockkeeper is away or absent. We will attempt to cover the absences of stock keepers when staffing permits. However, in the event we can't cover, the stockroom will remain locked and secure. Mechanics will use the same issue sheets and access procedures used by the service garage stockrooms when they are not staffed.*

HLRT Facility

6. (Essential) Bombardier and Metro Transit inventory located in the 2d floor stockroom should be physically separated to assure proper segregation and safeguarding of assets.

The 2d floor LRT facility stockroom is shared by Bombardier. Bombardier inventory is in the front half and Metro Transit inventory is in the back half; however, some Bombardier inventory was observed to be on the Metro Transit side. With no physical barrier to separate the inventory belonging to each party inventory can become mixed increasing the risk of loss.

Management Response: *Bombardier and Metro Transit representatives agreed to partition the area using a fence. Building Maintenance has been notified to purchase the fencing and to install it as soon as possible. Bombardier employees will not have access to Metro Transit side of the fence except when our stockkeeper lets them in. Metro Transits parts will be stored in the back half of the stockroom and Bombardier parts in the front. Entrance to our parts will be through the Bombardier area.*

7. (Significant) Yard items are not properly identified and the number of poles in the yard exceeds that recorded in TXbase. The poles and points stored in the yard should be appropriately identified and accounted for in TX base.

Points could not be individually identified. Audit counted 31 which matched the total in TX base; however, individual items are not adequately labeled or cross referenced to TX base. Poles could also not be individually identified. Audit counted 29 poles, seven more than the 22 in TX base.

Management Response: *We have created a metal plate to hold bar coded labels. This plate has a hole so we can use a metal or plastic tie to attach the plate to the items. These plates and labels should withstand the weather.*

8. (Significant) Metro Transit should implement controls to assure that inventory on repair vehicles is properly accounted for.

Some "N-E-W" crimping tools that are believed to be on repair vehicles were included in TX base inventory, but could not be located.

Management Response: *As a rule we do not stock tools. These items were a part of a package for the Signal Department. They were setup so we would have vendor and other information needed to purchase them again in the future if needed. When the tools were taken, they should have been issued to the Technician; however, it was done on the off shift and the stock numbers were not written down. We are looking for the technician involved so that the tools can be properly issued and accounted for. Presently we are not stocking any parts in trucks at Light Rail.*

9. (Significant) All items in inventory should be properly stored for easy access. Currently many items provided by the contractor are stored in large boxes on the floor.

All inventories identified as "N-E-W" have not been placed on shelves and are primarily in large boxes awaiting shelving. These are supplies are difficult to find and many require cross-referencing with TX base to identify location and their exact identity.

Management Response: *We didn't have the bin space to store these until recently. We recently received two module cabinets for Light Rail in which to store these items. The cabinets are now setup and ready to be used.*

10. (Significant) Controls should be strengthened to assure that when used and repaired items are placed in inventory, TX base is updated to assure proper classification and availability of items.

The physical inventory included 54 used run number signs, having been taken off trains and placed in inventory, however, they are not accounted for in TX base. These items are not expected to be used and account for $76,488 (77%) of the total LRT Facility overage. In another case, a pantograph was taken off a train, but is still electronically connected to the train rather than in inventory where it actually resides. A front designation sign has also been received back from the vendor after being repaired and was physically in inventory, but not accounted for in TX base.

Management Response: *We are in the process of instructing Systems and Vehicle Maintenance personnel on the inventory process and are waiting for distribution information from Maintenance for the 54 signs that were taken off the trains. I have also instructed the Rail Coordinator to receive them into inventory. Due to how TX base functions, the Pantograph taken off the train and sitting in inventory could not be electronically removed until another pantograph has been installed on the train. We are working with Systems and Vehicle Maintenance to improve this process. Removing and issuing parts to LRT mechanics is still new to them. The designation sign was repaired and returned, but the stock keeper didn't have the information to receive it into inventory. We are currently working with warranty personnel to correct this problem. We are also having bi-weekly meetings with Systems and Vehicle Maintenance personnel to correct some of the other problems.*

11. (Consideration) Metro Transit should determine how best to account for and display shop supplies.

Brake Shop shop supplies are located next to bins of controlled inventory inside the stockroom. According to the stock keeper, these supplies are expensed when received rather than being included in inventory; however, the items were included in the TX base inventory report. LRT Facility shop supplies are included as inventory in TX base and are located outside the controlled stock rooms, making it easier for maintenance personnel to access them.

Management Response: *The Brake Shop's shop supplies are expensed when received whereas Light Rail shop supplies are expensed after they are used. The Light Rail system was used to enable them to set inventory up on a reorder point. However, I have instructed the Light Rail Coordinator to also issue supplies upon receipt. This will be consistent with the Brake Shop's system of issuing shop supplies upon receipt.*

FOLLOW-UP ON PRIOR AUDIT RECOMMENDATIONS

Radio Shop inventories were audited in April 2004, July 2005 and July 2006. Although following the July 2006 audit, internal controls were stated as existing, the following additional comment regarding increased accuracy was made:

> "Based on the inventory results and explanations for differences, Radio Shop personnel still need to improve documentation of parts removed from retired and/or damaged buses and placed back into inventory. Inventory quantity overages and dollar value understatements occur when returned parts are not received back into the TX base inventory. It is essential that removed and returned parts be documented and be delivered to the stock keeper so they can be properly received back into the TX base inventory."

Since July 2006, a Head Stock Keeper has been assigned to the Radio Shop, all items are being inventoried and all inventory is being moved to a secure location within Metro Transit's Operation Support Building. Audit will include the Radio Shop in the next audit of Metro Transit stores to assure that the move and new operation have been successfully implemented and internal controls are appropriate to minimize risk. However, it appears that prior audit findings have been resolved.