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THESIS

INVENTORY ACCURACY IN NISTARS CONTROLLED
NON-MECHANIZED WAREHOUSES

by

Stephen Douglas Westhoven

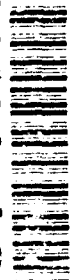
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Inventory Accuracy in NISTARS Controlled
Non-mechanized Warehouses

by

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Lieutenant, United States Navy
B.B.A., University of Toledo, 1972

Submitted in partial fulfillment of the
requirements for the degree of

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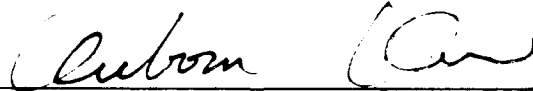
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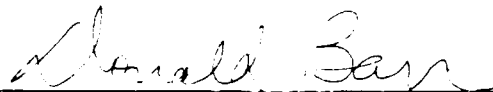


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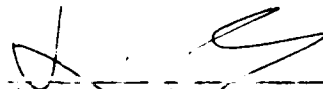
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ABSTRACT

This thesis is a study of the inventory accuracy in non-mechanized warehouses under the NISTARS automated warehousing system. This thesis is designed to answer two questions. Is there a significant difference between the NISTARS non-mechanized warehouses and the other types of warehouses? What are the reasons for the difference if one exists? The data were extracted from the official inventory reports of the Naval Supply Center, San Diego, CA. To ensure the data were representative of the inventory position of all warehouses under the control of the supply center, they were taken from the NAVSUP required quarterly STATMAN random sampled inventories.

The study indicates that there is a significant difference (13% less) in the inventory accuracy in non-mechanized warehouses under NISTARS control. Also, that the research codes used in the inventory reports are not effective. Additionally, the data output from the inventory reports is not fully utilized to improve the system.

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I. INTRODUCTION

One of the major responsibilities of the Naval Supply System is the effective and efficient utilization of public resources to support Navy fleet and shore establishments. One portion of this responsibility is inventory management. This includes procurement, transportation, receipt, storage, issue and accountability of material necessary to carry out the mission of the Navy. This can range from managing material worth millions of dollars to just pennies.

A part of the inventory management program is inventory accuracy. This is a measure of the degree to which the quantity on the book records reflects the actual quantity on the shelf. The accuracy of these records is essential for Navy fleet and shore operations support. The impact of inventory inaccuracies can be serious and far-reaching. Some examples are:

- * Readiness and support for the fleet are affected. When material cannot be found in its designated storage location the unit will experience a delay in receiving the material that might range from a couple of days (if it is available at another stock point) to several months or longer (if the item must be procured). If the material in the location is overstated on the records, eventually it will lead to a stockout situation and delays.
- * Utilization of limited Navy resources occurs unnecessarily. When material is lost, stock fund money may be spent to procure the item. If the material is located after the procurement has happened, you have additional material on hand. While this material will probably be

used, it could possibly have delayed the procurement of other needed material unnecessarily.

- * The impact on the creditability of the Navy to manage the public resources can be serious. Annually the Navy must submit a budget request to the Administration for funds to operate. If the perception is that the Navy cannot effectively and efficiently manage the public funds, budget submissions are critically reviewed especially in times of national economic difficulties.

To understand the magnitude of the problem, if a stock point had an inventory valued at \$4.7 billion and the inventory accuracy rate was 99.9%, the impression would be that the stewardship of the public trust was in good hands. But, with an annual inventory adjustment rate of one-tenth of one percent (.001), the dollar value of the adjustment would be \$4.7 million. Stated in this fashion it would appear that the stewardship was lacking. This perception problem is another reason inventory accuracy is so important.

This perception problem is particularly important for the Navy because of well-publicized inventory problems that surfaced in the late 1970's and early 1980's. The conclusions drawn from the Naval Supply Systems Command's (NAVSUP) 1982 study of the problem were directly tied to human errors as the main cause of inventory adjustments. To correct that situation the Navy undertook several initiatives to reduce the human error factors and to improve inventory accuracy. Some of these included increasing personnel, increasing training, updating the computer system and increasing automation. This

increased automation is called Naval Integrated Storage Tracking And Retrieval System (NISTARS).

NISTARS is a computer-controlled mechanized warehouse system. It is designed to have complete control of the material from the time it is processed through the receipt section until it leaves the shipping dock. This is accomplished by the computer directing every action that is to take place. It controls not only the actions of the machines but also the humans that interact with it. This control was essential to improve the inventory accuracy of the system.

Even with this control there are still problems. The two major ones are the interface with the Uniform Automated Data Processing System--Stock Point (UADPS-SP) and the extension of NISTARS to control non-mechanized warehouses. The difficulties in operating in these two areas has created additional inventory inaccuracies. Because of the complexities involved, the solutions are not clear. Much work has gone into these problems but more research is still required to find solutions.

The focus of this study is to investigate the effects of NISTARS on the inventory accuracy of non-mechanized warehouses. The current objective of the Navy is to place all non-mechanized warehouses under NISTARS control in the near future. This study is to attempt to determine the effect on inventory accuracy of non-mechanized warehouses when placed

under NISTARS control and identify the reasons for the difference if any.

The approach is to look at the information generated in the Statistical Accuracy Techniques and Measuring Analysis (STATMAN) random sample inventories including the computer-generated reports. The STATMAN inventories are being used because they are taken across the entire inventory. The results of these inventories then can be considered as representative of the whole inventory. This information is contained in printed material and has been manually input to a personal computer. It has been sorted first by location and then by research code. The research code is assigned to show the status of the inventory (if an adjustment was made or not and the reasons). These data will be analyzed to determine if there is a difference in accuracy rates between the areas and if any reasons for the difference are evident.

The structure of this thesis is as follows. The first chapter is an introduction. The second is a discussion of the UADPS-SP and NISTARS systems and the interface between them. The third chapter is a discussion of the inventory policies and procedures utilized in NAVSUP. Chapter IV is a presentation of the methodology used in the study, the data collected, and the results of the analysis. Chapter V gives the conclusions and recommendations.

II. BACKGROUND

In researching the background material for this subject, we found that the information available through the library on the subject of inventory accuracy was extremely limited. The vast majority of available literature is on inventory control and inventory models in particular. Therefore the bulk of the information used in this report was obtained from government publications and instructions.

UADPS-SP is the standard Department of the Navy (DON) computerized system for supply and financial management at Stock Points. In 1961 a committee was formed by NAVSUP to standardize the mechanized procedures and equipment at Stock Points. The actual development of the applications to be implemented in the UADPS-SP program was assigned to various Stock Points. By 1963, the first segment of UADPS-SP had been installed on the IBM 1410 computer system.

As development of UADPS-SP progressed, the control and coordination between the various applications became more difficult. It was decided that it would be more advantageous for the development of the application programs if the design and maintenance of the UADPS-SP programs was placed under one central organization. By the middle of 1964, the Data Systems Support Office (DASSO) was established. This office has now become the Fleet Material Support Office (FMSO) and is now the

major design facility for automated programs for the Navy. It is located in Mechanicsburg, PA.

From the very inception of the program, a climate of continual change was established. In 1965, most of the remaining Stock Points were converted to the new system. In addition to these changes there was also a major hardware change being implemented at the same time. This hardware upgrade required that the operating system for UADPS-SP be revised which created a requirement for the complete reassembly of all UADPS-SP programs. This meant that it was necessary to rewrite or originate 125 major UADPS-SP programs. Included in this process was the requirement to implement the new Military Standard Transaction and Reporting Procedures (MILSTRAP), along with certain major financial changes. Due to the size of this undertaking, dual systems were required to be maintained for the five-month period that this took place.

The next major innovation to the UADPS-SP system came in 1970 with the development of the Multiple File Concept (MFC). Under this system the files of the different independent supported activities (satellites) were on removable disks that would be switched at predetermined times to run a satellite's program cycle and then switched back to the host system. "Essentially, then, all of the UADPS-SP programs become accessible for supporting the UADPS-SP (MFC) system user as an independent supply and accounting activity in a real-time/batch processing mode." [Ref. 1:p. 2-5] This made the

satellite like all other users except that it must rely on the host for computer time and either pass the batch data over communication lines or physically transport it to the host.

This system proved not to be ideal for several reasons and another new system was developed and implemented in 1971 called Multiple Activity Processing System (MAPS). This coincided with the selection of the Burroughs 3500 computer system. This system is a COBOL-based system and the UADPS system needed to be converted to operate in it. This new framework for the third generation computer system was called MARK-II.

MARK-II provided the opportunity to change the environment under which a program is processed. File-level controls of user data are enforced through file naming standards. Record-level user identification is provided for most transactions and all transaction/reconstruct data. User parameters are no longer patched into programs but are obtained from a System Constant Area (SCA). True multiprogramming is under the guidance of the Master Control Program (MCP), the operating system provided by Burroughs. [Ref. 1:p. 2-6]

The major goal of this new system was to provide much improved support to the satellite users. It eliminated the need for transporting batch input/output. Data are transmitted to the host from a minicomputer at the satellite. The output is then transmitted back to the satellite utilizing the new Data Communications Handler (DCH) System. This eliminates expensive overhead while providing a responsive system for control of job stream data and recovery.

Another major change during this period was the conversion from Federal Stock Number (FSN) to National Stock Number (NSN). This change was made to add a two digit code to indicate the country of origin of the stock number. This then required a modification of virtually the entire UADPS-SP master program library.

Other changes to UADPS-SP in the late 1970's were the introduction of Integrated Disbursing and Accounting (IDA) for the financial management systems area. Uniform Management Reports (UMRs) were implemented for the financial resources management system. The Financial Improvement Project (FIP) refined the Financial Inventory Control and Stores Accounting systems processing. System Information Retrieval (SINR) and System Information Maintenance (SINM) were introduced to optimize response time frames for all basic data retrieval functions. These were some of the major enhancements to the main-line UADPS-SP supply processing modules that occurred during this time frame.

During the 1980's many other significant changes have occurred that affects UADPS-SP. Early in the 1980's the system was switched to the Burroughs 4800 computer system. In the mid-1980's the SPLICE program was implemented. This provided a second computer, TANDEM, that mirrored the Burroughs and basically acted as a front end processor in that all transactions were processed on the TANDEM and it updated the masterfiles which were maintained in the Burroughs. This

system was to improve the processing and response time of the whole system. Another project, SPAR, was to replace UADPS-SP but before implementation it was stopped to develop a DOD-wide computer system.

As the history of UADPS-SP reveals, it is a system that has been under some major revision since its inception. It is also a system that is obsolete and scheduled for replacement. Yet this system maintains the current official records for the Navy. New systems must be able to interface with UADPS-SP to update the official records and UADPS-SP must be able to interface with all these new systems to keep them updated.

NISTARS is the newest system developed for the Navy to improve material handling and inventory accuracy. It is an automated warehouse system that is designed to have complete cognizance of the material under its control. This is accomplished by providing,

...constant tracking and process control of virtually all aspects of physical distribution functions from material receipt, location assignment, storage, retrieval, shipment consolidation and preparation of delivery documentation. NISTARS also performs other important tasks such as physical inventory management, shelf-life control of perishable stock, self-directed audits and database reconciliation, customer service inquiries, and management reports. [Ref. 2:p. 2]

This system was designed to modernize supply operations, increase productivity, increase the accuracy of inventory management and improve responsiveness to customer requirements.

NISTARS is a complete computer-controlled distribution processing facility. Material is located in high-rise storage complexes and is stored in bins, racks, or pallets depending on the size or weight of the material. The ministacker complex is used to store small fast moving bin items by using a robotic mini-load system. The slower-moving bin items, rackable items, and palletized items are stored and retrieved by people who ride specially designed manned storage and retrieval machines (MS/RM). Conveyors or Automated Guided Vehicles (AGV's) are utilized to move material throughout the mechanized warehouse. The conveyor system utilizes bar-coded labels affixed to the bottom of "slave pallets" or "tote pans" or even conveyable cartons to direct material to the correct destination.

The central computer directs all activity in the automated warehouse and is known as NISTARS Central Control System (NCC). It is a TANDEM TPX multiprocessor computer system designed for an on-line transaction processing environment. NISTARS workstations interface with this computer. These are equipped with an Intelligent Remote Terminal (IRT). This terminal itself is a computer and can have several peripheral devices attached to it. These may include, in addition to the standard devices of a Central Processing Unit (CPU), Cathode Ray Tube (CRT) display, keyboard, and badge reader, printers or cube/weight scales or barcode wands. For security reasons, access is granted only to those that have the proper badge

that the computer recognizes and the correct password. If an attempt to gain access is tried without these, a supervisor's terminal is notified by the computer. Each individual IRT can be programmed to perform a specific function. This is accomplished by a download from the NCC. Not all functions can be performed at all stations.

Besides having control of the automated warehouse, in 1988 NISTARS was given control of several non-mechanized storage areas. In these areas all work is accomplished by manual labor or the use of MHE (Material Handling Equipment) such as pallet jacks or forklifts. They also contain both the IRT from NISTARS and the Burroughs terminal from UADPS-SP. The Navy plans to bring all the non-mechanized warehouses eventually under NISTARS control to eliminate confusion in the warehouses.

The interface between NISTARS and UADPS-SP is an on-line interactive system. The exception to this is the physical inventory program which operates in a batch posting mode. This is designed to capture all the infloat activity to enhance the reconciliation process with the UADPS-SP database.

Due to the different processing methodologies employed by UADPS-SP and NISTARS (pre-post and post-post respectively) in maintaining asset balances, the quantity of material that they reflect as on-hand and available for issue will not necessarily be identical at any specific point in time.
[Ref. 3: p. 6-5]

Both systems must exercise positive control over all infloat transactions to insure that the inventory process functions

smoothly. To assist in this, NISTARS is required to adjust its count by the cumulative value of all its infloat transactions prior to reporting to UADPS-SP.

The development of a computer system to control the Navy's inventory has been a dynamic process. From the very beginning the physical size and data requirements have grown steadily. The effort to continually improve has dictated many advances, including the latest, NISTARS. Along with all the benefits the new systems have brought with them, they also have brought many problems. This chapter has discussed the development of the current Navy system for control of its inventory. The next chapter will discuss the procedures for monitoring that control.

III. PHYSICAL INVENTORY PROCEDURES

The Physical Inventory Program as designated by the Department of Defense is comprised of four distinct functions. They consist of location survey, location reconciliation, physical inventory, and quality control checks. In this study we concentrate on the physical inventory aspect only.

Physical Inventory, according to NAVSUPINST 4440.115G, is a procedure,

...which determines if the stock point record balance is or is not in agreement with the assets on-hand at the storage site. Physical inventory consists of physical counts of the material in the warehouse and comparison of those counts with the stock point record balance after consideration of recent in-process transactions (e.g., receipts, issues, etc.). [Ref. 4:p. 13]

The stock points are responsible to place emphasis on the Inventory Program, allocate the resources to it, establish it as an organizational component separate from stock control and warehouse components, conduct random sample inventories on a quarterly basis, prepare annual schedules, conduct the inventories, reconcile inventories, prepare reports, and review and evaluate performance. This is required to meet the goal of the Navy Physical Inventory Program to establish and improve the inventory accuracy and accountability of material in stock point custody.

Under NAVSUP guidelines there are two basic types of inventories: scheduled and unscheduled. There are some basic

similarities between the two types and the general methodology of conducting inventories. Under the NAVSUP Inventory Program, to conduct an inventory the first thing that occurs is the request for the inventory. This can come from a number of different sources depending on the type of inventory. Next is the physical count of the material in the location (for NISTARS locations the book balance in NISTARS is used for the first count). Post-count validation and preadjustment research are the next two steps. The last step to "complete" the inventory is the recording of the adjustment if necessary. The reason for the quotes around the "complete" is that there is another step in the inventory process: causative research, that is started after the inventory adjustments are posted to the recorded that can change the adjustment due to more in-depth research.

To understand the process better, we discuss the scheduled and unscheduled inventories in more detail. The unscheduled inventory arises as the need occurs and can be initiated from several sources:

- * warehouse refusals.
- * in-house receipt losses.
- * location survey variances.
- * local requests for known or suspected imbalances.
- * ICP (Inventory Control Point)/DSC (Defense Supply Center) requests.

These inventories must be completed within 15 days except for warehouse refusals which must be done in seven days. Automatic controls at ICP's and DSC's will cancel an inventory if the adjustment is not received within that time. In such cases, the resources utilized by the stock point will have been wasted. If an inventory is canceled it must be started again from the beginning.

The scheduled inventory, as the name implies, is a planned evolution and is scheduled for completion during the fiscal year. There are several types of inventories that must be completed on an annual, semi-annual, quarterly or monthly basis and come from several sources. Some of these are:

- * random statistical sample inventory.
- * nuclear water chemicals.
- * level I/SUBSAFE (submarine material).
- * subsistence (food).
- * repairable support inventory assets.
- * bulk petroleum products.
- * hazardous material.
- * ICP active item inventories.
- * arms and ammunition.
- * narcotics.
- * classified material.
- * pilferable items.
- * radioactive items.
- * inert nuclear ordnance material.

- * SERVMARTS.
- * shop stores and ready supply stores.
- * W purpose (nonconsumable fixed allowance) assets.

Not all of this material is carried at all stock points, but as the list indicates, the inventory workload can be substantial. These inventories must be completed within 30 days. The longer time is allowed because this type of inventory is usually larger than an unscheduled inventory. Coordination with requesting activities is important so that the two inventories conducted at both activities coincide in order to preclude cancellation problems.

The following is the general procedure to conduct a scheduled inventory. Seven to 15 days prior to the actual cutoff date (the day the inventory is to begin) the request is submitted to the computer. This is done to capture any infloat transactions. These are transactions that occur after the inventory begins that could affect the record balances of the items to be inventoried. This is necessary because physical inventories in NAVSUP activities are conducted on an "open for business as usual" [Ref. 4:p. 18] basis. That means that the inventory is not frozen and the normal supply activity continues as usual.

On the actual cutoff date, the count cards are produced and the first count of the material begins. There are two exceptions to the first count being an actual count of material in the designated location. The first is material in

"M" condition (material in repair, renovation, rework, or assembly) and the second is material under NISTARS control (except for STATMAN inventories where an actual physical count is used for the first count). For these two cases instead of an actual count the book count is used for the first count. When the first counts are complete, they are input into the Automatic Inventory Reconciliation (AIR) program.

The AIR program will compare the first count against the record balance. If the first count matches the record balance, a zero adjustment is input and the inventory of that item is considered complete. If there is a discrepancy between the first count and the record balance, the AIR program will calculate the effect of the infloat transactions on the record balance and, if this calculation results in a match, a zero adjustment is input and the inventory on that item is complete. If the balances and the counts still do not match and the extended dollar value of the difference is less than \$800 (and the item is not controlled), then the adjusted count is entered in the records and the inventory of the item is considered complete. But, if the extended dollar value is greater than \$800, then the program will generate a second count card and a 60-day printout of the transaction ledger to be used by the preadjustment clerks to reconcile the second counts with the record balances. An exception to this is a controlled item (e.g., classified material, narcotics, etc.)

which is treated the same as any item whose extended dollar value is over the activity's causative research threshold.

If the adjusted second count matches the record balance at cutoff, a zero adjustment is input and the item is considered complete. If the first and second count do not match and the extended dollar value is below the activity's causative research level, the second count is used to adjust the record balance and the inventory is considered complete for that item. A third count will only be taken if the extended dollar value is above the activity's causative research threshold (or the item is controlled). If the adjusted third count matches the record balance at cutoff, a zero adjustment is input and the inventory is considered complete. If the third count matches the first or second count, the adjusted third count will be used. If the adjusted third count does not match the first or second, use the count that is the closest to the record balance.

The preadjustment clerks will review no more than 60 days of the transaction ledger to determine the possible cause for the discrepancy. Based on their research, some of the adjustments will not be made. When all research has been completed, all adjustments will be input and the inventory will be complete. This is, of course, if all research is accomplished within the required 30 day time frame. Not all items will be completed during the time required and those

items will show as canceled on the inventory report and have to be reinventoried from the beginning.

The final phase of the inventory process is the causative research phase. This begins when the inventory adjustments have been input to the records and the inventory is "completed." "The purpose of causative research is to identify, analyze, and evaluate the causes of inventory adjustments with the goal of eliminating the contributing errors" [Ref. 4:p. 1] This research is to be completed within 45 days after the completion of the inventory. This research is to go back as far as two years from the date of the inventory or to last inventory on that item, whichever is shorter. Based on the conclusions discovered in this process, inventory adjustments can be made to the records.

Scheduled inventories were an important part of the inventory accuracy program. They were conducted as wall-to-wall inventories. In terms of costs, this type of inventory is the least expensive to conduct. As the range of line items grew, the cost to complete wall-to-wall inventories grew also. Ways to be more cost effective and achieve the desired results had to be developed. This led to the development of the STATMAN random sample inventory. Normally a random inventory is more expensive to use. But the number of line items required to be inventoried under STATMAN, to provide the required information, is significantly less. This reduces the

total cost of the inventory program while providing the required amount of information.

The type of inventory we will be looking at is the STATMAN scheduled inventory which is required to be completed quarterly at the stock points. The fourth quarter STATMAN is the basis for the inventory schedule for the next fiscal year. It can also be the basis to change the inventory schedule based on the results of the quarterly STATMAN inventories.

STATMAN is a tool developed to assist the inventory managers. "STATMAN provides the inventory manager with the unique capability to stratify inventories, randomly determine samples, and receive statistically valid item and financial accuracy statistics on many facets of the stock point's inventory." [Ref. 5:p. ii] This type of inventory can provide important information from even small samples. It also provides reliable measures of inventory accuracy for small investments of resources.

The inventory manager can select from among 17 attributes to tailor an inventory to areas that the manager may want to look at specifically. These are:

- * cog (cognizance symbol).
- * location.
- * unit price.
- * condition code.
- * purpose code.
- * SMIC (Special Material Identification Code).

- * MCC (Material Control Code).
- * storage code.
- * security code.
- * unit of issue.
- * FSC (Federal Supply Class).
- * shelf life code.
- * reservation quantity.
- * on-hand quantity.
- * date of last inventory.
- * VAD (Value of Annual Demand).
- * average quarterly demand.

The inventory can be divided into as many as 99 segments with each segment further defined by up to eight of these attributes. With these defined for the inventory, the inventory manager selects the confidence level he desires and the STATMAN program calculates the required statistical sample size. From this data STATMAN will estimate the accuracy of the entire population. Since STATMAN is a random sample inventory taken across the stock point's entire inventory, the results generated from these inventories can be used to compare the inventory accuracy between the three distinct inventory control areas: NISTARS mechanized, NISTARS non-mechanized, and UADPS-SP non-mechanized. The STATMAN program generates several reports in a variety of formats that can be used for various types of analysis. The UJ95 report used for this study gives a line item break down of the results of the

inventory. The information produced in this report includes the following (to mention a few): stock number, cog, research code, adjusted quantity, unit price, adjustment value, and location. From this information we can sort by location to determine which of the three areas the line items belong to. Next, the data are sorted by research code to determine if the item has been adjusted or not. Then the inventory accuracy percentages in each of the areas can be calculated.

This chapter laid out the basic ground rules for conducting a physical inventory in the Navy Supply System. The rules and procedures can be complex and difficult to follow because of the vast amount of information that is required for an inventory. In the next chapter we describe how we used some of these data to analyze the current inventory accuracy position of the three different areas at the Naval Supply Center (NSC), San Diego.

IV. METHODOLOGY AND DATA ANALYSIS

The three primary sources of data utilized in this study were official publications, official inventory records, and personal interviews. The official publications at NSC, San Diego provided the background information on the systems and procedures used for inventory control studied in this report.

Data were taken from UADPS-SP computer reports on inventory status titled UJ-95, a sample of which is in Appendix A. Appendix B contains a detailed list of the Error Classification Codes and their definitions. The research codes in the UJ-95 used to designate the outcome of the inventory on a particular line item are identical to the Error Classification Codes in Appendix B.

Another source of information was personal interviews with several key personnel at the Naval Supply Center, San Diego. They were:

- * Carol Mott, NISTARS Project Officer.
- * Janet Nesselth, Director of Physical Inventory.
- * Sarah Aguirre, Deputy Director of Physical Inventory.
- * Deena Lee, NISTARS System Analyst.
- * Phoebe Garcia, NISTARS System Analyst.
- * Julie McCullough, UADPS-SP System Analyst.
- * LCDR Bill Schworer, Director, Code 600.
- * John Doyle, Inventory Accuracy Officer.

Approximately 106,000 line items are inventoried annually (both scheduled and unscheduled) at NSC, San Diego. Many of these inventories are directed at specific areas (such as clothing, jet engines, subsistence, etc) and not representative of the total inventory picture at the supply center. However, all supply centers are required to conduct a STATMAN inventory quarterly over the entire range of material under the supply center's control. These inventories are used in this study to determine the inventory accuracy rates and the reasons for the adjustments. The UJ-95 report from UADPS-SP contains both the location information and the research codes assigned which allows us to sort and segregate them into the three different areas under consideration. This information is used to answer the two research questions we are concerned with: the inventory accuracy comparison between areas and the reasons for the errors based on the research codes.

During FY90 three of these STATMAN inventories were conducted at NSC, San Diego. They were completed during the second, third, and fourth quarters. They were composed of 1471, 2022, and 1596 line items, respectively. These data were manually sorted and categorized from the STATMAN printouts. The result of this is presented in Table 1.

There are approximately 470,000 line items at NSC, San Diego. Of the three areas under consideration, UADPS-SP is in control of the largest number of line items. NISTARS is the second and NISTARS non-mechanized is the third (about 2% of

TABLE 1

LINE ITEM BREAKDOWN BY AREA AND QUARTER

	NISTARS	NISTARS NON-MECH	UADPS-SP NON-MECH	CUMULATIVE
2ND QTR	594 (40.4%)	21 (1.4%)	856 (58.2%)	1471 (100%)
3RD QTR	748 (37.0%)	28 (1.4%)	1246 (61.6%)	2022 (100%)
4TH QTR	570 (35.7%)	30 (1.9%)	996 (62.4%)	1596 (100%)
TOTAL	1912 (37.6%)	79 (1.6%)	3098 (60.8%)	5089 (100%)

the total line items) since it is basically one warehouse, building 322. That relationship is evident in Table 1 by the number of line items inventoried in each area by quarter. The percentages are roughly the same in each quarter. This table then gives us the total number of line items inventoried in each of the different areas in each quarter and the cumulative results as well.

The line items in Table 1 for each area and each quarter were further sorted by research code to determine if an adjustment was made or not. The results are contained in Table 2. A visual inspection of Table 2 shows that the percentage of adjustments in each area is approximately the same for each quarter. The NISTARS area ranges from 21% to 23%, the UADPS-SP area from 24% to 27%, and the NISTARS non-mechanized area ranges from 36% to 43%.

TABLE 2
SUMMARY OF UJ-95 RESULTS

	2ND QTR	3RD QTR	4TH QTR	CUMULATIVE
NISTARS				
no adjustment	471 (79.3%)	579 (77.4%)	440 (77.2%)	1490 (77.9%)
adjustment	123 (20.7%)	169 (22.6%)	130 (22.8%)	422 (22.1%)
NISTARS NON-MECH				
no adjustment	12 (57.1%)	18 (64.3%)	18 (60.0%)	48 (60.8%)
adjustment	9 (42.9%)	10 (35.7%)	12 (40.0%)	31 (39.2%)
UADPS-SP NON-MECH				
no adjustment	644 (75.2%)	307 (72.8%)	757 (76.0%)	2308 (74.5%)
adjustment	212 (24.8%)	339 (27.2%)	239 (24.0%)	790 (25.5%)
TOTAL ITEMS INVENTORIED NISTARS				
	594	748	570	1912 (37.6%)
NISTARS NON-MECH				
	21	28	30	79 (1.6%)
UADPS-SP NON-MECH				
	856	1256	996	3098 (60.8%)

Figure 1 shows the relationship between the three areas based on the percentage of adjustments from Table 2. Figure 1 clearly shows the NISTARS non-mechanized area has the highest adjustment rate of the three for each quarter. Figure 2 is the pictorial display of the cumulative data from Table 2. As in Figure 1, it clearly shows that the NISTARS

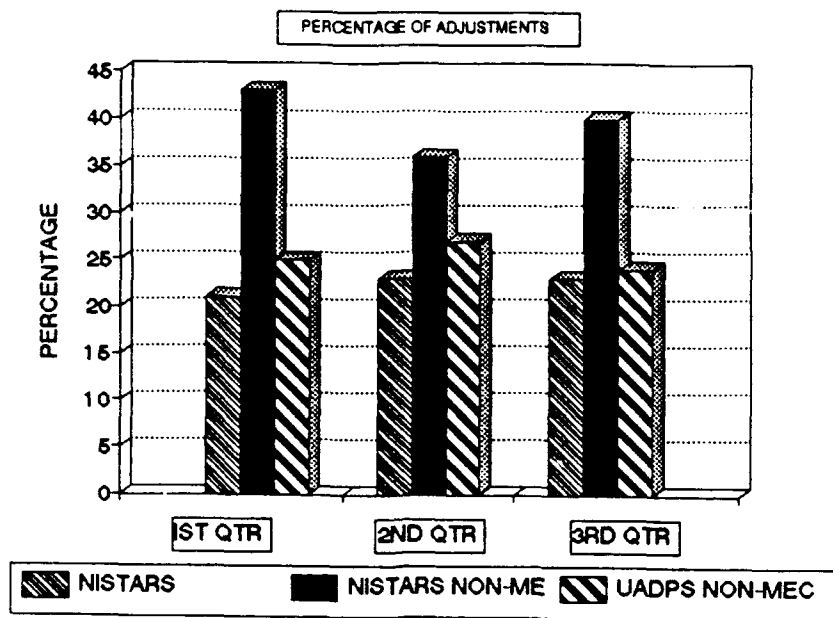


Figure 1. Percentage of Adjustments

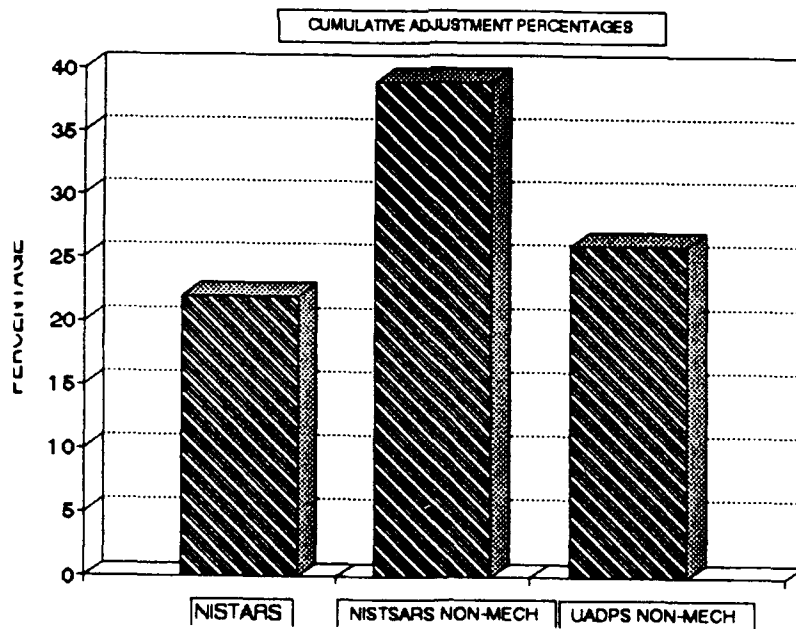


Figure 2. Cumulative Adjustment Percentages

non-mechanized area has the highest percent of cumulative adjustments of the three areas.

To determine if this information is significant we conducted a chi-square test using the MINITAB statistical computer program. This is a test to determine whether the percentage of adjustments were the same between the three areas. We test the null hypothesis that whether the percentage of adjustments in all three areas were equal. Table 3 is the output from the MINITAB program. The K1 value in Table 3 is the probability of being incorrect by rejecting the null hypothesis and concluding that the percentage of adjustments for each of the three areas is not the same. Since this probability is very small (0.00019), we are willing to reject the null hypothesis, and conclude that we are reasonably certain that these areas are not the same in terms of the percentage of adjustments. With the visual inspection of Figures 1 and 2, we can reasonably state that the NISTARS non-mechanized area has a significantly higher adjustment rate.

An additional chi-square test was conducted to determine if there was a difference between the NISTARS mechanized and UADPS-SP non-mechanized areas. The null hypothesis was tested to determine whether the percentage of adjustments in these two areas were equal. The K1 value again was very small (0.0059) and we conclude that these areas are not the same in percentage of adjustments. Based on this, we conclude that

TABLE 3
MINITAB OUTPUT

MTB> CHISQUARE of the table stored in C1-C3

Expected counts are printed below observed counts

	NISTARS	NISTARS NON-MECH	UADPS-SP NON-MECH	TOTAL
NO ADJ	1490 1444.99	48 59.70	2308 2341.31	3846
ADJ	422 467.01	31 19.30	790 756.69	1243
TOTAL	1912	79	3098	5089

CHISQ = 1.402 + 2.294 + 0.474 + 4.338 + 7.099 + 1.466
= 17.074

df = 2

MTB> cdf 17.074 store in K1;
SUBC> CHISQUARE with 2 df.
MTB> Let K1=1-K1
MTB> PRINT K1
K1 = 0.000196099

NISTARS mechanized system did improve the inventory accuracy over the UADPS-SP non-mechanized system. This is again clear by looking at Figures 1 and 2.

Comparision of the two chi-square tests indicates an opposite result from what might be expected. We concluded after the second test that placing material under the NISTARS mechanized system improved the inventory accuracy over the UADPS-SP system. We would also expect that if non-mechanized warehouses were placed under NISTARS control they would

improve also. The first test contradicts this assumption. It indicated that the non-mechanized warehouses under NISTARS control had a significantly higher adjustment rate than the other two areas.

Having established that there is a difference between the areas we need to determine if the assigned research codes can determine the reasons. Table 4 gives a breakdown of the research codes that were assigned during the inventories. In the case of these three STATMAN inventories a total of only six different research codes (A, B, C, G, H, J) were assigned to the 5098 line items inventoried. Codes A and B both mean that there were no adjustment made. Research code A is assigned by the computer when the count, infloat, and record balance all agree. Code B is assigned by the pre-adjustment clerk after a review of the same documentation when the computer could not reconcile the item. These two codes accounted for 74.4% of the total inventory reviewed.

Code C only appeared once in all the inventories and is therefore not significant to this study. Codes G, H, and J all indicate that adjustments were made to the records for a specific reason. Code G is assigned by the computer to all adjustments for which the extended dollar value of the adjustment is less than \$800. Code H is assigned by the pre-adjustment clerk upon acceptance of the adjustment to the records and the value is below the causative research threshold (\$2500 at NSC, San Diego). Code J is assigned by

TABLE 4
RESEARCH CODES FROM UJ-95
CUMULATIVE FOR FY 1990

RESEARCH CODES	NISTARS	NISTARS NON-MECH	UADPS-SP NON-MECH	CUMULATIVE
A	1467 (76.7%)	46 (58.2%)	2248 (72.6%)	3761 (73.9%)
B	23 (1.2%)	2 (2.6%)	60 (1.9%)	85 (1.7%)
C	0 (0.0%)	0 (0.0%)	1 (0.0%)	1 (0.0%)
G	335 (17.6%)	17 (21.5%)	440 (14.2%)	792 (15.5%)
H	77 (4.0%)	11 (13.9%)	307 (9.9%)	395 (7.8%)
J	10 (0.5%)	3 (3.8%)	42 (1.4%)	55 (1.1%)
TOTALS	1912	79	3098	5089

the pre-adjustment clerk when upon acceptance of the adjustment and causative research is to be conducted.

Since all of these codes are general in nature and do not delineate any specific problems, we cannot make any determination as to specific reasons for the differences in the accuracy rate between the three different areas by using the research codes.

There were some problems encountered during this study. The first is that the NISTARS system is a relatively new system at NSC, San Diego. It first went into operation in

February 1987. The first non-mechanized area (building 322) also went under NISTARS control the same year. NISTARS non-mechanized areas comprise less than 2% of the total line items. Second, inventory records are maintained for the current fiscal year and the past two. This resulted in the inventory accuracy information for building 322 before it went under NISTARS control being unavailable for comparison purposes. This is important because this area has traditionally been a problem area in inventory accuracy due to the type of material located there.

While this study could not determine specific reasons for the difference between the areas based on the data collected, it did determine that a difference exists. It also determined that there is a shortcoming in the assignment of the research codes during the actual inventory. In addition, it highlighted that inventory results are not maintained in a database which could easily be used to study inventory accuracy problems.

V. CONCLUSIONS AND RECOMMENDATIONS

The NISTARS system is an important part of the Navy's Inventory Accuracy Program. Even though it was developed for mechanized warehouses, the Navy will eventually place all non-mechanized warehouses under NISTARS control. While NISTARS mechanized control improves the inventory accuracy over UADPS-SP, the inventory accuracy in non-mechanized warehouses placed under the NISTARS control is significantly lower than under UADPS-SP and NISTARS mechanized control. Whereas the data suggest that the cause may be the NISTARS system, one piece of information that is necessary to conclusively state that premise was not available. We do not know what the inventory accuracy rate was prior to those non-mechanized areas being placed under the NISTARS control. Without that information we cannot determine what portion, if any, of the difference in the inventory accuracy rate can be attributed directly to NISTARS.

Over 97% of the line items listed in non-mechanized areas under NISTARS control for this study were in building 322. Building 322 was selected to be placed under NISTARS control because it is physically joined to the NISTARS complex. The material in building 322 is mostly clothing, batteries and medical material. This type of material historically has been more prone to inventory accuracy problems than other types of

material. The reasons for this are usually associated with packaging, unit of issue, condition code, and shelf-life problems. For this reason it is difficult to conclude that the sole reason for the decline in accuracy is the result of the area being placed under NISTARS control.

In our opinion, however, NISTARS does contribute to inventory accuracy problems in non-mechanized warehouses. There are two reasons for this opinion. The first is that the NISTARS system was developed for automated warehouses and not designed to control material outside of the mechanized environment. One problem is the NISTARS program is not adequate to handle condition code and shelf-life material. This situation led to inventory problems. We understand that programming modifications are being worked on and implemented to correct this problem.

The second reason for problems in the NISTARS non-mechanized warehouses is the human factor. The method employed by NISTARS to control inventory is radically different from the UADPS-SP system in concept. This creates a training problem. To have the warehouse workers adjust to a new way of doing business, they need to understand how the new system operates and their function within that system. Under the UADPS-SP system, material had a tendency to remain in the same location for a long period of time. Many of the warehouse workers could tell where the material was located

under the UADPS-SP system. When material is received, UADPS-SP will attempt to put the material in the primary location listed in the records. Under NISTARS, when material is received, it is placed in the next available empty location. That is why NISTARS can maintain up to 99 locations for a line item while UADPS-SP will only display three locations.

NISTARS also employs a "balance by location" policy where it knows the quantity in each location at all times. UADPS-SP only tracks by total quantity. This means that the warehouseman must stow to and issue from the exact location indicated by NISTARS. Under UADPS-SP, the warehouseman could stow to or issue from any listed location and it was transparent to the computer. The warehouse worker must understand the importance of following the procedures that the NISTARS computer system issues to them and the problems that deviations from them will create.

Change is difficult to implement. These new procedures and the inability or unwillingness to understand or adjust to them by the warehouse workers and the inventory personnel is a cause of inventory accuracy problems. We understand that an intensive training program has been initiated at NSC, San Diego to address this problem.

We now make three recommendations to improve the inventory accuracy in NISTARS non-mechanized warehouses. The first one would be to increase the use of the STATMAN inventory program to better identify the problem areas in those warehouses. The

use of this tool could provide valuable information into the reasons for the differences between areas. Currently this program is only being run quarterly to the parameters dictated by NAVSUP for the total inventory at NSC, San Diego. By setting the parameters in a STATMAN inventory to segregate the inventory into classifications useful to the managers at the supply center, more accurate information would be available for problem solving.

The required time period for running a STATMAN inventory is 30 days. With the current requirement from NAVSUP to run one STATMAN quarterly, there is still time left during the quarter to complete additional STATMAN inventories. These inventories can overlap or even run at the same time. While this is an additional workload for the supply center, this information could be used to demonstrate that current scheduled inventories could be replaced with STATMAN inventories which may eventually reduce the total inventory workload. In addition, the information obtained from these specific inventories would be far more valuable to the managers at the supply center than the results from the quarterly STATMAN inventories.

The second recommendation would be to maintain an ongoing tracking system that would compare the accuracy rate of the new non-mechanized areas going under NISTARS control to their accuracy rate before the changeover. This information is contained in the UJ-95 inventory report created by UADPS-SP.

There are also several other computer generated inventory reports that contain valuable information for the managers. Currently this information is deleted from the UADPS-SP computer files ten days after the inventory is completed and is no longer available for report generation. This information is now available only by sorting through printed reports. To attempt to compile this information manually is not cost-effective. However, if the information in the completed inventory files in the UADPS-SP mainframe computer could be transferred either electronically through a network or by using a floppy disk for input to a personal computer, it could be used for management analysis. The information contained in the completed inventory files are valuable to the physical inventory division, the inventory accuracy officer, the quality control division, and the warehouse managers.

This would enhance the ability of the managers to isolate problem areas, make decisions, and use resources more effectively. Under the UADPS-SP system, managers do not have an on-line capability to query the computer for this information. This must be done through requests to the computer center to run a report for them. With this information available on a PC with database and spreadsheet programs, the managers would have the information much faster and consume less time on the saturated mainframe computer. This would be a benefit to both sides of the organization.

The third recommendation would be to change the way the research codes are now used during the inventory. As this study discovered, the research codes used by the preadjustment clerks do not indicate the causes of the errors between the physical counts and the records. They merely segregate the inventory into adjustments and non-adjustments and whether it was done automatically by the computer or manually by the preadjustment clerk. While this information is useful, the real purpose for the codes is not being accomplished. This is to provide information into the causes of the inventory errors to be used by the managers to improve inventory accuracy. This improvement can be accomplished by identifying whether the problem is procedural in nature or training-related. If it is procedural, make the necessary changes in the procedures to correct the situation. Update the desk guides or procedure manuals to reflect these changes and make sure that everyone who is impacted by these changes are informed of them. If it is training-related, conduct the necessary training to correct the problem and incorporate it into the overall training program.

The information provided by the research codes is very valuable for the managers to improve inventory accuracy. Currently this information is not being provided by the preadjustment clerks by utilizing the research codes. The reasons appear to be that there is not enough information, not enough time, and not enough training. The present procedure

calls for the preadjustment clerk to research the transaction ledger for only the 60 days prior to the inventory. In many cases this is not sufficient to determine the cause for the difference in the counts and records. To increase the amount of transaction ledger that the preadjustment clerk reviews will impact the ability to complete the inventory in the required 30 day time frame. To be able to do the necessary research, additional personnel may be required. If additional research is required, it may necessitate additional training or using higher graded personnel.

This area is a prime candidate for additional research to determine why they are not being used and what is required to make sure they can be used properly. There are several questions that could be pursued:

- * What is the appropriate amount of transaction ledger to be reviewed to provide the required information?
- * Should the amount of transaction ledger be determined by the preadjustment clerk?
- * Is there sufficient information in the transaction ledger to determine the cause of the error?
- * Are there other sources of information that should be used?
- * Are the research codes currently assigned being assigned correctly?
- * Would additional research require higher grade levels for preadjustment clerks?
- * Is the training program adequate?
- * Are the definitions of the research codes adequate for the preadjustment clerk to understand?

- * If more research is required, what impact will there be on personnel?
- * What information is really required by management?

The information provided by the research codes is valuable to management in formulating the corrective actions needed to reduce inventory accuracy problems. The reduction of inventory accuracy problems will improve our stewardship of the public trust and the readiness of our forces to carry out their mission.

APPENDIX A

SAMPLE OF THE UJ-95 REPORT

The following information came from the Physical Inventory Status Report (UJ-95). The report was generated at NSC, San Diego by UDAPS-SP on the STATMAN Inventory, dated 3 October 1990.

SERIAL NUMBER: 0248

A - COMPLETED ITEMS

R	FSC	NIIN	COG	C	P	SM	PN	S	MT	RES	ADJ	DT	ADJ	QTY	UNIT PRICE	ADJ VALUE	MAJ	I/M	COM	PRIMARY	SECONDARY	TERTIARY	DI
5888	011542830	7R	A	A	PF	L	U	N	A	0248	0			0	9,260.00	.00				687018021			
5930	011543563	9N	A	A		L	U	N	A	0254	0			0	108.16	.00				730302000			
3850	011543346	8C	A	A		L	U	N	A	0248	0			0	415.00	.00				572032451			
3040	011550338	9C	A	A		L	U	N	A	0250	0			0	310.27	.00				730100000			
3010	011558248	7H	A	A		L	U	N	A	0248	0			0	9,780.00	.00				522028232			
1560	011861115	7R	G	A	GF	L	U	N	A	0249	0			0	17,410.00	.00				684056683			
1560	011861116	7R	F	A	GF	L	U	N	A	0250	0			0	20,760.00	.00				648234382			
5340	011568935	K2	A	A		L	U	N	A	0255	0			0	18.35	.00				730300000			
5340	011568935	9N	A	A		L	U	N	A	0255	0			0	13.55	.00				730300000			
5935	011577839	8M	A	A		L	U	N	A	0254	0			0	13.85	.00				730300000			522025362
4920	011578673	6R	A	A	TN	L	U	N	A	0249	0			0	1,520.00	.00				672105032			
5098	011584954	7H	F	A		L	U	N	A	0249	0			0	4,710.00	.00				663023147	663033091		
1560	011385819	1R	A	A	VH	L	U	N	A	0261	1			0	1,820.00	1,820.00	X	M		673167268			
5330	011891898	1H	A	A	X3	L	U	N	A	0250	0			0	57.00	.00				583057415			
1440	011596249	7H	A	A		L	U	N	A	0249	0			0	2,850.00	.00				730100000			
2835	011596284	K2	A	A		L	U	N	A	0248	0			0	1,700.00	.00				673078541			
5360	011598152	8Z	A	A		L	U	N	A	0249	0			0	16.78	.00				730300000			
5885	011603160	8N	A	A		L	U	N	A	0254	0			0	552.08	.00				730300000			421156100
5340	011608131	7H	A	A		L	U	N	A	0250	0			0	2,270.00	.00				581034432			
5988	011623364	7H	A	A		L	U	N	A	0254	0			0	740.00	.00				658168123			
5340	011623851	1H	A	A		L	U	N	A	0250	0			0	57.00	.00				435550300			
5885	011627577	7H	A	A		L	U	N	A	0249	0			0	14,780.00	.00				523080521			
5105	011633958	9C	A	A		L	U	N	A	0249	0			0	3,710.00	.00				730100000			
2820	011654601	9C	A	A		L	U	N	A	0248	0			0	1.22	.00				730100000			
5310	011665876	9Z	A	A		L	U	N	A	0249	0			0	0.38	.00				446208404			
6110	011670421	7R	A	A	AY	L	U	N	A	0249	0			0	4,130.00	.00				67214117K			67214118K
2915	011684672	1R	A	A	TN	L	U	N	A	0248	0			0	1,310.00	.00				601028433			
5888	011702183	8N	A	A		L	U	N	A	0249	0			0	20.23	.00				730300000			
5938	011702307	8N	A	A		L	U	N	A	0249	0			0	28.24	.00				730300000			522027187
5935	011709128	8N	A	A		L	U	N	A	0249	0			0	18.58	.00				730300000			
4220	011713141	1H	A	A	CP	L	U	N	A	0248	0			0	63.00	.00				730100000			
4220	011713183	1H	A	A	CP	L	U	N	A	0248	0			0	28.50	.00				410306200			
5815	011714183	7G	A	A		L	U	N	A	0248	0			0	1,300.00	.00				410558300			
1560	011715836	7R	A	A	GF	L	U	N	A	0253	0			0	8,460.00	.00				562031063			
6130	011725869	7H	A	A		L	U	N	A	0249	0			0	8,490.00	.00				411762200			
2825	011745934	9C	A	A		L	U	N	A	0250	0			0	174.50	.00				730300000			
5988	011752914	1H	A	A	RZ	L	U	N	A	0249	0			0	5,170.00	.00				601020521			
4820	011773183	1H	A	A		L	U	N	A	0249	0			0	11,130.00	.00				583252221			
5840	011773286	7H	F	A		L	U	N	A	0258	0			0	3,280.00	.00				730100000			
7920	011773633	9Q	A	A		L	U	N	A	0262	15			0	12.31	184.65		M		783062041			
5330	011778208	9Z	A	A		L	U	N	A	0250	0			0	2.28	.00				730300000			
5330	011802433	9Z	A	A		L	U	N	A	0251	0			0	19.81	.00				730100000			
5995	011804202	7H	A	A		L	U	N	A	0249	0			0	1,580.00	.00				601016481			
5905	011804358	7H	A	A		L	U	N	A	0254	0			0	0.10	.00				730300000			
5988	011819846	7H	A	A	VH	L	U	N	A	0249	0			0	2,280.00	.00				411740200			

SERIAL NUMBER: 0248

A - COMPLETED ITEMS

R	FSC	NIIN	COG	C	P	SM	PN	S	MT	RES	ADJ	DT	ADJ	QTY	UNIT PRICE	ADJ VALUE	MAJ	I/M	COM	PRIMARY	SECONDARY	TERTIARY	DI
5935	011823463	9N	A	A		L	U	N	A	0249	0			0	22.59	.00				730300000			
5988	011828675	1H	A	A		L	U	N	A	0249	0			0	22.50	.00				730100000			
5340	011830978	9Z	A	A		L	U	N	A	0250	0			0	1.32	6.60				552031221	552031221		
5820	011831122	7G	F	A		L	U	N	A	0249	0			0	64,980.00	.00				623160263			
5340	011832914	1H	A	A		L	U	N	A	0250	0			0	492.00	.00				448102100			
5988	011833987	7G	F	A		L	U	N	A	0249	0			0	8,140.00	.00				683007017			
5981	011858889	9N	A	A		L	U	N	A	0254	0			0	77.22	.00				583252221			
1085	011877694	7R	F	A	GF	L	U	N	A	0248	0			0	13,220.00	.00				622110283			
5330	011880840	9Z	A	A		L	U	N	A	0255	2			0	3.34	6.68				730300000			
6030	011882973	9Q	A	A		L	U	N	A	0263	0			0	57.00	.00				730300000			
6030	011882973	9Q	A	A		L	U	N	A	0248	0			0	57.00	.00				573081141			
2835	011887320	7H	F	A		L	U	N	A	0249	0			0	9,740.00	.00				623178271			
5985	011887819	3H	A	A		L	U	N	A	0248	0			0	1,350.00	.00			1	522024613			
5905	011890897	9N	A	A		L	U	N	A	0254	0			0	0.38	.00				730300000			
5368	011897798	1R	A	A		L	U	N	A	0249	0			0	14.28	.00				730300000			
1560	011892789	1R	A	A	BE	L	U	N	A	0249	0			0	248.00	.00				730100000			
6865	011818981	8L	A	A		L	U	N	A	0249	0			0	18.20	.00				730300000			
4820	011824761	7R	A	A	GF	L	U	N	A	0250	0			0	8,680.00	.00				584070231			
5988	011830397	1H	A	A	X5	L	U	N	A	0249	0			0	238.00	.00				601009312			
5855	011833848	7H	A	A		L	U	N	A	0251	0			0	5,100.00	.00				730100000			
7025	011833887	7G	F	A		L	U	N	A	0249	0			0	4,330.00	.00				683031054			
2808	011871424	9C	A	A		L	U	N	A	0249	0			0	11.73	.00				730100000			
5841	011870098	7R	A	A	XH	L	U	N	A	0249	0			0	1,420.00	.00				672118288			
6810	011877797	9Q	A	A		L	U	N	A	0248	0			0	53.00	.00			1	722014412			
4810	011882939	9C	A	A		L	U	N	A	0248	0			0	33.87	.00				421540408			
5863	011887700	7H	F	A	AY	L	U	N	A	0268	1			0	611,750.00	611,750.00	X	M		622108233			
4810	012002912	7H	A	A		L	U	N	A	0250	0			0	16,890.00	.00				551029152			
3988	012011093	0J	A	A		L	U	N	A	0249	0												

SERIAL NUMBER: G248

A - COMPLETED ITEMS

R	FSC	NIIN	COG	C	P	SM	PN	S	MT	RES	ADJ	DT	ADJ	QTY	UNIT PRICE	ADJ VALUE	MAJ	I/M	COM	PRIMARY	SECONDARY	TERTIARY	DI
5355	012580131	90	A	A	L	U	N	H	0255					3	10.53	31.59				730300000			
5318	012583643	1H	A	A	L	U	N	H	0249					0	987.00	.00				564077171			
5306	012586038	K2	A	A	L	U	N	H	0250					0	144.25	.00				247835100			
4920	012586581	7R	A	EE	L	U	N	H	0249					0	2,180.00	.00				730100000			
6108	012623328	9G	A	A	L	U	N	H	0251					0	247.88	.00				730100000		730300000	
7350	012636700	90	A	A	L	U	N	H	0254					40	35.87	1,434.80	X	M		783087181			
3020	012661488	9C	A	A	L	U	N	H	0254					0	64.22	.00				730300000			
5888	012666088	7H	F	A	L	U	N	H	0249					0	0.02	.00				623146411			
5230	012678241	7R	A	A	PF	L	U	N	A	0249				0	1,430.00	.00				413131800			
5888	012683156	1H	A	A	L	U	N	H	0249					0	764.00	.00				730100000			
5305	012712043	9Z	A	A	L	U	N	H	0251					0	30.89	.00				730200000			
1005	012718800	1R	A	A	GF	L	U	N	A	0249				0	90.00	.00				730300000		730300000	
1675	012725107	7R	A	A	VH	L	U	N	A	0249				0	5,370.00	.00				672110321			
1620	012768074	7R	A	A	GF	L	U	N	A	0250				0	35,770.00	.00				645220226			
2530	012815221	9C	A	A	L	U	N	H	0250					0	38.24	.00				551032463			
5330	012832524	1H	A	A	CA	L	U	N	A	0254				0	78.00	.00				730300000			
5888	012833414	7H	A	A	L	U	N	H	0249					0	1,850.00	.00				730100000		730300000	
5375	012856017	5R	A	A	EY	L	U	N	A	0255				0	1.50	.00				730300000			
4820	012889718	9C	A	A	L	U	N	H	0249					0	2,721.19	.00				544005111			
5525	012911712	7G	F	A	L	U	N	H	0249					0	738.00	.00				730100000		730300000	
5888	012938871	7R	F	A	GF	L	U	N	A	0249				0	1,420.00	.00				683038204			
5305	012946801	9Z	A	A	L	U	N	H	0249					0	37.55	.00				730200000		730300000	
6150	012951968	7R	A	A	SP	L	U	N	A	0249				0	10,830.00	.00				601027113			
4320	012960700	7R	A	A	EQ	L	U	N	A	0249				0	1,540.00	.00				691083185			
5385	012976380	K2	A	A	L	U	N	H	0251					0	188.84	.00				730200000		730300000	
6628	012991540	7R	F	A	SX	L	U	N	A	0249				0	1,520.00	.00				853020052			
5888	013028000	7R	F	A	L	U	N	H	0254					0	1,100.00	.00				730300000			
5310	897418518	1H	A	A	GF	L	U	N	G	0254				1	0.83	.83				730300000			

B - COMPLETED ITEMS - GREATER THAN 10% VARIATION

R	FSC	NIIN	COG	C	P	SM	PN	S	MT	RES	ADJ	DT	ADJ	QTY	UNIT PRICE	ADJ VALUE	MAJ	I/M	COM	PRIMARY	SECONDARY	TERTIARY	DI
0102	LFO002160	1I	A	A	L	U	N	H	0261					66	1.30	85.80			M	533058261	533058261		
0177	LF2235500	1I	A	A	L	U	N	H	0248					2	13.00	26.00				574080382			
0102	LF6139110	1I	A	A	L	U	F	G	0248					160	3.20	512.00				532036531			
0104	LF7105101	1I	A	A	L	U	N	H	0260					300	12.00	3,600.00	X	M		534078081			
4130	LLMAL6390	2S	F	A	A2	L	U	F	J	0264				1	75,000.00	75,000.00	X	M		371143041			
4610	LLMA02917	2S	F	A	A2	L	U	F	J	0264				1	1,430.00	1,430.00	X	M		730100000			
1825	LLQ701087	1H	A	A	DS	L	U	N	G	0250				1	153.00	153.00				438757800			
1825	LLQ701384	1H	A	A	DS	L	U	F	G	0249				1	524.00	524.00				423049100			
1825	LLQ756472	1H	A	A	DS	L	U	N	G	0249				1	312.00	312.00				413054300			

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B - COMPLETED ITEMS - GREATER THAN 10% VARIATION

R	FSC	NIIN	COG	C	P	SM	PN	S	MT	RES	ADJ	DT	ADJ	QTY	UNIT PRICE	ADJ VALUE	MAJ	I/M	COM	PRIMARY	SECONDARY	TERTIARY	DI
5845	LLQ780907	1H	A	A	DS	L	U	N	G	0249				2	9.10	18.20				423885600			
5845	LLQ775340	1H	A	A	DS	L	U	N	G	0250				3	250.00	750.00				438355300			
5888	000361745	9C	A	A	L	U	N	H	0250					1	2,370.00	2,370.00	X	M		554082118			
4820	000361745	9C	A	A	L	U	N	H	0250					1	95.37	95.37				730300000			
4820	000361746	9C	A	A	L	U	N	H	0254					1	376.55	376.55				730300000			
5888	000465588	7R	F	A	RA	L	U	N	H	0261				1	4,790.00	4,790.00	X	M		663018179			
7105	000528686	90	A	A	L	U	N	H	0248					22	25.17	553.74				574081481			
6660	000562389	9C	A	A	L	U	F	H	0262					14	123.98	1,735.72	X	M		730300000			
5305	000616463	9Z	A	A	L	U	N	H	0250					67	0.51	34.17				730300000			
8040	000618303	9C	A	A	L	U	F	H	0262					252	3.52	887.00	X	M		730208335			
5820	000714780	9H	A	A	L	U	F	J	0264					601	75.23	45,219.24	X	M		770118311			
5815	000725678	7G	F	A	L	U	N	H	0261					4	1,670.00	6,680.00	X	M		645234184			
7510	000822520	90	A	A	L	U	N	H	0249					1440	0.22	316.80			1	543094092			
5335	000892862	90	A	A	L	U	N	H	0248					1	9.58	19.16				524079152			
5310	000934418	9Z	A	A	L	U	F	G	0250					1	61.39	61.39				554071556			
6110	001165327	7R	A	A	CY	L	U	N	H	0260				1	6,060.00	6,060.00	X	M		671087258			
2840	001187532	9V	A	A	L	U	N	H	0254					18	0.58	10.44				730300000			
6145	001198850	9Z	A	A	L	U	N	H	0250					1	21.78	21.78			1	551036482			
2815	001328711	7H	F	A	L	U	N	H	0264					2	5,500.00	11,000.00	X	M		372106051	372106061		
5861	001387433	9H	A	A	L	U	N	H	0254					1	4.66	4.66			1	730300000			
5340	001489588	9Z	A	A	L	U	N	H	0248					1	59.24	59.24				672013513			
6515	001491204	8L	A	A	L	J	N	J	0270					369	4.41	1,627.29	X	M		689096061	689096001		
6110	001520271	7H	A	A	L	U	N	H	0250					1	781.00	781.00				859152322			
3110	001561408	9Z	A	A	L	U	N	H	0249					2	62.38	124.70				730200000			
1030	001778780	1H	A	A	L	U	N	H	0249					6	57.00	342.00				562008138			
4010	001889391	9Z	A	A	L	U	F	G	0249					4	21.36	85.44				574079123			
5318	001875809	9Z	A	A	L	U	N	H	0254					90	5.31	477.90				730300000			
9510	001891647	K2	A	A	L	U	N	H	0260					34	2.69	91.46			M	764102253			
5138	001897806	90	A	A	L	U	F	G	0255					58	3.44	198.52			1	730300000			
4720	001849933	9C	A	A	L	U	N	H	0249					13	2.04	26.52				687002055			
8405	002043341	CY	E	A	L	U	N	H	0269					282	48.80	14,249.60	X	M		857109111			
5888	002044318	7H	A	A	L	U	N	H	0258					2	1,820.00	3,640.00	X	M		413918600			
5840	002158851	7H	A	A	L	U	N	J	0260					1	27,670.00	27,670.00	X	M		882112211			
5330	002222589	9Z	A	A																			

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B - COMPLETED ITEMS GREATER THAN 10% VARIATION

R	FSC	NIIN	COG	C	P	SM	S	MT	RES	ADJ	DT	ADJ	QTY	UNIT PRICE	ADJ VALUE	MAJ	I/M	COM	PRIMARY	SECONDARY	TERTIARY	DI		
5310	002607795	92	A	A				F	G	0248			47	5.99	281.53				1	524081111				
7510	002578843	90	A	A				F	G	0253			482	1.23	592.86						57202482			
6810	00273297	90	A	A				L	N	H	0251		188	1.84	345.92						72101732			
7930	002667137	90	A	A				L	N	H	0282		20	2.88	57.60				M		727082114			
5905	002738871	9M	A	A				L	N	G	0248		7	0.21	1.47						861014078			
5920	002783403	9M	A	A				L	N	G	0248		2	12.74	25.48						730200000			
4710	002774043	9C	A	A				L	N	G	0248		2	5.17	10.34						764096088			
9520	002774901	K2	A	A				L	N	G	0248		252	0.48	120.96						771111152	771030055	77108254	
9520	002774803	K2	A	A				L	N	G	0248		680	0.44	299.20						771072201			
9535	002777813	92	A	A				L	N	G	0248		1	387.29	387.29						771055153			
4730	002784824	9C	A	A				L	N	G	0254		205	0.42	86.10						730300000			
5120	002886574	90	A	A				L	N	G	0251		4	4.74	18.96						735083032			
8105	002903360	90	A	A				L	N	G	0251		12	21.40	256.80						730700000			
6145	002952813	92	A	A				L	N	G	0248		850	0.15	127.50						863038081			
5332	002998613	9L	A	A				L	N	G	0248		4	0.81	3.24						531031311			
5330	003006169	92	A	A				L	N	G	0254		2	21.08	42.16						730300000			
5330	003058548	92	A	A				L	N	G	0248		2	1.87	3.74						563058184			
8700	003184125	90	A	A				L	N	G	0250		37	13.84	513.78						534073081			
2010	00320254	25	F	A		P2		L	N	J	0257		1	46,110.00	46,110.00	X	M				372138151			
5977	003814007	90	A	A				L	N	H	0282		3	6.73	20.19						730300000			
6850	003829751	90	A	A				L	N	F	H	0261		12	0.40	4.80					722006504			
5330	003934898	92	A	A				L	N	G	0248		168	0.96	161.28						730200000			
5999	003986880	9N	A	A				L	N	F	G	0248		101	2.68	270.68					863044036			
4320	003988316	8C	A	A				L	N	G	0248		1	86.65	86.65						730300000			
5885	004156641	7F	A	A				L	N	F	H	0252		2	88.00	1,722.00	X	M			621040119			
6240	0043001	80	A	A				L	N	F	H	0261		276	6.89	1,829.88	X	M			552030482			
5865	004346194	1R	F	A		DX		L	N	F	H	0261		1	1,770.00	1,770.00	X	M			863034024	663035161		
5307	004361678	1H	A	A		L1		L	N	F	G	0248		2	44.00	88.00					764056217			
1650	004415302	7R	F	A		BF		L	N	J	0282		26	5,890.00	153,140.00	X	M			645244199	621082028	621090028		
6625	004458817	7Z	F	A		TE		L	N	J	0282		31	8,550.00	265,050.00	X	M			738000000	333193241			
5970	004497814	90	M	A				L	N	F	G	0248		2	24.53	49.06					563888822			
5905	004520768	90	M	A				L	N	F	G	0248		1	0.20	0.20					411213403			
6840	004541625	90	A	A				L	N	F	G	0250		5	1,320.00	6,600.00	X	M			672040734			
5970	004842813	90	A	A				L	N	G	0248		4	4.25	17.00						564084054			
9510	004933349	K2	L	A				L	N	G	0248		5	21.21	106.05						771037152			
4730	005114014	9C	A	A				L	N	G	0256		5	4.69	23.45						730300000			
6145	005192602	92	A	A				L	N	F	G	0248		275	0.48	11.00					863038088			
4320	005292929	7H	A	A				L	N	J	0261		1	17,170.00	17,170.00	X	M			693148351	693148352	673175198		
5330	005303526	92	A	A				L	N	F	G	0248		4	19.36	77.44					726083033	726083034		
6620	005432531	7F	A	A		FZ		L	N	F	H	0252		1	1,380.00	1,380.00	X	M			738000000	621039063		
5305	005432753	92	A	A				L	N	F	G	0248		79	0.28	22.12								
6850	005437801	90	A	A				L	N	F	G	0248		3	28.97	86.91					722014171			
6145	005482403	92	A	A				L	N	F	G	0253		169	0.03	5.07					551027517			
7520	005581501	90	A	A				L	N	G	0248		38	0.71	26.98						524083072			
5330	005596516	92	A	A				L	N	F	G	0254		22	0.29	6.38					730300000			

SERIAL NUMBER: G248

B - COMPLETED ITEMS - GREATER THAN 10% VARIATION

R	FSC	NIIN	COG	C	P	SM	S	MT	RES	ADJ	DT	ADJ	QTY	UNIT PRICE	ADJ VALUE	MAJ	I/M	COM	PRIMARY	SECONDARY	TERTIARY	DI	
5330	005719738	92	A	A				L	N	F	H	0256		36	0.24	8.64				M	561010014		
1560	005747369	1R	A	A		DA		L	N	F	H	0262		5395	1.10	5,934.50	X	M			730300000		
8010	005774735	90	A	A				L	N	F	G	0248		9	75.57	680.13					722007151		
5330	005793164	92	A	A				L	N	F	G	0248		16	0.40	6.40					730200000		
5365	005803877	92	A	A				L	N	F	G	0248		1	0.10	0.10					601022263		
5130	005981176	90	A	A				L	N	F	H	0260		4	126.24	504.96				M	521015431		
8010	005985765	90	A	A				L	N	F	G	0248		3	24.58	73.74					722011012		
6810	005986800	9C	A	A				L	N	F	G	0254		38	5.85	222.10					722006311	722006312	
6750	006119625	90	A	A				L	N	H	0260		1	70.80	70.80						613000000		
5315	006165524	92	A	A				L	N	G	0251		6	0.04	0.24						730300000		
5999	006320286	9M	A	A				L	N	F	G	0248		1	28.95	28.95					421617700		
1680	006332647	90	A	A				L	N	G	0255		8	29.69	237.52						730300000		
7540	006343972	90	A	A				L	N	F	G	0248		7	1.59	11.13					532024621		
6145	006359388	92	A	A				L	N	F	G	0250		135	0.01	1.35					551020164		
8345	006561435	8D	A	A				L	N	F	H	0257		74	17.75	1,313.50	X	M			574078322		
5340	006595589	90	A	A				L	N	F	G	0254		890	0.80	712.00					730101000		
6145	006595589	90	A	A				L	N	F	G	0250		1509	0.80	1,207.20					551031623	533061392	
3120	006774347	92	A	A				L	N	F	G	0248		90	0.04	3.60					574084067		
5841	006887620	7R	F	A		DA		L	N	M	H	0260		1	3,550.00	3,550.00	X	M		663019082			
9350	006902841	90	A	A				L	N	F	G	0250		17	3.88	67.32					210090201		
4720	007224723	9C	A	A				L	N	F	G	0248		52	2.37	123.24					863026583		
5970	007241915	90	A	A				L	N	G	0253		2219	0.13	288.47						448504200		
5305	007245898	92	A	A				L	N	F	G	0258		85	3.87	328.65					730200000		
8330	007248179	90	A	A				L	N	F	H	0251		21	32.08	673.68					730400000		
6130	007363334	7R	A	A		FA		L	N	M	H	0261		1	4,290.00	4,290.00	X	M			687006083		
5180	007382860	90	A	A				L	N	F	G	0248		1	683.76	683.76					561038501		
5885	007583058	7H	A	A				L	N	M	H	0260		1	3,170.00	3,170.00	X	M			672158215		
4320	007902411	7H	A	A				L	N	J	0282		2	14,260.00	28,520.00	X	M			645244280			
1095	0079418																						

SERIAL NUMBER: 0248

C - COMPLETED ITEMS - EXCLUSION CODE 4

R	FSC	NIIN	COG	C	P	SM	PN	S	MT	RES	ADJ	DT	ADJ	QTY	UNIT PRICE	ADJ VALUE	MAJ	I/M	COM	PRIMARY	SECONDARY	TERTIARY	DI
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NO RECORDS THIS SECTION

D - COMPLETED REVERSAL ITEMS

R	FSC	NIIN	COG	C	P	SM	PN	S	MT	RES	ADJ	DT	ADJ	QTY	UNIT PRICE	ADJ VALUE	MAJ	I/M	COM	PRIMARY	SECONDARY	TERTIARY	DI
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NO RECORDS THIS SECTION

E - COMPLETED REVERSAL ITEMS - GREATER THAN 10% VARIATION

R	FSC	NIIN	COG	C	P	SM	PN	S	MT	RES	ADJ	DT	ADJ	QTY	UNIT PRICE	ADJ VALUE	MAJ	I/M	COM	PRIMARY	SECONDARY	TERTIARY	DI
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NO RECORDS THIS SECTION

F - COMPLETED REVERSAL ITEMS - EXCLUSION CODE 4

R	FSC	NIIN	COG	C	P	SM	PN	S	MT	RES	ADJ	DT	ADJ	QTY	UNIT PRICE	ADJ VALUE	MAJ	I/M	COM	PRIMARY	SECONDARY	TERTIARY	DI
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SERIAL NUMBER: 0248

NO RECORDS THIS SECTION

SECTION I SUMMARY:	1,588	TOTAL L/I COMPLETED	\$	422,826.49	EXTENDED ADJ VALUE
NON REVERSAL	184	TOTAL L/I LOSSES	\$	2,153,481.81	LOSS ADJ VALUE
	188	TOTAL L/I GAINS	\$	1,750,828.12	GAIN ADJ VALUE
	182	MANUAL REVIEW ADJUSTMENTS	\$	42,868,618.30	L/I INVENTORIED
	0	TOTAL L/I EXCLUSION CODE 4		28.74%	L/I ADJ RATIO
	1,217	TOTAL L/I ZERO ADJUSTMENT		8.12%	GROSS MONETARY ADJ RATIO

SECTION I SUMMARY:	0	TOTAL L/I COMPLETED	\$.00	EXTENDED ADJ VALUE
REVERSALS	0	TOTAL L/I LOSSES	\$.00	LOSS ADJ VALUE
	0	TOTAL L/I GAINS	\$.00	GAIN ADJ VALUE
	0	MANUAL REVIEW ADJUSTMENTS	\$.00	L/I INVENTORIED
	0	TOTAL L/I EXCLUSION CODE 4		.00%	L/I ADJ RATIO
	0	TOTAL L/I ZERO ADJUSTMENT		8.12%	GROSS MONETARY ADJ RATIO

SECTION II CANCELLED ITEMS

R	FSC	NIIN	COG	C	P	SM	PN	S	CANC	DATE	COM	PRIMARY	SECONDARY	TERTIARY	DI
8628	001131242	7Z	M	A	A7	U			0280						
8830	001273081	SM	A	A	1	U			0282			788888888			
8818	001279877	SM	A	A	2	U			0282			788888888			
8811	001478837	SM	A	A	1	U			0282			788888888			
8818	001430831	SM	A	A	2	U			0280			788888888			
8840	001487141	SM	A	A	2	U			0280			788888888			
8840	001487141	SM	A	A	1	U			0280			788888888			
8888	002238808	SM	A	A	1	U			0280			788888888			
2320	002888808	7R	M	A	SM	U			0280						
8130	004342224	7R	M	A	PP	U			0280						
4810	004848488	7R	M	A	SM	U			0280						
8891	004804888	SM	A	A	1	U			0282			788888888			
8828	004377888	SM	A	A	1	U			0282			788888888			
8830	004377888	SM	A	A	1	U			0280			788888888			
8818	006841887	SM	A	A	1	U			0280			788888888			
8880	006188478	SM	A	A	1	U			0280			788888888			
8828	007823318	SM	A	A	1	U			0282			788888888			
8820	008237881	SM	A	A	1	U			0280			788888888			
2140	008337881	7R	M	A	LO	U			0280						
1850	008888800	7R	M	A	BE	U			0283						
2840	008888812	7R	M	A	FO	U			0280						
1440	010123283	4Z	M	A	PP	U			0280						

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SECTION II CANCELLED ITEMS

FSC	NIIN	COG	C	P	SM	PH	S	CANC	DATE	COM	PRIMARY	SECONDARY	TERTIARY	DIFM
1650	010218843	7R	M	A	MM			U	0260					
8970	010288406	9M	A	A	2			U	0262		766888888			
8970	010288406	9M	A	A	1			U	0262		766888888			
8925	010607488	9M	A	A	1			U	0260		766888888			
5888	010837378	7E	M	A				U	0260					
1620	011635407	7R	M	A	GF			U	0260					
2815	011884874	7R	M	A	TN			U	0260					
5988	011722121	7R	M	A	GF			U	0260					
8905	012507560	9M	A	A	2			U	0260		766888888			
8905	012507560	9M	H	A	2			U	0260		766888888			
8915	012507567	9M	L	A	2			U	0262		766888888			
8960	012536354	9M	H	A	2			U	0260		766888888			
8920	012536357	9M	H	A	2			U	0262		766888888			

SECTION II SUMMARY: 36 NUMBER OF CANCELLED ITEMS

SECTION III ITEMS WITH OUTSTANDING FIRST COUNTS

M	FSC	NIIN	COG	C	P	SM	UI	PH	S	CANC	IND	COM	PRIMARY	SECONDARY	TERTIARY	DIFM
	4730	012388848	9C	A	A		EA	2			1		730100000			
	6850	001385451	1H	A	A		EA	2	U		1		730200000	\$71030452		
	5305	009008818	9Z	A	A		EA	2			1		730201000			
	4730	011840871	9C	A	A		EA	2	U		1		730300000	80554721C		
	2815	007870714	9I	A	A		EA	2	U		1		730302000			
	7330	002687453	9Q	A	A		EA	2	U		1		730400000	\$73080481		
	6505	001181038	9L	A	A		BX	2	U		1		730400000			

SECTION III SUMMARY: 7 NUMBER OF ITEMS WITH OUTSTANDING FIRST COUNTS

SECTION IV ITEMS WITH OUTSTANDING SECOND COUNTS

M	FSC	NIIN	COG	C	P	SM	UI	S	CN	IND	OH	QTY	CNT	QTY	UNIT PRICE	PADJ	VALUE	COM	PRIMARY	SECONDARY	TERTIARY	DIFM
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SECTION IV SUMMARY: 0 NUMBER OF ITEMS WITH OUTSTANDING SECOND COUNTS

SERIAL NUMBER: G248

SECTION V OUTSTANDING MANUAL REVIEW ITEMS

M	FSC	NIIN	COG	C	P	SM	UI	PH	S	CI	MRDT	OH	QTY	CNT	QTY	UNIT PRICE	PADJ	VALUE	IFLT	COM	PRIMARY	SECONDARY	TERTIARY	DI
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SECTION V SUMMARY: 0 NUMBER OF OUTSTANDING MANUAL REVIEW ITEMS

SERIAL NUMBER: G248 SUMMARY

1,639	LINE ITEMS SELECTED																								
36	LINE ITEMS CANCELLED																								
1,596	LINE ITEMS COMPLETED																								
0	LINE ITEMS COMPLETED REVERSAL																								
7	LINE ITEMS OUTSTANDING																								

APPENDIX B

ERROR CLASSIFICATION CODES

<u>ERROR CLASSIFICATION CODE</u>	<u>DEFINITION</u>	<u>EXAMPLES</u>
PREADJUSTMENT RESEARCH RESULTS/REVERSALS		
A	Resolved, No Adjustment	For UADPS Activities, this code will be programmatically assigned by AIR Programs.
B	Infloat Resolved During Manual Review, No Adjustment	Restricted to UADPS AIR Activities. Zero Adjustment with No Discrepancy.
C	All or Part of Adjustment Avoided-Receiving Error	Receiving error accounted for the majority of the inventory imbalance. Receiving error corrected.
D	All or Part of Adjustment Avoided-Storage Error	Warehouse or issue error accounted for the majority of the inventory imbalance. Error corrected.
E	All or Part of Adjustment Avoided-Physical Inventory Error	Inventory error accounted for the majority of the inventory imbalance. Error corrected.
F	All or Part of Adjustment Avoided-Other Error	Error other than C, D, or E accounted for the majority of the inventory imbalance. Error corrected.
G	Reconciled by UADPS AIR Programs; Adjustment Taken	Restricted to UADPS AIR Activities only. This code will be programmatically assigned.

ERROR
CLASSIFICATION

CODE

DEFINITION

EXAMPLES

H	Unresolved, Adjustment Posted, below Causative Threshold	Non-zero Adjustment and Causative Research Not Required.
J	Unresolved, Adjustment Posted, Passed to Causative	Non-zero Adjustment for which Causative Research is to be Conducted.
K	Spot Inventory Reversal - Erroneous Warehouse Refusal	Found in Established or Adjacent Location during Preadjustment.
L	Spot Inventory Reversal - Erroneous Inventory Adjustment	Erroneous Adjustment Other Than Warehouse Refusal (K) or material found in Unrecorded Location (M).
M	Spot Inventory Reversal - Material Found in Unrecorded Location	Material Found During Location Survey or Warehouse Clean-up.
N	Spot Inventory Reversal - Duplicate Document Posted	Duplicate Receipt/ Issue/Condition Code Transfer.
P	Spot Inventory Reversal - Other	Spot Inventory Reversals not covered by ECCs K, L, M, or N.

CAUSATIVE RESEARCH RESULTS/REVERSALS

Q	Receiving - Data Entry Error	Input Did Not Match Source; Exception not Processed Correctly.
R	Receiving - Duplicate Receipt	Self-Explanatory. Put in Process.

<u>ERROR CLASSIFICATION CODE</u>	<u>DEFINITION</u>	<u>EXAMPLES</u>
S	Receiving - Document Not Posted	Erroneous Reversals; Uncleared Exceptions.
T	Receiving - Other	Receiving Error Other Than Q, R, or S.
U	Storage - Erroneous Warehouse Refusal	Found in Established or Adjacent Location.
V	Storage - Location Error	Found in Deleted Location; Found in Unrecorded Location.
W	Storage - Document Not Posted	Receipt in Process; Warehouse Adjustment Not Posted; Condition Code/Stock Number Transfer.
X	Storage - Issue Error	Over/Under Issue; Wrong NSN or Condition Code.
Y	Storage - Physical Processing Not Complete	Change Notice Consolidations; Locally Initiated Request for Warehouse Action.
Z	Storage - Other	Warehouse/Issue Errors Other Than U, V, W, X, or Y.
1	Inventory Control - Document Not Posted/Incomplete	Warehouse Adjustment; Condition Code/Stock Number Transfer; U/I Conversions; Indicative Data; Customer Credits.
2	Inventory Control - Other	Inventory Control Errors Other Than 1.
3	Physical Inventory - Improper Reconciliation	Infloat Reconciled Incorrectly; Arithmetic Error.

ERROR
CLASSIFICATION
CODE

DEFINITION

EXAMPLES

4	Physical Inventory - Prior Off-setting Adjustment Not Reversible	Prior Off-setting Adjustment Greater Than 365 Days Old or Prior to Most Recent Inventory.
5	Physical Inventory - Erroneous Count	Self-Explanatory.
6	Physical Inventory - Other	Inventory Error Other Than 3, 4, or 5.
7	Miscellaneous - System/ Program Error	Duplicate Issue Docu- ment Produced.
8	Miscellaneous - Zero/ Partial Stow Found	Material Found that was Input as Zero/ Partial Stow.
9	Miscellaneous - Unresolved after Causative	No conclusive findings after causative research completed.
Blank	No Research Code Input	Self-Explanatory.

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2. Naval Supply Center, San Diego, Naval Integrated Storage Tracking and Retrieval System (NISTARS), Naval Supply Center, San Diego, CA, 1982.
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5. Navy Fleet Material Support Office, Statistical Accuracy Technique and Measurements Analysis, Navy Fleet Material Support Office, Mechanicsburg, PA, June 1985.

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