



**Program Evaluation and Audit**

***Metro Transit  
Physical Inventories Audit***

***Radio Shop  
Unit Overhaul Base  
South Garage  
East Metro Garage***

25 June 2008

# INTRODUCTION

## Background

To ensure timely, cost-effective maintenance for Metro Transit vehicles, many commonly used parts and equipment are stored at one of its 11 stockrooms. Keeping the items on site is valuable, but also increases the risk of misappropriation or theft. As a result, the stockrooms have been viewed by Metro Transit and Program Evaluation and Audit (Audit) as relatively high risk. Therefore, Audit annually reviews about three stockrooms 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, Audit reviewed 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. 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 be strengthened by improving documentation when parts are removed from retired and damaged buses.

In 2007, the Radio Shop was moved from the Unit Overhaul Base to a secure location within Metro Transit's Operations Support Center. Due to this move, Audit included the Radio Shop in the current audit of Metro Transit stockrooms to assure that the move and new operations have been successfully implemented and internal controls are appropriate to minimize risk.

## Assurances

This audit was conducted in accordance with the Institute of Internal Auditors' *International Standards for the Professional Practice of Internal Auditing* and the U. S. Government Accountability Office's *Government Auditing Standards*.

## Scope

The present inventory audits were conducted at the Radio Shop, the Unit Overhaul Base and the South and East Metro Garage stockrooms, which were identified as the stockrooms with the highest potential risk. The Radio shop moved location and is essentially a new stockroom, shared with Farebox Repair and Maintenance, and the other three have not been audited since 2004.

## 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 plus a judgmental sample of the highest extended value items. Audit physically counted the selected inventory items and compared that count to the quantity stated in the Txbase inventory system. Universe and sample stratification data based on average unit cost is as follows for the four stockrooms:

### Radio Shop/Farebox

<u>Average Unit Cost</u>	<u>Size of Universe</u>	<u>Size of Sample</u>	<u>Value of Universe</u>	<u>Value of Sample</u>
\$0 to \$1,400	1,441	69	\$168,399	\$ 11,283
\$1,401 to \$4,000	71	36	160,328	83,178
\$4,001 to \$13,000	21	16	143,603	113,919
<b>Sub-Total</b>	<b>1,533</b>	<b>121</b>	<b>\$472,330</b>	<b>\$208,380</b>
<b><u>100% Judgmental Sample</u></b>				
\$13,001 and above	5	5	271,173	271,173
<b>Total</b>	<b>1,538</b>	<b>126</b>	<b>\$743,503</b>	<b>\$479,553</b>

### Unit Overhaul Base

<u>Average Unit Cost</u>	<u>Size of Universe</u>	<u>Size of Sample</u>	<u>Value of Universe</u>	<u>Value of Sample</u>
\$0 to \$400	2,814	71	\$138,824	\$ 3,982
\$401 to \$1,700	178	52	142,706	42,934
\$1,701 to \$17,000	30	21	139,678	107,782
<b>Sub-Total</b>	<b>3,022</b>	<b>144</b>	<b>\$421,208</b>	<b>\$154,698</b>
<b><u>100% Judgmental Sample</u></b>				
\$17,001 and above	2	2	77,426	77,426
<b>Total</b>	<b>3,024</b>	<b>146</b>	<b>\$498,634</b>	<b>\$232,124</b>

**South Garage**

<u>Average Unit Cost</u>	<u>Size of Universe</u>	<u>Size of Sample</u>	<u>Value of Universe</u>	<u>Value of Sample</u>
\$0 to \$200	4,892	72	\$162,819	\$ 2,665
\$201 to \$800	456	63	174,925	25,078
\$801 to \$7,000	<u>121</u>	<u>46</u>	<u>182,915</u>	<u>72,910</u>
<b>Sub-Total</b>	<b>5,469</b>	<b>181</b>	<b>\$520,659</b>	<b>\$100,653</b>
<b><u>100% Judgmental Sample</u></b>				
\$7,001 and above	<u>6</u>	<u>6</u>	<u>132,140</u>	<u>132,140</u>
<b>Total</b>	<b>5,475</b>	<b>187</b>	<b>\$652,799</b>	<b>\$232,793</b>

**East Metro Garage**

<u>Average Unit Cost</u>	<u>Size of Universe</u>	<u>Size of Sample</u>	<u>Value of Universe</u>	<u>Value of Sample</u>
\$0 to \$200	4,529	72	\$142,509	\$ 2,614
\$201 to \$800	378	61	143,654	22,372
\$801 to \$8,000	<u>99</u>	<u>42</u>	<u>149,716</u>	<u>57,660</u>
<b>Sub-Total</b>	<b>5,006</b>	<b>175</b>	<b>\$435,879</b>	<b>\$ 82,646</b>
<b><u>100% Judgmental Sample</u></b>				
\$8,001 and above	<u>3</u>	<u>3</u>	<u>70,217</u>	<u>70,217</u>
<b>Total</b>	<b>5,009</b>	<b>178</b>	<b>\$506,096</b>	<b>\$152,863</b>

1. Those items that could be located were physically counted and compared to the Txbase 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 22, 2008 physical inventory counts were performed at the South and East Metro garage stockrooms. On April 23, 2008 a similar count of physical inventories was conducted at the Unit Overhaul Base and the Radio Shop/Farebox stockrooms. The following observations were made and a statistical data summary for comparing the four stockrooms is included as Appendix I.

### **Radio Shop/Farebox Stockrooms**

Radio Shop/Farebox inventory is located at two separate stockrooms. Farebox inventory and most Radio Shop inventory items are at the new Radio Shop/Farebox Stockroom location within Metro Transit's Operations Support Center. Additional Radio Shop inventory remains at the old stockroom located at the Unit Overhaul Base. This creates some confusion, splits responsibility for maintaining accurate inventory between additional individuals and provides for less effective management oversight. During the audit Materials Management stated that a review was planned regarding the possibility of combining all Radio Shop inventory into a single location.

There is not a security camera located in the new Operations Support Center Radio Shop/Farebox stockroom. All other Metro Transit stockrooms are equipped with security cameras as a deterrent against asset misappropriation. The absence of a security camera at the new stockroom is a significant internal control weakness.

Audit randomly sampled 121 items valued at \$208,381, finding 19 shortages for -\$10,167 and 4 overages for \$1,039 representing 4.88% and 0.50% of randomly sampled inventory value, respectively. The net result for all 23 variances is a shortage of -\$9,129.

Extrapolating the individual strata samples to the \$472,330 random sample universe, Audit estimates a net shortage of -\$12,439; however, the absolute variance including both overages and shortages is \$26,891 or 5.69% of the random sample universe. Audit also judgmentally sampled the five items with the highest value. These items valued at \$271,173 resulted in one overage of \$7,070. Combining this with the extrapolated random sample, Audit estimates a net shortage of -\$5,369 and an absolute variance of \$33,961 (4.57%) from the \$743,503 total Radio Shop/Farebox Stockroom inventory.

Materials Management reviewed the preliminary results of audit and provided documentation explaining the following variances:

- An order for and receipt of 25 farebox trim shields was mistakenly entered into TxBase as 250, resulting in a shortage of -\$2,504.
- A stockkeeper had neglected to record the issue of 96 farebox bill transport windows that occurred within the week prior to the audit, resulting in a shortage of -\$1,850.

- A sign control identified as being located in one of the repair vans had been placed on a shelf within the stockroom reserved for non-working items without the stockkeeper's knowledge, resulting in a shortage of -\$899.
- A mobile DVR hard drive assembly that had been used to repair a non-functioning DVD about two months prior to the audit had not been charged out of the Txbase inventory. The Electronics Repair Supervisor stated immediately that it had been used for that purpose and showed the auditor the non-working DVR hard drive assembly. The initial audit count resulted in a shortage of -\$3,243.
- During the audit both the stockkeeper and the auditor counted four trays of farebox TRIM motors. The top tray contained 12 units and appeared full; therefore both parties assumed no more than 12 units could fit in a tray. Upon a second look by the stockkeeper, one of the lower trays contained an additional 2 units. These extra units were subsequently placed in the top tray as is standard practice when storing non-standard quantities of inventory items. The initial count resulted in a shortage of -\$201.

Adjusting for these five items valued at \$8,697, Audit found 14 shortages for -\$1,470 and 4 overages for \$1,039 representing -0.71% and 0.50% of randomly sampled inventory value, respectively. The net result for 18 variances is a shortage of -\$431. Extrapolating the individual strata samples to the \$472,330 random sample universe, Audit estimates a net overage of \$4,192 and an absolute variance including both overages and shortages of \$10,260 or 2.17% of the random sample universe. Combining this with the high value judgmental sample, Audit estimates a net overage of \$11,261 and an absolute variance of \$17,331 (2.33%) from the \$743,503 total Radio Shop/Farebox stockroom inventory.

The net result is within an acceptable range (+ or - 1%) for the random sample (0.89%) but not for the combined random/judgmental samples (1.51%). The absolute variance (2.33%) is within its acceptable range of 3%. The variant item number ratio is 14.88%; 18 variances in 121 sampled items. Audit recommends that variances be below 5% (6 items).

The Radio Shop stockroom at the Unit Overhaul Base out-sources the repair of VCRs to VSIS, Inc., a small locally owned firm operating out of the proprietor's home and contracted by the Council to perform monthly service on each bus VCR and to replace defective units. To assist VSIS in accomplishing its tasks, the Radio Shop has provided it with a stock of 45 VCRs valued at \$31,817. The 45 VCRs are included in the Radio Shop Txbase inventory. Audit was present one day when VSIS personnel brought in four defective VCRs and exchanged them for four new ones. The Electronics Repair Supervisor maintains an inventory listing of the serial numbers of all equipment signed out to VSIS. This listing was updated at the time of exchange and both parties attested to the changes by signing the form. In addition, VSIS is signed to a two year contract for the period November 1, 2006 through November 1, 2008, with an option for an additional year. The contract is in the form of a standard Council contract and includes insurance and indemnity clauses that protect the interests of the Council in case of loss.

### **Unit Overhaul Base Stockroom**

Audit randomly sampled 144 items valued at \$154,698, finding 16 shortages for -\$5,538 and 12 overages for \$18,265 representing 3.58% and 11.81% of randomly sampled inventory value, respectively. The net result for all 28 variances is an overage of \$12,727. Extrapolating the individual strata samples to the \$421,208 random sample universe, Audit estimates a net overage of \$11,781; however, the absolute variance including both overages and shortages is \$42,345 or 10.05% of the random sample universe. Audit also judgmentally sampled the two items with the highest value. These items valued at \$77,426 resulted in no shortages or overages. Combining this with the extrapolated random sample, Audit estimates a net overage of \$11,781 and an absolute variance of \$42,345 (8.49%) from the \$498,634 total Unit Overhaul Base stockroom inventory.

The net results are outside the acceptable range for both the random sample (2.80%) and the combined random/judgmental samples (2.36%). The absolute variance (8.49%) is also outside the acceptable range. The variant item number ratio is 19.44%; 28 variances in 144 sampled items. This is the highest among the four stockrooms and 65% higher than the average (12.65%) for the other three.

Unit Overhaul Base personnel have free access to the stockroom. According to stockroom and management personnel, the expressed reason for unrestricted stockroom access is to eliminate parts receipt waiting time and provide for more efficient and timely bus repairs. When obtaining parts, employees other than the stockkeeper are required to list them on a form provided by the stockkeeper, however, the high rate of inventory variances indicates a breakdown in compliance with such controls.

### **South Garage Stockroom**

Audit randomly sampled 181 items valued at \$100,653, finding 13 shortages for -\$561 and 5 overages for \$182 representing -0.56% and 0.18% of randomly sampled inventory value, respectively. The net result for all 18 variances is a shortage of -\$379. Extrapolating the individual strata samples to the \$520,659 random sample universe, Audit estimates a net shortage of -\$2,694 and an absolute variance including both overages and shortages of \$7,056 or 1.36% of the random sample universe. Audit also judgmentally sampled the six items with the highest value. These items valued at \$132,140 resulted in three shortages totaling -\$5,490 and one overage of \$3,102 for a net shortage of -\$2,388. Combining this with the extrapolated random sample, Audit estimates a net shortage of -\$5,083 and an absolute variance of \$15,648 (2.40%) from the \$652,799 total South Garage stockroom inventory.

The net result is within an acceptable range for both the random sample (-0.52%) and the combined random/judgmental samples (-0.78%). The absolute variance (2.40%) is also within an acceptable range. The variant item number ratio is 9.94%; 18 variances in 181 sampled items.

Rather than scrapping diesel fuel that had become contaminated, Metro Transit transferred it to the boiler heating fuel tank for use in heating its facilities. However, heating fuel inventory is valued at \$1.82/gallon versus \$2.24/gallon for diesel fuel. At the time of audit, heating fuel showed a negative variance of 1,088 gallons (\$1,982) with Txbase indicating a 9,368 gallon inventory versus the actual count of 8,280.

### **East Metro Garage Stockroom**

Audit randomly sampled 175 items valued at \$82,646, finding 12 shortages for -\$1,708 and 11 overages for \$2,200 representing -2.07% and 2.66% of randomly sampled inventory value, respectively. The net result for all 23 variances is a \$492 overage. Extrapolating the individual strata samples to the \$435,879 random sample universe, Audit estimates a net overage of 5,936 and an absolute variance including both overages and shortages of \$38,098 (8.74%) of the random sample universe. Audit also judgmentally sampled the three items with the highest dollar value. These items valued at \$70,217 resulted in one overage of \$37,461. Combining this with the extrapolated random sample results, Audit estimates a net overage of \$43,397 (8.57%) and an absolute variance of \$75,559 (14.93%) from the \$506,096 total East Metro Garage stockroom inventory.

The variance for diesel fuel of \$37,461 (16,739 gallons) greatly skews these results. Materials Management knew of this discrepancy before the audit. The large variance was due to a broken pressure gauge and subsequent miscellaneous inventory entries. East Metro Txbase fuel inventory exceeded the actual inventory by 16,841 gallons. Adjusting for this item, the judgmental sample now results in a shortage of (-\$228) or 102 gallons. Combining this with the extrapolated random sample, Audit estimates a net overage of \$5,707 (1.13%) and an absolute variance of \$38,326 (7.57%) from the \$506,096 total East Metro Garage stockroom inventory.

The net results are outside the acceptable range for the random sample (1.36%), the combined random/judgmental samples (1.13%) and the absolute variance (7.57%). The variant item number ratio is 13.14%; 23 variances in 175 sampled items.

On one occasion, an item package was opened and included in inventory. On another occasion, two boxes of the same item were opened and both were included in inventory. The South Garage stockkeeper removes such items from inventory when they are opened. To be consistent, the East Metro Garage stockkeeper should do likewise. In addition, expendable miscellaneous parts that are accessible to mechanics outside of the stockroom are also included in inventory. It would be better to remove these items from inventory at the time they are placed for use in the outside bins.



## CONCLUSIONS

1. *Radio Shop/Farebox Stockrooms – Internal controls are complied with to assure accurate inventory reporting; however, the need to search for initially missing inventory and the high number of variances indicates that some procedures are not always followed which could then lead to asset loss.*

The initial audit results disclosed that 23 of the 121 items checked (19.00%) resulted in actual inventory varying from that identified in Txbase. This number of variances indicates that increased care must be taken to assure accurate acceptance and distribution of inventory. In addition, the individual strata samples' net extrapolated overage was 2.63% and the absolute variance was 5.69% of total Radio Shop/Farebox random sampled inventory. Upon further review by stockroom personnel, it was disclosed that five items were located or identified as being issued resulting in a net overage of 0.89% and an absolute variance of 2.17%. This amount of variance is acceptable and indicates that controls are in place; however, they are not always followed.

The division of inventory into two stockrooms located about eight miles apart provides for ineffective management of inventory and increases the possibility of control deficiencies. In addition, the new Operations Support Center Radio Shop/Farebox stockroom is not equipped with a security camera; a significant control weakness. Finally, regarding the inventory placed with VSIS, Inc., based upon a review of controls identifying the equipment, the actual value of the equipment and the contractual protection afforded the Council, the risk of loss allowing VSIS, Inc. to possess Council equipment is minimal.

2. *Unit Overhaul Base Stockroom– Internal controls are not complied with to assure accurate inventory reporting or proper safeguarding of assets.*

The audit disclosed that 28 of the 144 items checked (19.44%) resulted in actual inventory varying from that identified in Txbase. This number of variances indicates that increased care must be taken to assure accurate acceptance and distribution of inventory. In addition, the individual strata samples' net extrapolated overage was 2.80% and the absolute variance was 10.05% of total Unit Overhaul Base random sampled inventory. This amount of variance is not acceptable and indicates that controls are not complied with to assure accurate inventory reporting or proper safeguarding of assets. In addition, the expressed need for unrestricted stockroom access may contribute to this non-compliance which has resulted in the highest variant item ratio among the four stockrooms, 65% higher than the average (12.65%) for the other three.

3. *South Garage Stockroom– Internal controls are complied with to assure accurate inventory reporting and proper safeguarding of assets.*

The audit disclosed that 18 of the 181 items checked (9.94%) resulted in actual inventory varying from that identified in Txbase. This is the lowest variant item number ratio among the four stockrooms; however, it still indicates that increased care can be taken to assure accurate acceptance and distribution of inventory.

The individual strata samples' net extrapolated shortage of -0.52% and the absolute variance of 1.36% of total South Garage random sampled inventory are both the lowest among the four stockrooms. These variances are within acceptable ranges and indicate that controls are in place to assure accurate inventory reporting and proper safeguarding of assets.

Rather than scrapping diesel fuel that had become contaminated, Metro Transit transferred it to the boiler heating fuel tank for use in heating its facilities. However, heating fuel inventory is valued at \$1.82/gallon versus \$2.24/gallon for diesel fuel. At the time of audit, heating fuel showed a negative variance of -1,088 gallons (\$1,982) with Txbase indicating a 9,368 gallon inventory versus the actual count of 8,280. If the contaminated fuel was not recorded in Txbase, the variance should have been positive.

4. *East Metro Garage Stockroom – Internal controls are not complied with to assure accurate inventory reporting or proper safeguarding of assets.*

The audit disclosed that 23 of the 175 items checked (13.14%) resulted in actual inventory varying from that identified in Txbase. This number of variances indicates that increased care must be taken to assure accurate acceptance and distribution of inventory. In addition, the individual strata samples' net extrapolated overage was 1.36% and the absolute variance was 8.74% of total East Metro Garage random sampled inventory. This amount of variance is not acceptable and indicates that controls are not complied with to assure accurate inventory reporting or proper safeguarding of assets.

In addition, the variance for diesel fuel of \$37,461 (16,739 gallons) greatly skewed the results. Materials Management knew of this discrepancy before the audit. The large variance was due to a broken pressure gage and subsequent miscellaneous inventory entries. East Metro Txbase fuel inventory exceeded the actual inventory by 16,841 gallons.

On one occasion, an item package was opened and included in inventory. On another occasion, two boxes of the same item were opened and both were included in inventory. The South Garage stockkeeper removes such items from inventory when they are opened. To be consistent, the East Metro Garage stockkeeper should do likewise. In addition, expendable miscellaneous parts that are accessible to mechanics outside of the stockroom are also included in inventory. It would be better to remove these items from inventory at the time they are placed for use in the outside bins.

## 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.

### Radio Shop

1. **(Essential) Metro Transit should place a security camera in the Radio Shop/Farebox Operations Support Center stockroom in order to monitor activity.**

Security cameras are an important tool in safeguarding inventory. All Metro Transit stockrooms, except the new Radio Shop/Farebox Operations Support Center stockroom, are equipped with security cameras to monitor stockroom activity and to act as a deterrent to misappropriation of inventory and supplies.

**Management Response:** *Asset Protection is installing a camera.*

**Actions will be completed by:** *The installation was completed on May 29, 2008.*

**Staff Responsible:** *Manager of Asset Protection and Manager of Material Management*

**2. (Significant) Metro Transit should reinforce through written and verbal means the necessity to comply with procedures for issuing, returning and recording Radio Shop inventory.**

The initial audit results disclosed that 23 of the 121 items checked (19.00%) resulted in actual inventory varying from that identified in Txbase. However, upon further review by stockroom personnel, it was disclosed that five items were located or identified as being issued resulting in a net overage of 0.89% and an absolute variance of 2.17%. This amount of variance is acceptable and indicates that controls are in place; however, the additional time taken to locate five items reveals that the controls are not always followed. The five items had either not been issued from Txbase, been placed in the wrong area and the stockkeeper not notified or been entered incorrectly into Txbase due to a typing error.

All Metro Transit stockrooms conduct nightly random inventory cycle counts in which the physical inventory of about 50 items are verified to Txbase data. The Stockroom Supervisor and Materials Management should reconcile any deviations found during these inventory counts, discuss the variance with the appropriate employees and issue "training" memoranda to all stores personnel regarding the problem and what can be done in the future to avoid similar inventory variances.

**Management Response:** *By July 1, 2008 the Manager, Material Management will update the Cycle Count Policy/Procedure to reinforce the necessity for accuracy, the requirement for effective research to determine the reason for discrepancies and the requirement to report discrepancies.*

*Management has previously developed a plan to tighten controls in the area of inventory control. The Manager, Material Management identified the need for an Inventory Control Specialist in December 2007 and has been working to establish this position. The Inventory Control Specialist responsibilities will include the weekly auditing of stockroom inventory accuracy, the disposition of obsolete parts and equipment, and the recording of performance measurements. Management hopes to have this position hired and in place by the end of 2008.*

**Actions will be completed by:** *Paragraph 1 – July 1, 2008; Paragraph 2 – December 31, 2008*

**Staff Responsible:** *Manager, Material Management*

**3. (Consideration) Metro Transit should consider combining the two radio shop stockroom locations.**

Radio Shop inventory is located at two separate stockrooms. The majority of inventory items are located at the new Operations Support Center stockroom; however, additional inventory remains at the old stockroom located at the Unit Overhaul Base. This creates some confusion, splits responsibility for maintaining accurate inventory between additional individuals and provides for less effective management oversight. During the course of this audit Material Management stated that a review was planned regarding the possibility of combining all inventory into a single location.

**Management Response:** *Management agrees the radio shop stockrooms should be combined. As a result, the Electronics Department at the Overhaul Base will be moved and combined with the Brake Shop/Non-Revenue Stockroom. When parts are required by the Electronics Technicians, they will get those parts from the Brake Shop/Non-Revenue Stockroom.*

**Actions will be completed by:** July 25, 2008

**Staff Responsible:** *Manager, Material Management and Supervisor, Electronics Repair*

**Unit Overhaul Base**

**4. (Essential) Metro Transit should discontinue its practice of providing employees free access to the Unit Overhaul Base stockroom.**

With 28 variances in 144 sampled items (a variant item number ratio of 19.44%), the Unit Overhaul Base stockroom had the highest percentage of variances among the four stockrooms; 65% higher than the average (12.65%) for the other three.

Unit Overhaul Base personnel have free access to the stockroom. According to stockroom and management personnel, the expressed reason for unrestricted stockroom access is to eliminate parts receipt waiting time and provide for more efficient and timely bus repairs. When obtaining parts, employees other than the stockkeeper are required to list them on a form provided by the stockkeeper; however, the high rate of inventory variances indicates a breakdown in compliance with such controls.

**Management Response:** *An in-depth investigation has found several reasons for the large variant item number ratio. Some of these reasons include:*

- *The stockkeeper did not follow the commonly established practice of the Material Management Department for the issue of shop supplies (see response to recommendation 5, below).*
- *The Maintenance Supervisor received replacement parts from a vendor due to previous faulty product shipments by that vendor. These parts were put into inventory without being received by Material Management.*

- *Items, no longer needed, were returned to the stockroom without the stockkeeper's knowledge or action.*

*The Unit Overhaul Shop specializes in the rebuild of major components such as engines, transmissions and alternators. Often times a mechanic needs up to 15 parts at one time for a specific repair. If the stockkeeper was the only person pulling the parts for the mechanic, it would cause long delays to the other mechanics waiting for parts. Based on this, the stockroom has to remain open to the mechanics. However, the following procedures will be established to more tightly control the Unit Overhaul inventory.*

- *A 100% inventory of the stockroom will be conducted.*
- *The stockkeeper will lock the stockroom whenever he/she is not within sight of the stockroom.*
- *A mechanic, who pulls his/her own parts, will not be able to remove the parts from the stockroom until the stockkeeper has verified that those parts are recorded as leaving the stockroom.*
- *A mechanic will not be able to return an unused part directly to the shelf. The mechanic will only be allowed to give the part to the stockkeeper, thus ensuring the stockkeeper knows that the item must be returned to inventory.*

***Actions will be completed by:*** July 31, 2008

***Staff Responsible:*** Manager, Material Management; Supervisor, Unit Overhaul; Manager, Overhaul Base

**5. (Significant) Metro Transit should reinforce through written and verbal means the necessity to comply with procedures for issuing, returning and recording Unit Overhaul Base inventory.**

Almost one fifth of all items sampled by Audit varied from the recorded Txbase inventory. This number of variances indicates that increased care must be taken to assure accurate acceptance and distribution of inventory. In addition, the individual strata samples' net extrapolated overage was 2.80% and the absolute variance was 10.05% of total Unit Overhaul Base random sampled inventory. This amount of variance is not acceptable and indicates that controls are not complied with to assure accurate inventory reporting or proper safeguarding of assets.

All Metro Transit stockrooms conduct nightly random inventory cycle counts in which the physical inventory of about 50 items are verified to Txbase data. The Stockroom Supervisor and Materials Management should reconcile any deviations found during these inventory counts, discuss the variance with the appropriate employees and issue "training" memoranda to all stores personnel regarding the problem and what can be done in the future to avoid similar inventory variances.

**Management Response:** Management will work to reinforce procedures for issuing, returning and recording Unit Overhaul Base Inventory to include that when items are placed out for common use, they are charged out as shop supplies, miscellaneous work orders or lube supplies. When reviewing the discrepancies, it was noted \$2,413 was for bulk fluids that should have been issued as soon as they were placed on the floor for use by all mechanics. By July 31, 2008, the Manager, Material Management will create a procedure that standardizes how to stock and issue shop supplies, and also what items can be stocked as shop supplies.

By July 1, 2008 the Manager, Material Management will update the Cycle Count Policy/Procedure to reinforce the necessity for accuracy, the requirement for effective research to determine the reason for discrepancies and the requirement to report discrepancies.

Management has previously developed a plan to tighten controls in the area of inventory control. The Manager, Material Management identified the need for an Inventory Control Specialist in December 2007 and has been working to establish this position. The Inventory Control Specialist responsibilities will include the weekly auditing of stockroom inventory accuracy, the disposition of obsolete parts and equipment, and the recording of performance measurements. Management hopes to have this position hired and in place by the end of 2008.

**Actions will be completed by:** Paragraph 1 – July 31, 2008, Paragraph 2 – July 1, 2008, Paragraph 3 – December 31, 2008

**Staff Responsible:** Manager, Material Management

### South Garage

#### **6. (Significant) Metro Transit should reinforce through written and verbal means the necessity to comply with procedures for issuing, returning and recording South Garage inventory.**

Although the South Garage had the lowest net (-0.52) and absolute (1.36%) variances and also the lowest variant item number ratio (9.94%) among the four stockrooms, the variant item number ratio is still above the 5% Audit deems reasonable, indicating that increased care can be taken to assure accurate acceptance and distribution of inventory.

All Metro Transit stockrooms conduct nightly random inventory cycle counts in which the physical inventory of about 50 items are verified to Txbase data. The Stockroom Supervisor and Materials Management should reconcile any deviations found during these inventory counts, discuss the variance with the appropriate employees and issue “training” memoranda to all stores personnel regarding the problem and what can be done in the future to avoid similar inventory variances.

**Management Response:** *By July 1, 2008 the Manager, Material Management will update the Cycle Count Policy/Procedure to reinforce the necessity for accuracy, the requirement for effective research to determine the reason for discrepancies and the requirement to report discrepancies.*

*Management has previously developed a plan to tighten controls in the area of inventory control. The Manager, Material Management identified the need for an Inventory Control Specialist in December 2007 and has been working to establish this position. The Inventory Control Specialist responsibilities will include the weekly auditing of stockroom inventory accuracy, the disposition of obsolete parts and equipment, and the recording of performance measurements. Management hopes to have this position hired and in place by the end of 2008.*

**Actions will be completed by:** *Paragraph 1 – July 1, 2008, Paragraph 2 – December 31, 2008*

**Staff Responsible:** *Manager, Material Management*

**7. (Consideration) Metro Transit should consider reconciling boiler heating fuel inventory due to the negative quantity variance and the difference in price between heating fuel and the contaminated diesel fuel pumped into the boiler heating fuel tank.**

Rather than scrapping diesel fuel that had become contaminated, Metro Transit transferred it to the boiler heating fuel tank for use in heating the facilities. Heating fuel inventory is valued at \$1.82/gallon versus \$2.24/gallon for diesel fuel, and at the time of audit, heating fuel showed a negative variance of -1,088 gallons (\$1,982) with Txbase indicating 9,368 versus the actual count of 8,280. The addition of the contaminated diesel fuel would more likely cause a positive rather than the current negative heating fuel variance. Therefore, there appear to be reasons other than moving the contaminated diesel fuel to the heating fuel tank that are causing the current heating fuel inventory variance.

**Management Response:** *The inventory volume of bulk fluids is monitored by each garage lead stock keeper and the Manager, Material Management. The frequency these items are monitored is based on the daily usage of each of the items. Management will review the monitoring frequency by each garage.*

*Based on several factors (e.g. expansion/contraction of fluids due to temperature, very small errors in fuel pump meter calibration and very small errors in tanker gauges, etc.) the amount of fuel in the underground storage tanks can vary. The Manager, Material Management uses the standard established by the Minnesota Pollution Control Agency of 1% variance when conducting the daily/weekly/monthly monitoring of bulk fluids. Over an extended period of time with a 1% variance, the continuous inventory variance can go out of compliance. The Manager, Material Management will continue to monitor fuel inventory and usage based on the current standards established by the MPC. To ensure*



*the continuous inventory is in compliance the Manager, Material Management will make documented adjustments to inventory every June and December 1<sup>st</sup>, if necessary.*

*Actions will be completed by: June 1<sup>st</sup> and December 1<sup>st</sup> of each year.*

*Staff Responsible: Manager, Material Management*

### **East Metro Garage**

#### **8. (Significant) Metro Transit should reinforce through written and verbal means the necessity to comply with procedures for issuing, returning and recording East Metro Garage inventory.**

The audit disclosed that 23 of the 175 items checked (13.14%) resulted in actual inventory varying from that identified in Txbase. This number of variances indicates that increased care must be taken to assure accurate acceptance and distribution of inventory. In addition, both the net overage (1.36%) and the absolute variance (8.74%) of East Metro Garage random sampled inventory indicates that controls are not complied with to assure accurate inventory reporting or proper safeguarding of assets.

All Metro Transit stockrooms conduct nightly random inventory cycle counts in which the physical inventory of about 50 items are verified to Txbase data. The Stockroom Supervisor and Materials Management should reconcile any deviations found during these inventory counts, discuss the variance with the appropriate employees and issue “training” memoranda to all stores personnel regarding the problem and what can be done in the future to avoid similar inventory variances.

***Management Response:*** *By July 1, 2008 the Manager, Material Management will update the Cycle Count Policy/Procedure to reinforce the necessity for accuracy, the requirement for effective research to determine the reason for discrepancies and the requirement to report discrepancies.*

*Management has previously developed a plan to tighten controls in the area of inventory control. The Manager, Material Management identified the need for an Inventory Control Specialist in December 2007 and has been working to establish this position. The Inventory Control Specialist responsibilities will include the weekly auditing of stockroom inventory accuracy, the disposition of obsolete parts and equipment, and the recording of performance measurements. Management hopes to have this position hired and in place by the end of 2008.*

***Actions will be completed by:*** *Paragraph 1 – July 1, 2008, Paragraph 2 – December 31, 2008*

***Staff Responsible:*** *Manager, Material Management*

**9. (Consideration) Metro Transit should consider implementing a common practice of removing from inventory expendable supplies and inventory included in Txbase by the box or package or other units of measure other than “each.”**

Expendable supplies that are accessible to mechanics outside of the stockroom are included in inventory. It would be better to remove these items from inventory at the time they are placed for use in the outside bins. In addition, on one occasion, an item package was opened and included in inventory. On another occasion, two boxes of the same item were opened and both were included in inventory. At the South Garage such items would be removed from inventory when opened. To be consistent, the East Metro Garage and other Metro Transit stockrooms should consider doing likewise.

***Management Response:** Management will work to reinforce procedures for issuing, returning and recording Unit Overhaul Base Inventory. This will include that when items are placed out for common use, they are charged out as shop supplies, miscellaneous work orders or lube supplies. By July 31, 2008 the Manager, Material Management will create a procedure that standardizes how to stock and issue shop supplies, but also what items can be stocked as shop supplies.*

***Actions will be completed by:** July 31, 2008*

***Staff Responsible:** Manager, Material Management and Assistant Director for Administration, Bus Maintenance*

## **FOLLOW-UP ON PRIOR AUDIT RECOMMENDATIONS**

Radio Shop inventories were audited in April 2004, July 2005 and July 2006. All audit recommendations have been implemented; however, in 2007 most of the inventory was moved from the Unit Overhaul Base to a secure location within Metro Transit's Operation Support Center. Due to this move, Audit included the Radio Shop in the current audit of Metro Transit stockrooms to assure that the move and new operations have been successfully implemented and internal controls are appropriate to minimize risk.

Central Stores, the Brake Shop and the LRT Facility were audited in April 2007. In addition, the Heywood garage stockroom was audited in May 2007 and in June 2007 the Nicollet and Ruter garage stockrooms were also audited. The recommendations that resulted from these audits have been implemented; therefore, no follow-up actions were required to be included in the current audit.

**Metropolitan Council  
Program Evaluation & Audit  
Metro Transit Physical Inventories Audit – April 22-23, 2008  
Appendix I: Statistical Data Summary**

	<b>Radio Shop</b>	<b>Unit Overhaul Base</b>	<b>South Garage</b>	<b>East Metro Garage</b>
<b><u>Random Sample</u></b>				
Shortages	14	16	13	12
Overages	4	12	5	11
Value of Sample Shortages	(\$1,470)	(\$5,538)	(\$561)	(\$1,708)
Value of Sample Overages	\$1,039	\$18,265	\$182	\$2,200
Net Sample Variance Value	(\$431)	\$12,727	(\$379)	\$492
Shortage % of Sampled Inventory	-0.71%	-3.58%	-0.56%	-2.07%
Overage % of Sampled Inventory	0.50%	11.81%	0.18%	2.66%
Total Variance Items	18	28	18	23
Variant Item Number Ratio	14.88%	19.44%	9.94%	13.14%
Recommended Variance Items	6	7	9	8
Recommended Variant Item Ratio	5.00%	5.00%	5.00%	5.00%
<b><u>Total Random Sample Stockroom Inventory</u></b>				
Estimated Net Overage	\$4,192	\$11,781	\$0	\$5,936
Estimated Net Shortage	\$0	\$0	(\$2,694)	\$0
Net Projected Variance	0.89%	2.80%	0.52%	1.36%
Absolute Variance	\$10,260	\$42,345	\$7,056	\$38,098
Absolute Variance %	2.17%	10.05%	1.36%	8.74%
<b><u>Judgmental Sample</u></b>				
Shortages	0	0	3	1
Overages	1	0	1	0
Value of Sample Shortages	\$0	\$0	(\$5,490)	(\$228)
Value of Sample Overages	\$7,070	\$0	\$3,102	\$0
<b><u>Combined Random and Judgmental Samples</u></b>				
Estimated Net Overage	\$11,261	\$11,781	\$0	\$5,707
Estimated Net Shortage	\$0	\$0	(\$5,083)	\$0
Net Projected Variance	1.51%	2.36%	-0.78%	1.13%
Absolute Variance	\$17,331	\$42,345	\$15,648	\$38,326
Absolute Variance %	2.33%	8.49%	2.40%	7.57%