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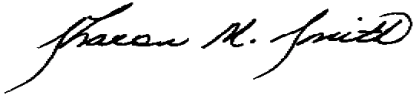
Controls Over the FDIC's Laptop Computer Inventory

DATE: March 28, 2001

TO: Donald C. Demitros
               Chief Information Officer

FROM: Sharon M. Smith
               Assistant Inspector General

SUBJECT: *Controls Over the FDIC's Laptop Computer Inventory*
               (Audit Report No. 01-012)

This report presents the results of the Office of Inspector General's (OIG) audit of controls over the Federal Deposit Insurance Corporation's (FDIC) laptop computer inventory. We performed this audit to assess the FDIC's internal controls over its inventory of laptop computers.

On October 21, 1997, the OIG issued an audit report entitled *Audit of Safeguards Over EDP Equipment* (Audit Report No. 97-103). That audit was a limited scope audit of the practices and procedures in the Washington, D.C. area. We concluded that effective accountability did not exist, especially regarding laptop computers. In addition, on August 28, 1998, the OIG issued an audit report entitled *Computer Equipment and Software Inventories* (Audit Report No. D98-078), which concerned only the FDIC's Dallas office and the prior inventory management system being used by DIRM in the Dallas office. That report cited a lack of segregation of duties and problems similar to those we identified during the current audit. We performed this audit because establishing and maintaining effective accountability controls over computer-related equipment has been a continuing problem at the FDIC.

BACKGROUND

The FDIC spent more than $11.8 million during 1999 for personal computer and local area network (PC/LAN) equipment. Of that amount, $1.3 million (about 11 percent) was spent for laptop computers. For 2000, DIRM budgeted about $16.6 million for PC/LAN equipment. As of December 1, 2000, $8.1 million (about 49 percent) had been spent for laptops and another $2.2 million (about 13 percent) in laptop purchases were planned. Although according to the Chief of DIRM's Fiscal Management Section, DIRM does not plan for any additional laptop purchases during 2001, the FDIC maintains a major investment in laptops. Further, because of the portability and vulnerability of laptops, some of which contain sensitive data, the FDIC needs good inventory management controls.

DIRM is responsible for activities relating to the life cycle management of information technology (IT) assets at the FDIC. To assist DIRM in its responsibilities, in April 1997 DIRM let a $2.5 million contract with Innovative Logistics Techniques Inc. (INNOLOG) to staff and

operate DIRM's distribution centers (DDC) and maintain an inventory management system to assist DIRM in tracking the FDIC's inventory of computer equipment.

In July 1999, DIRM let a $4.1 million contract with INNOLOG. Under this contract, INNOLOG is responsible for the entire life cycle management of information technology assets and the continued staffing of the two DDCs in the Washington, D.C. area. According to the contract, INNOLOG is to provide:

- IT management, including maintaining and enhancing a networked inventory management system for complete nationwide information technology visibility;
- for the receipt, delivery, and storage of IT assets;
- logistics analysis; and
- IT asset inventory system support.

Further, INNOLOG is to conduct physical inventories of IT assets at the DDCs, FDIC headquarters, regions, and field sites as required by DIRM. IT assets include desktops, laptops, mainframes, telephones and other communication equipment, and computer software.

 INNOLOG is also responsible for supporting DIRM's Logistics Management Section (LMS). The role of LMS is to support the acquisition, receipt, and management of the FDIC's IT assets. LMS also coordinates the distribution of IT assets to all sites and maintains the Information Technology Asset Management System (ITAMS), the nationwide inventory management system. As of July 15, 2000, the number of laptops recorded in ITAMS was 4,358. However, the control weaknesses we identified cast doubt on the accuracy of that number.

During the period we conducted our audit, OIG Office of Investigations (OI) special agents were investigating the apparent theft of approximately 65 laptop computers. As of February 8, 2001, the OI special agents had recovered 29 laptops with 4 scheduled to be picked up. OIG special agents are currently attempting to locate the remaining computers.

OBJECTIVE, SCOPE, AND METHODOLOGY

The objective of our audit was to determine whether the FDIC was effectively controlling its inventory of laptop computers. Initially, our audit focused on internal controls over all of the FDIC's information technology equipment. However, because of losses/thefts of laptops and because of the vulnerability to loss or misappropriation of laptops, we revised our audit objective to include controls over laptop computers only. Our audit covered the period January 1, 1999 through September 30, 2000.

To accomplish our audit objective, we interviewed DIRM personnel in the Washington, D.C. area; Dallas, Texas; Boston, Massachusetts; and Chicago, Illinois. We also interviewed INNOLOG personnel. We also reviewed certain aspects of the FDIC's two contracts with INNOLOG, and INNOLOG's standard operating procedures (SOP) and management plan. Specifically:

- To familiarize ourselves with ITAMS, we reviewed policies and procedures for control of laptop acquisitions, laptops already recorded in ITAMS, movement of laptops from one location to another, and laptop disposals.

- To test the accuracy of information recorded in ITAMS, we conducted a physical inventory of laptops at one DDC, compared the laptops maintained by selected laptop pool managers from various division/offices with information recorded in ITAMS, and identified the physical locations and/or the disposition of items in ITAMS' Hubstore. (The Hubstore is a "virtual location" where equipment is temporarily assigned while it is moved between locations).

- To obtain an understanding of physical inventories conducted, we reviewed physical inventory documentation and interviewed DIRM and INNOLOG personnel.

- To evaluate the use of hand receipts, we reviewed DIRM hand receipts maintained by the DDC to determine compliance with Circular 1380.3, Laptop Computer Assignments, Safeguards and Asset Management, dated April 13, 1999. We compared selected hand receipts in INNOLOG's files transferring laptops from one location to another with the information recorded in ITAMS.

- To determine what happened to laptops reported as stolen, we traced the movement of specific laptops in ITAMS.

- To identify oversight duties, we reviewed DIRM's contract with INNOLOG, the DIRM oversight manager's responsibilities as shown in the letter of oversight manager confirmation, and the oversight manager's files relating to INNOLOG's contract.

- To verify the accuracy of barcoded information, we tested whether transfer information shown on various documents was reflected accurately in ITAMS.

- To see if all items to be disposed of actually were disposed of, we compared a sample of laptop disposals with a list of items actually processed and transferred by DIRM to DOA.

- To determine whether disposed of equipment was correctly recorded as inactive, we compared DOA lists of disposals to the ITAMS inventory.

We also reviewed reports prepared by Systems Resources Corporation, a contractor engaged by the FDIC to perform an assessment of ITAMS' functional and technical requirements to assist the DIRM Logistics Management Section with its post-implementation review of ITAMS. We performed our work primarily within DIRM's Resource Management Branch in Washington, D.C. We conducted the audit from July 2000 through October 2000 in accordance with generally accepted government auditing standards.

RESULTS OF AUDIT

We identified weaknesses in DIRM's internal controls over the FDIC's inventory of laptop computers. First, DIRM did not ensure that incompatible duties were properly segregated. Specifically, DIRM and INNOLOG employees had physical access to laptop computers and access to the ITAMS database. Second, we found that FDIC and contractor employees were misusing the Hubstore by assigning missing or unaccounted for laptops to the Hubstore instead of promptly reporting the laptops as missing. Finally, no recent corporate-wide inventory of laptop computers has been performed. As a result of these weaknesses, laptops were vulnerable to theft without detection.

Inadequate Segregation of Duties

Our work showed that internal controls procedures did not provide for the basic segregation of duties necessary to prevent misappropriation without detection. Specifically, all INNOLOG employees working at the DDC could access, enter, and change information in the ITAMS database. For example, the DDC employees who were responsible for handling the laptop receiving functions were also responsible for entering the inventory information into ITAMS. Therefore, these employees had the opportunity to misappropriate newly received laptops by electing to not enter newly acquired laptops in ITAMS. In addition, there was no procedure for independently validating that newly received laptops were recorded or recorded accurately on the ITAMS inventory database. Although there was a procedure to ensure that the number of laptops invoiced agreed with the number received, there was no procedure to independently validate that the number of laptops received was actually entered into ITAMS.

Such internal control weaknesses could have played a role in the apparent theft of the 65 laptops previously mentioned. A DIRM or INNOLOG employee having both physical access to laptop computers and access to ITAMS database could have checked ITAMS to determine whether a particular laptop was recorded in the system. If the employee determined that a laptop was not recorded in ITAMS, the employee could misappropriate the laptop with little fear of detection. Clearly, there is a need to separate the incompatible duties of access to the physical computer inventory and the ability to access and alter the information contained in ITAMS.

During our audit, DIRM took action to improve controls over the receiving and initial recording of laptops in ITAMS. Specifically, on September 29, 2000, DIRM issued an INNOLOG-prepared SOP for the DDC. The newly issued SOP called for tracking item acquisitions from the ordering point (i.e., purchase order forms, requisitions, credit card orders, or other ordering vehicles). However, the SOP was not clear regarding when the ordering point information should be matched against receipts and who should do it. The SOP also called for receipts to be entered into the ITAMS Purchase Order Module (which would also update the ITAMS inventory) but did not adequately describe who, specifically, was to make the entry. We believe that the SOP should be sufficiently detailed to ensure proper segregation of duties.

DIRM management personnel agreed that duties should be segregated and that the SOP should be updated.

Employee Misuse of the Hubstore

Our work showed that FDIC employees were misusing the Hubstore by assigning missing or unaccounted for laptops to the Hubstore instead of reporting the laptops as missing. This practice was in direct conflict with FDIC Circular 1380.3, which requires that employees report any loss, damage, or theft to the nearest FDIC Security Office and notify the party who issued the laptop. The party who issued the laptop is then required to notify the DDC. Further, because there was no procedure to periodically check the Hubstore for items assigned there for an extended period of time, there was little chance that the item would be detected as missing.

On September 26, 2000, 51 laptops were shown in ITAMS as being assigned to the Hubstore. FDIC personnel could not account for 12 of the 51 laptops. For example, 1 of the 12 laptops unaccounted for was assigned to the Hubstore on May 5, 2000. We contacted the property accountability manager (PAM) to whom the laptop was assigned and asked the PAM why he assigned the laptop to the Hubstore. The PAM told us that he had never received the laptop and, because he did not know where it was, he assigned it to the Hubstore. According to the Circular 1380.3, the PAM should have alerted the nearest FDIC Security Office of the "missing" laptop instead of simply assigning the laptop to the Hubstore. It is generally acknowledged that in cases of missing inventory "time is of the essence." That is, any delay in reporting a missing item greatly lessens the chance of recovering the item.

As another example, according to ITAMS, a Boston DIRM contractor employee assigned 6 of the 12 laptops to the Hubstore on February 25, 1999. We contacted the individual and asked him why he assigned the laptops to the Hubstore. He told us that to the best of his recollection he assigned the laptops to the Hubstore because the laptops were being sent back to Washington. However, he could provide no supporting shipping documentation. He also told us that he thought the 6 laptops may have been included among 19 laptops released as part of a program to furnish surplus computers to schools. However, none of the barcodes or serial numbers for the laptops included in the program matched those of the missing six laptops. We also contacted the PAM in Boston to determine the whereabouts of the six laptops. The PAM confirmed that the six laptops were unaccounted for. She researched hand receipts, e-mail archives, and lists for school donations and discussed the situation with DIRM staff who worked in Boston at the time. She informed us that she was unable to find any documentation related to the six laptops and that none of the employees had any recollection of the laptops. In addition to the research performed by the PAM, we reviewed laptop disposals between January 1, 1999 and August 31, 2000, and we could not locate the laptops or determine the status of their disposition.

DIRM has been aware of control problems relating to the tracking of IT equipment and the Hubstore. Specifically, as a result of a partial physical inventory conducted by INNOLOG during the summer of 2000, INNOLOG recognized problems tracking IT equipment. The problems INNOLOG cited include: inappropriate equipment put in the Hubstore and for too long, the placement of unlocated equipment in virtual rooms, asset movement without the proper

records, and equipment missing serial numbers. INNOLOG made recommendations to DIRM to address each of the problems. To address tracking problems, the September 29, 2000 revision to the SOP include the following requirements:

- Each laptop movement must have a request for movement approved by LMS which has been counter signed by the DDC supervisor or manager.

- Movements between the two DDCs must be accomplished through the Hubstore.

- Any approved movement of equipment must be accompanied by a duly authorized hand receipt.

- Faulty equipment accepted by helpdesk technicians must first be removed from the end user or location and transferred to Hubstore in ITAMS before the DDC will accept it.

- INNOLOG personnel will compare the weekly DDC inventory of laptop computers with the detailed laptop computer records in the equipment module in ITAMS. The INNOLOG program manager will provide a root cause analysis on any differences found and report it to the DIRM oversight manager and technical monitor.

DIRM management agreed that the Hubstore was being used incorrectly and that the age of Hubstore items should be periodically reviewed so that Hubstore issues can be resolved in a timely manner.

A Corporate-wide Validation of ITAMS Laptop Information is Needed

Since INNOLOG's contract began in 1997, neither INNOLOG nor DIRM had conducted a complete physical inventory of laptop computers. However, in the summers of 1997, 1998, and 1999 DIRM was able to update the ITAMS database when individual laptop users had their laptops reconfigured with new software. Specifically, as DIRM reconfigured the laptops, it reviewed information on ITAMS and made any necessary corrections to the ITAMS inventory record. Although DIRM's actions were a positive attempt to correct inaccuracies in the ITAMS database, more can be done.

Because of the FDIC's major investment in laptop computers and the control weaknesses we have identified regarding laptops, we believe that periodic corporate-wide validations of ITAMS laptop information are warranted. We fully recognize the inherent difficulties of updating ITAMS by conducting a complete physical count of laptops given the wide geographic diversity of FDIC personnel. Nonetheless, we believe that DIRM should take certain measures to provide greater assurance that information in ITAMS concerning laptop computer inventories is accurate. We are not suggesting that DIRM perform a complete wall-to-wall inventory, which often involves suspending or reducing operations and physically rearranging inventory to facilitate counting. Instead, we believe that DIRM should periodically perform corporate-wide electronic confirmations to improve the accuracy of the information in ITAMS. DIRM management agreed that periodic corporate-wide certification of laptop computers should be conducted.

Other Matters

During our review of laptop serial numbers, we discovered a problem that we believe should be resolved in the next ITAMS update. Specifically, we found that INNOLOG personnel had assigned one laptop serial number to two different barcodes. Then, in helping us research additional serial numbers, DIRM LMS personnel identified another two instances of this occurrence. One serial number should have only one corresponding barcode. Although ITAMS has a control feature that ensures only one serial number can be assigned to a barcode, ITAMS does not have a feature to prevent the alternative situation—more than one barcode being assigned to one serial number. We believe ITAMS should include an automated check for duplicate serial numbers just as it does for duplicate barcodes. DIRM personnel agreed and stated that they would discuss this problem with the system developers.

In addition, we identified another problem that we brought to management's attention during the course of our work. Specifically, we found that the serial numbers related to five laptops had been entered incorrectly in ITAMS. The errors appeared to be caused by data entry problems—letter or digit transposition errors. We provided DIRM with the serial numbers that, according to invoices, should have been entered into ITAMS, and DIRM agreed to physically verify the serial numbers and then correct ITAMS.

CONCLUSION AND RECOMMENDATIONS

Because of the sensitive information stored on many laptops and because the FDIC is moving forward with plans to replace its desktop personal computers with docking laptop computers, thereby greatly increasing the number of laptops in its inventory, it becomes even more important to properly control that inventory. Further, the concerns noted in this report can apply to all types of IT equipment, not just laptops. Accordingly, we recommend that the Chief Information Officer work with INNOLOG to:

(1)   Segregate data entry duties from receiving duties and ensure that personnel that receive equipment do not also have the ability to enter and/or modify information in ITAMS. (The SOP should be revised to specify who is to perform each step.)

(2)   Periodically review the age of items assigned to the Hubstore and timely resolve all Hubstore issues.

(3)   Periodically conduct corporate-wide certifications of laptop computers whereby FDIC personnel provide information (such as computer serial number, computer make and model, etc.) on the laptops in their possession.

(4)   Include an automated check for duplicate serial numbers in the next ITAMS update.

CORPORATION COMMENTS AND OIG EVALUATION

On March 19, 2001, the FDIC's Chief Information Officer, provided a written response to a draft of this report. The Chief Information Officer's response agreed with and provided the requisites for management decisions on all four recommendations. We did not summarize the responses because the actions planned or completed are the same as those recommended. Appendix II to this report presents the responses.

The Chief Information Officer's response also noted that DIRM had corrected the problems noted under Other Matters in the report.

Appendix III presents management's proposed actions on our recommendations and shows that there is a management decision for each recommendation in this report.

FDIC

Federal Deposit Insurance Corporation
3501 North Fairfax Dr., Arlington, VA 22226   Office of the Chief Information Officer

March 19, 2001

TO: Sharon M. Smith
               Assistant Inspector General

FROM: Donald C. Demitros
               Chief Information Officer

SUBJECT: DIRM Management Response to the Draft OIG Report Entitled, **"**Controls Over
               the FDIC's Laptop Computer Inventory" (Audit Number 2000-207)

The Division of Information Resources Management (DIRM) has reviewed the subject draft
audit report and generally agrees with the findings and recommendations. Responses to each of
the specific recommendations (1 through 4) directed to DIRM are provided below.

DIRM would also like to respond to one other subject addressed in the draft report under Other
Matters. The report stated that the OIG found that the serial numbers relating to five laptops had
been entered incorrectly in ITAMS and the errors appeared to be caused by data entry problems.
DIRM was able to verify the serial numbers on all five of the laptops and corrected the ITAMS
errors.

Management Decision:

Recommendations: We recommend that the Director, DIRM, work with Innolog to:

(1)   Segregate data entry duties from receiving duties and ensure that personnel that receive
      equipment should not also have the ability to enter and/or modify information in ITAMS
      (The SOP should be revised to specify who is to perform each step.)

      DIRM Response: Innolog receiving and ITAMS data processing activities were
      segregated, effective January 22, 2001. Effective March 16, 2001, the SOP was revised to
      reflect this procedural change.

(2)   Periodically review the age of items assigned to the Hubstore and timely resolve all
      Hubstore issues.

      DIRM Response: On March 1, 2001, via a joint DIRM memorandum from the Deputy
      Director of Information Technology Management, and the Assistant Director of Client
      Services, each DIRM Regional Site Manager, Headquarters Property Accountability
      Manager, and Logistics Management Section (LMS) management was directed to review a
      report of pending Hubstore items, coordinating with other regional sites as may be required,

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to ensure that appropriate ITAMS transactions are made to move any pending Hubstore items to the correct site. All such move transactions must be supported by the physical identification of the equipment in question, or documentation supporting that the equipment was disposed. All Hubstore cleanup activities must be completed by Monday, April 16, 2001. By April 16th, site representatives are to notify their respective Client Services Branch or Logistics Management Section management, as appropriate, of any remaining unresolved items. A field entitled 'Resolution' was included in the Hubstore report to enable sites to record how the item was or should be resolved. In addition, sites were reminded that the Hubstore should only be used as a virtual, temporary holding place for equipment being transferred between sites.

Following the completion of the aforementioned Hubstore clean-up activities, LMS will generate a report reflecting all items that have been in the Hubstore for more than 15 days. This report will be generated and distributed to Regional Site Managers and LMS staff on a biweekly basis for site Hubstore resolution.

(3)   Periodically conduct corporate-wide certifications of laptop computers whereby FDIC personnel provide information (such as computer serial number, computer make and model, etc.) on the laptops in their possession.

DIRM Response: DIRM conducted corporate-wide certifications during the 4th quarter of 2000. DIRM will continue to conduct corporate-wide certifications of laptop computers by having FDIC personnel provide information (computer serial number, computer make and model, etc.) on the laptops in their possession on an annual basis.

(4)   Include an automated check for duplicate serial numbers in the next ITAMS update.

DIRM Response: With the completion of the March 2001 implementation of ITAMS Version 4.03, the ITAMS-imbedded SQ4 reporting tool was replaced with Business Objects, DIRM's standard corporate query tool. This significantly improves reporting performance and capabilities. During April 2001, a standard query report will be developed for identifying duplicate serial numbers.

Please address any questions to DIRM's Audit Liaison, Rack Campbell, on (703) 516-1422.

MANAGEMENT RESPONSES TO RECOMMENDATIONS

The Inspector General Act of 1978, as amended, requires the OIG to report the status of management decisions on its recommendations in its semiannual reports to the Congress. To consider FDIC's responses as management decisions in accordance with the act and related guidance, several conditions are necessary. First, the response must describe for each recommendation

- the specific corrective actions already taken, if applicable;
- corrective actions to be taken together with the expected completion dates for their implementation; and
- documentation that will confirm completion of corrective actions.

If any recommendation identifies specific monetary benefits, FDIC management must state the amount agreed or disagreed with and the reasons for any disagreement. In the case of questioned costs, the amount FDIC plans to disallow must be included in management's response.

If management does not agree that a recommendation should be implemented, it must describe why the recommendation is not considered valid. Second, the OIG must determine that management's descriptions of (1) the course of action already taken or proposed and (2) the documentation confirming completion of corrective actions are responsive to its recommendations.

This table presents the management responses that have been made on recommendations in our report and the status of management decisions. The information for management decisions is based on management's written response to our report.

Rec. Number	Corrective Action: Taken or Planned/Status	Expected Completion Date	Documentation That Will Confirm Final Action	Monetary Benefits	Management Decision: Yes or No
1	INNOLOG receiving and ITAMS data processing duties have been segregated.	March 28, 2001	INNOLOG Standard Operating Procedures	N/A	Yes
2	A DIRM memorandum directed designated managers in headquarters and the field to perform specific Hubstore clean-up activities; DIRM modified the Hubstore report to include a resolution field; and DIRM LMS will print a biweekly report of items remaining in the Hubstore for more than 15 days.	April 16, 2001	DIRM memorandum and Hubstore reports	N/A	Yes
3	DIRM will conduct Corporate-wide certifications of laptop computers on an annual basis.	March 28, 2001	Certification requests and responses	N/A	Yes
4	DIRM will modify ITAMS Version 4.03 to include a standard report query to identify duplicate serial numbers.	May 1, 2001	Standard Query Report	N/A	Yes