

**OFFICE OF THE CITY CONTROLLER**



**FIRE DEPARTMENT  
INVENTORY MANAGEMENT AUDIT  
AS OF APRIL 6, 2000**

**Sylvia R. Garcia, City Controller**

**Judy Gray Johnson, Chief Deputy City Controller**

**Steve Schoonover, City Auditor**



OFFICE OF THE CITY CONTROLLER  
CITY OF HOUSTON  
TEXAS

Sylvia R. Garcia

November 14, 2000

The Honorable Lee P. Brown, Mayor  
City of Houston, Texas

SUBJECT: Fire Department  
Inventory Management Audit - (Report No. 00-24)

Dear Mayor Brown:

The City Controller's Office Audit Division has completed an unannounced Inventory Management Audit of the Fire Department's three warehouses located at 1205 Dart Street. The audit objective of this financial related audit was to assist management with the assessment of the adequacy of internal controls related to fleet maintenance inventory management.

Based on the results of our audit, the auditors concluded that internal controls over fleet maintenance physical inventory at the warehouses located at 1205 Dart Street are not adequate to provide Department management with reasonable assurance that physical inventories are properly safeguarded and managed. Draft copies of the matters contained in the report were provided to Department officials. The findings and recommendations are presented in the body of the report and the views of responsible officials as to actions being taken are appended to the report as Exhibit 1.

We commend the Department for taking immediate action on the recommendations identified in the report. Also, we appreciate the cooperation extended to our auditors by Department personnel during the course of the audit.

**Respectfully submitted,**

Sylvia R. Garcia  
City Controller

xc: City Council Members  
Albert Haines, Chief Administrative Officer  
Cheryl Dotson, Chief of Staff, Mayor's Office  
Christopher Connealy, Acting Chief, Fire Department  
Sara Culbreth, Acting Director, Finance and Administration Department

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## EXECUTIVE SUMMARY

- Inventory adjustments are not documented, justified and approved by appropriate department personnel and management. The inventory count testing of 42 stock keeping units (SKUs) revealed 15 errors between the perpetual records and physical inventory count quantities for an error rate of 36%.
- Accountability for inventory maintained in mobile inventory repair vehicles is inadequate due to weak internal controls over mobile inventory issues, mobile inventory procedures and verification by the repaired vehicle's chauffeur of the worked performed. Ten SKUs from each of the three mobile inventories tested were selected for sample counting. Errors between the perpetual records and physical inventory count quantities were 5, 3, and 1 for each of the three inventories tested, resulting in error rates of 50%, 30%, and 10% respectively.
- Security over the receiving area and the warehouse area located over the repair facility administrative offices is not adequate. These areas are easily accessible by unauthorized personnel.
- The Department does not have written detailed inventory management procedures.
- The inventory cycle count method used does not focus on issue activity value or on frequently issued items with the greatest risk of being incorrectly reported by the perpetual inventory system.

## SCOPE AND PURPOSE

Our scope consisted of conducting an unannounced fleet maintenance inventory count and reviewing inventory management procedures at the Fire Department as of April 6, 2000. Our objective was to assist management with the assessment of the adequacy of internal controls related to receiving, inventory, usage, safeguarding, and controlling assets. Additionally, the audit evaluated the Department's compliance with its own standard operating procedures.

Departmental management is responsible for establishing and maintaining a system of internal controls to adequately safeguard the physical inventory as an integral part of the Department's overall internal control structure. The objectives of a system are to provide management with reasonable, but not absolute, assurance that assets are safeguarded against loss from unauthorized use or disposition, and that transactions are executed in accordance with management's authorization and are recorded properly.

Due to the inherent limitations in any system of internal accounting controls, errors or irregularities may occur and not be detected in a timely fashion. Also, projection of any evaluation of the system to future periods is subject to the risk that procedures may become inadequate because of changes in conditions, or that the degree of compliance with procedures may change.

## CONCLUSION

Based on the results of our audit, we concluded that internal controls over fleet maintenance physical inventory are not adequate to provide Department management with reasonable assurance that physical inventories are properly safeguarded and managed.

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Scott Haiflich  
Auditor-in-charge

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Rudy Garcia  
Audit Manager

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Steve Schoonover  
City Auditor

## INTRODUCTION

On April 6, 2000, Controller's Office auditors conducted an unannounced inventory of the Fire Department's three warehouses located at 1205 Dart Street. Automotive parts and accessories with a value of approximately \$2.2 million are maintained in the warehouses for the repair and maintenance of light and heavy-duty Fire Department vehicles.

Inventory items with a total value of approximately \$119,000 are also maintained in 20 mobile inventory vehicles used for off-site repairs. Mobile inventory vehicles are assigned to mechanics that repair light and heavy-duty vehicles. Each mechanic is responsible for the inventory of his vehicle. Mobile inventory is most often used when mechanics receive repair assignments while in the field. However, the majority of parts are issued from warehouse stock to service work orders assigned to the mechanics at the beginning of their shift. These parts are not considered part of the inventory of the vehicle.

## AUDIT FINDINGS AND RECOMMENDATIONS

### I. INVENTORY ADJUSTMENTS

#### BACKGROUND

Sound internal control procedures warrant that warehouse stock adjustments be documented, justified and approved by the appropriate level of management. Management should determine the cause of any discrepancy or variance which resulted in an adjustment, and implement steps to prevent recurrence. Adjustment documents should be maintained for review, and adjustments over a predetermined amount/percentage should be reported to upper management.

#### FINDING

Stock adjustments are not documented, justified and approved by management. The lack of adequate internal controls over stock adjustments may result in errors, irregularities and misappropriation of inventory. The inventory count testing of 42 stock keeping units (SKUs) revealed 15 errors between the perpetual records and physical inventory count quantities for an error rate of 36%.

## RECOMMENDATION

We recommend that management develop a form to request, document and approve stock adjustments. The form should minimally include the following fields:

- Part Number
- Location
- Quantity to be Adjusted (+/-)
- Unit Cost
- Extended Cost of Quantity to be Adjusted
- Justification for Adjustment
- Corrective Action to Address the Cause of the Adjustment
- Signature and Date of the Requestor
- Approval Signature of the Division Manager and Date
- Approval Signature of Additional Officials Deemed Necessary and Date

We also recommend that the inventory adjustment request forms be maintained in accordance with the City of Houston retention policy. The stock adjustment process should be documented in the written inventory management procedures recommended in Finding IV of this report.

## II. MOBILE INVENTORIES

### BACKGROUND

Mobile inventory is maintained in 20 vehicles assigned to mechanics that repair light and heavy-duty vehicles away from the 1205 Dart Street repair facility. Mobile inventory is most often used when mechanics receive repair assignments while in the field. However, the majority of parts are issued directly to work orders from warehouse stock before mechanics leave the shop at the beginning of their shift. These parts are not considered part of mobile inventory. Mobile inventory, like inventory maintained in a warehouse, requires procedures with adequate internal controls to properly secure and account for stock items.

### FINDING

Controls over mobile inventory are inadequate. Our sample inventory and testing of inventory procedures and controls on three of the repair vehicles revealed the following:

- Ten SKUs from each of the three mobile inventories tested were selected for sample counting. Errors between the perpetual records and physical inventory count quantities were

5, 3, and 1 for each of the three inventories tested, resulting in error rates of 50%, 30%, and 10% respectively.

- The method of reporting issues from mobile inventory was different for each mechanic. One of the mechanics records issues from mobile inventory on the related work order and turns the work order in to his supervisor. Another mechanic uses parts from the mobile inventory, and then has the warehouse stock issued to the related work order to replenish his mobile inventory. The remaining mechanic completes the Parts Requisition Form to record an issue from mobile inventory. The Shop Manager stated that the Parts Requisition Form is the document used to record mobile inventory issues.
- Mobile inventory is inventoried by warehouse personnel quarterly. However, the mechanics that are responsible for the stock do not participate in the inventories.
- Mobile inventory stock is not inventoried before and after a vehicle is temporarily assigned to another mechanic.
- Manual work orders are used by mechanics when a field repair is necessary for which a system work order was not generated. Manual work orders do not include a signature block for the chauffeur of the vehicle to verify the completion of repairs and the usage of mobile inventory.
- Analysis of usage from mobile inventory is not performed.

#### **RECOMMENDATION**

We recommend that the written inventory management procedures recommended in Finding IV of this report address security and accountability for mobile inventory. The procedures should describe in detail the steps in the mobile inventory management process. Adequate internal controls should be written into the procedures to assure proper management of mobile inventory. Procedures should minimally address issuing stock, replenishment of stock, and physical inventory procedures.

Issues from mobile inventory should be recorded to provide parts usage history. Historical usage of mobile inventory can be used to determine the parts that should be maintained on repair trucks.



### **III. WAREHOUSE SECURITY**

#### **BACKGROUND**

The Department stores inventory in three warehouses located at 1205 Dart Street. Automotive parts and accessories are maintained in the warehouses for the repair and maintenance of light and heavy-duty Fire Department vehicles. The receiving area is attached to the main warehouse. A second area is located above the repair facility administrative offices. The third area, commonly known as the "Barn", houses larger items such as vehicle tires

#### **FINDING**

Security over inventory located in the main warehouse and the area located above the repair facility administrative offices is inadequate. We observed that the overhead door to the receiving area remained open during regular business hours and that area was unattended by warehouse personnel for extended periods. We also observed that the door to the inventory storage area located over the repair facility administrative offices remained unlocked during regular business hours. Adequate security over inventory requires that access to stock be limited to authorized personnel only. Unauthorized access to inventory may result in misappropriation of inventory.

#### **RECOMMENDATION**

We recommend that the overhead door to the receiving area be closed and locked unless inventory is being delivered. Direct access to the receiving area from the outside should be through the personnel door adjacent to the overhead door. The personnel door should also remain locked so that only authorized personnel with keys have direct access to the receiving area. We also recommend that the door to the warehouse location over the repair facility administrative offices remain locked, also allowing access only to authorized personnel.

### **IV. WRITTEN INVENTORY MANAGEMENT PROCEDURES**

#### **BACKGROUND**

A perpetual inventory system should accurately, within a reasonably acceptable error rate, reflect the quantities and value of inventory at any given time. This is accomplished through effective control over inventory management activities (i.e. issuing, receiving, adjusting, physical inventories and securing stock items). Inventory management procedures should be in

writing, contain adequate internal controls and be in sufficient detail to allow employees a thorough understanding of their responsibilities.

**FINDING**

The Department does not have written inventory management procedures. The Support Services section of the Standard Operating Guidelines for Fleet Management lists the tasks necessary to “support the mission of Fleet Command”, and lists the duties and responsibilities of each position related to inventory management. However, procedures describing the steps in the inventory management process are not documented. Undocumented procedures often result in inconsistent application of the inventory management process and inadequate controls.

**RECOMMENDATION**

We recommend that detailed written inventory management procedures be developed. Procedures should describe the steps in the process and identify the personnel responsible for carrying out those steps. Adequate internal controls should be written into the procedures.

**V. INVENTORY CYCLE COUNTS**

**BACKGROUND**

Each month one tenth of the inventory is counted until the entire inventory has been counted over a ten-month period. Inventory is selected and counted based on its location. For example, if rows one through five represent one tenth of the inventory, the items located in those rows would be counted in the first month. If rows six through ten represent the next one tenth of inventory, those items would be counted in the second month.

A cycle count method of conducting physical inventories is often preferred since it can reduce the cost of the inventory process. It can also be designed to concentrate on the stock with the highest risk of error by scheduling multiple inventories of items with the highest issue activity value.

**FINDING**

The current inventory method does not consider an inventory item’s overall issue activity value for the period. Items are selected for inventory without regard to stock movement. Although spreading the inventory of stock over a ten-month

period, based on location, may reduce the cost of the physical inventory process, it does not reduce the risk of quantity errors in the perpetual inventory system.

**RECOMMENDATION**

We recommend that management change their current inventory count method to a true "cycle count" method, focusing attention on stock with the highest issue activity value for the period (previous 12 months). The recommended cycle count method concentrates efforts on the inventory with the highest issue activity value and the highest risk of error. The following is the recommended inventory frequency:

Inventory items should be placed in four categories "A", "B", "C" or "D". The first step is to rank every item in inventory, from the stock unit with the highest issue activity value for the previous 12-month period, to the stock unit with the lowest issue activity value. The total value of all issues for the period should be broken down as follows: "A" items top 80%, "B" items next 15% and "C" items remaining 5%. Finally, "D" items would have no issue activity for the period. The inventory cycle count frequency should be scheduled so that "A" items are inventoried more times annually than "B" or "C" items, and "D" items are sample (or 100%) counted once annually. Quarterly inventories, with dollar activity ranking reports re-generated before each inventory, should be scheduled as follows:

<b>Quarter</b>	<b>"A" Items</b>	<b>"B" Items</b>	<b>"C" Items</b>	<b>"D" Items</b>
First	√	√		
Second	√	√		
Third	√		√	
Fourth				√ *

\* "D" items should be 100% inventoried the first year of implementing this cycle count method to establish an accurate beginning inventory. However, sample counting those items should be considered in subsequent years, since "D" items are made up of stock for which no issue activity was recorded.

# EXHIBIT 1

## CITY OF HOUSTON RESPONDENCE

To Sylvia Garcia  
City Controller

From L. W. Tye  
Fire Chief

Date September 25, 2000

Subject: Inventory Management Audit  
Management Response

The Houston Fire Department has reviewed the findings and recommendations of the City Controller's audit team. We appreciate the help your audit team provided and agree with the recommendations. We offer the following comments in bold relative to the five (5) recommendations.

### 1. INVENTORY ADJUSTMENTS

We recommend that management develop a form to request document and approve stock adjustments. The form should minimally include the following fields.

- Part Number
- Location
- quantity to be adjusted (+/-)
- Unit Cost
- Extended Cost
- justification for adjustment
- Corrective Action to Address the Cause of Adjustment
- Signature and Date of the Requestor
- Approval Signature of the Division Manager and Date
- Approval Signature of Additional Officials Deemed Necessary and Date.

We also recommend that the inventory adjustment request forms be maintained in accordance with the City of Houston retention policy. The stock adjustment process should be documented in the written inventory management procedures recommended in this report.

The Houston Fire Department during the course of the audit developed and Implemented the form suggested. The Assistant Director Is the final signature after the Parts Manager has Investigated any variance. Once the Assistant Director has signed, the actual posting Is completed In the G2K Fleet Management system by someone not in the automotive parts area.

### 11. MOBILE INVENTORIES

We recommend that the written inventory management procedures recommended in this report address security and accountability for mobile inventory. The procedures should describe in detail the steps in the mobile inventory management process. Adequate internal controls should be written into the procedures to assure proper management of mobile inventory. Procedures should minimally address issuing stock, replenishment of stock and physical inventory procedures.

Written procedures will be created to respond to this recommendation. See response to IV WRITTEN INVENTORY MANAGEMENT PROCEDURES.

### 111. WAREHOUSE SECURITY

We recommend that the overhead door to the receiving area be closed and locked unless inventory is being delivered. Direct access to the receiving area from the outside should be through the personnel door adjacent to the overhead door. The personnel door should also remain locked so that only authorized personnel with keys have direct access to the receiving

Views of Responsible  
Officials

# EXHIBIT 1

area. We also recommend that the door to the warehouse location over the repair facility administrative offices remain locked, also allowing access only to authorized personnel.

**Corrected during the course of the audit.**

## IV. WRITTEN INVENTORY MANAGEMENT PROCEDURES

We recommend that detailed written inventory management procedures be developed. Procedures should describe the steps in the process and identify the personnel responsible for carrying out those steps. Adequate internal controls should be written into the procedures.

**Fleet Management has assigned an individual to develop written inventory procedures. The procedures will include at a minimum the purchasing, receiving, issuing, warehousing, stocking, security, transferring, mobile inventories, and cycle count guidelines. Functional positions will be used to identify individual accountabilities. There will be provisions for internal controls within each of the established procedures.**

## V. INVENTORY CYCLE COUNTS

We recommend that management change their current inventory count method to a true cycle count method, focusing attention on stock with the highest issue activity value for the period (previous twelve months). The recommended cycle count method concentrates efforts on the inventory with the highest risk of error. The following is the recommended inventory frequency:

Inventory items should be placed in four categories "A", "B", "C", or "D". The first step is to rank every item in the inventory, from the stock unit with the highest issue activity value for the previous 12-month period, to the stock unit with the lowest issue activity value. The total value of all issues for the period should be broken down as follows: "A" items top 80%. "B" items next 15% and "C" items the remaining 5%. Finally, "D" items would have no issue activity for the period. The inventory cycle count frequency should be scheduled so that the "A" items are inventoried more times annually than "B" or "C" items, and "D" items are sampled (or 100% counted once annually). Quarterly inventories, with dollar activity ranking reports re-generated before each inventory, should be scheduled as follows:

Quarter	"A" Items	"B" Items	"C" Items	"D" Items
First	X	X		
Second	X	X		
Third	X		X	
Fourth				X

\* "D" items should be 100% inventoried the first year of implementing this cycle count method to establish an accurate beginning inventory. However, sample counting those items should be considered in subsequent years, since "D" items are made up of stock for which no issue activity was recorded.

Fleet's current practice was to inventory 10% of the total stock each month. This means that in ten months the entire inventory would be counted. However, certain items are counted daily, i.e., tires.

Fleet is reviewing the entire inventory and categorizing each part as A, B, C. In discussions with the audit team it is understood that single issues with a high value do not necessarily qualify as an "A" item. We will therefore use multiple issues with high values to determine our "A" items.

The City's G2K management information system does not allow for a "D" item. The Department believes that all parts should be counted at least once during a twelve month cycle therefore parts that have no issue activity will be counted once in a twelve month period.

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