IG-99-028

AUDIT REPORT

MANAGEMENT OF NASA-HELD EQUIPMENT

June 9, 1999

National Aeronautics and
Space Administration

OFFICE OF INSPECTOR GENERAL

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Acronyms

NEMS	NASA Equipment Management System
NHB	NASA Handbook
NPDMS	NASA Property Disposal Management System
NPG	NASA Policy and Guidelines
OIG	Office of Inspector General
SEMO	Senior Equipment Management Officer

W June 9, 1999

TO: J/Associate Administrator for Management Systems

FROM: W/Assistant Inspector General for Auditing

SUBJECT: Final Report on Audit of Management of NASA-Held Equipment
Assignment Number A-HA-98-028
Report Number IG-99-028

The subject final report is provided for your use. Please refer to the Executive Summary for the overall audit results. Our evaluation of your response is incorporated into the body of the report. In response to management's comments on a draft of this report, we revised the recommendations. Please notify us when the actions have been fully implemented, including the extent of testing performed to ensure corrective actions are effective. All recommendations are considered undispositioned and will remain open until corrective actions are completed and determined to be effective.

If you have questions concerning the report, please contact Mr. Chester Sipsock, Program Director, Environmental and Financial Management Audits, at (216) 433-8960, or Mr. Richard Dix, Program Manager, at (301) 286-8525. The final report distribution is in Appendix F.

[original signed by]
Russell A. Rau

Enclosure

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NASA Office of Inspector General

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Management of NASA-Held Equipment

Executive Summary

Background. NASA buys or fabricates many types of equipment to carry out its mission and programs. Some of the equipment is assigned to, used, and controlled by NASA employees and is referred to as "NASA-held" equipment. Equipment is also provided to NASA contractors who are responsible for establishing their own procedures and systems to control and account for it as "contractor-held" equipment. As of July 1998, NASA-held equipment included about 605,000 items with a recorded cost of $4.7 billion. Our audit assessed a total sample frame of 173,140 equipment items, costing $1.2 billion, at Goddard Space Flight Center (Goddard), Marshall Space Flight Center (Marshall), and Stennis Space Center (Stennis).

Government property management regulations and NASA implementing policies require that all equipment be effectively accounted for and controlled, optimally used, and properly maintained and disposed of. Two primary internal controls for managing NASA-held equipment are the policies in NASA Handbook (NHB) 4200.1D, "Equipment Management Manual" (April 1992), and the NASA Equipment Management System (NEMS), which is the automated inventory system the Agency uses to identify, account for, and control equipment.[1] NASA Headquarters establishes the overall equipment management policies, while the Centers are expected to establish implementing policies and procedures to ensure effective and efficient equipment management and control.

Objective. The audit objective was to evaluate management of NASA-held equipment with respect to timely and accurate entry into the inventory, effective control and use, effective maintenance, and appropriate redistribution or disposal. Further details on the audit objective, scope, and methodology are in Appendix A.

Results of Audit. We identified no significant problems in verifying the existence of NASA-held equipment at Goddard, Marshall, and Stennis. Also, maintenance on the sampled equipment was timely and cost-effective. However, existing management controls over NASA-held equipment did not adequately ensure that all NASA-held assets were being fully used and effectively accounted for and managed. Specifically, we identified equipment at the three Centers for which data in the NEMS was incomplete or inaccurate and for which data had not been recorded into

[1]Only "controlled" equipment is entered into NEMS and managed under special procedures. A controlled equipment item is one that has an acquisition cost of $1,000 or more, and an estimated service life of 2 years or more and that will not be consumed or expended in an experiment. Controlled equipment also includes items costing less than $1,000, such as weapons, cameras, and computers, if they are considered "sensitive" due to losses or other factors.

the inventory in a timely manner. Also, equipment was being underused but not made available for redistribution or disposal, and equipment fit the description of controlled equipment but had not been properly tagged and recorded in the NEMS.

We observed the same kinds of problems on some nonsample items that we also reviewed during the audit. Although those items were not part of our sample and are not included in our sampling projections and results, we believe they provide additional evidence of the problems noted with the sample items and reinforce the need to take corrective actions.

The problems were primarily caused by weaknesses in NEMS input controls, lack of compliance with or misinterpretation of extant control procedures, and lack of accountability for and emphasis on optimizing equipment use. As a result, the Agency's ability to meet its goals to conserve and minimize resources and to effectively account for and control valuable assets is significantly diminished.

Although management took actions during our audit to address problems related to some sampled items, more comprehensive actions are needed to eliminate and prevent the types of problems we identified. Also, we recognize that NEMS is a legacy system and that the Agency is planning to reengineer asset management policies and replace the related systems in the future. However, some reasonable corrective actions are needed and prudent, in our opinion, to improve how equipment is used and managed until those new changes and systems are operational.

Recommendations. We recommend that management improve the completeness and accuracy of NEMS data, ensure that equipment is used to the fullest extent possible and is promptly disposed of when no longer needed, and ensure that all controlled equipment is tagged and entered into the property records in a timely manner.

Management's Response. Management concurred with all the recommendations. Actions are planned to reemphasize and clarify user responsibilities for reporting changes to their equipment so NEMS can be updated and equipment use can be improved. To promote timely tagging of all equipment, metrics will be placed in each Center's performance-based contract for equipment management and will be evaluated each year. Also, managers at the annual Senior Equipment Management Officer (SEMO) meeting in June 1999 will discuss the issues cited in the report.

Evaluation of Response. Management's proposed actions on the recommendations are considered responsive.

Introduction

NASA equipment policy requires existing equipment resources to be evaluated before new equipment is acquired, all equipment to be used to the fullest extent possible, and items no longer needed to be identified as excess and made available for redistribution or disposal. To help manage NASA-held equipment, the Agency implemented NEMS in the mid-1980's. All NASA Centers are required to use the system to identify, account for, and control their equipment. The Centers also use NEMS to record and account for Government-owned equipment provided to and used by on-site contractors.

Each Center maintains a separate NEMS database for its equipment. In addition, Marshall maintains the Agency's centralized NEMS database that contains consolidated information for the entire Agency. All controlled equipment must be promptly tagged and recorded in NEMS after inspection and acceptance, providing a means to track, control, and report it on the Agency's equipment management and financial records as assets. Periodic [2] physical inventories are performed to: verify and update NEMS; confirm the existence and location of equipment; and identify unrecorded, unneeded, and underused equipment. Division Directors and property custodians at each installation are required to perform annual walk-through inspections to ensure that equipment assigned to them is properly used and maintained. Generally, NASA property custodians are responsible for maintaining records on their assigned equipment and for reporting changes affecting NEMS (such as changes in item user or location) when they learn of the change or are notified by the user. A NEMS equipment manager, located at the Center, serves as a key liaison between the equipment management office and the users and property custodians. The equipment manager's responsibilities include establishing controls and records for all equipment, controlling NEMS data changes, and correcting data or process deficiencies identified during the physical inventory process.

Limited audit resources prevented a review of equipment at all the NASA Centers. To provide meaningful audit results in a reasonable timeframe, we restricted our review to samples from the total equipment inventories at Goddard, Marshall, and Stennis. We reviewed a total of 84 sample items in detail for those locations.[3] Details on the sample selection, the results, and the basis for projections used in the report are in Appendix B. We also limited our review of NEMS data to nine fields[4] that are important for the day-to-day control of equipment. The nine fields are discussed in Appendix C.

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[2] A complete inventory of controlled equipment must be performed at least every 3 years or when the property custodian changes. Sensitive equipment must be inventoried annually.

[3] For the 3 Centers we visited, we also selected 175 nonsample items (that were tagged and located near our sample items) to validate NEMS data on those items. The results are discussed in the relevant report sections but are not included in any of the projections.

[4] The nine fields are: Item Name/Description, Serial Number, Capital-Sensitive Code, Custodian Name, User Name, Item Location, Status Code, Receipt (Acquired Date), and Acquisition Cost.

Findings and Recommendations

Finding A. NEMS Data Accuracy

Incomplete or inaccurate data were in 1 or more of the NEMS data fields we evaluated for 66 (79 percent) of the 84 sample items. The most significant problems were related to the six fields shown in Table 1.[5] Although a number of factors contributed to the problems at the three Centers, the problems were primarily caused by weaknesses in data input controls and a lack of day-to-day accountability for reporting changes to equipment. Incomplete and inaccurate data diminishes the reliability and usefulness of the NEMS as a reporting or evaluation system and as a tool for controlling NASA-held equipment. Based upon our sampling and the results, we estimated that at least 122,929 items in the Goddard, Marshall, and Stennis inventories have one or more of the problems noted in Table 1.

Table 1. NEMS Fields With Inaccurate or Incomplete Data for 84 Sample Items

NEMS Problem Identified	Number of Items
Inaccurate or Missing User Name	18
Inaccurate Location	20
Inaccurate Capital-Sensitive Code *	17
Inaccurate Availability Status	19
Inaccurate Receipt Date	24
Inaccurate or Unsupported Cost	14

* This code identifies capital and sensitive equipment. Capital items are those valued at $100,000 or more and are reported as assets on NASA's financial statements. Sensitive equipment is that which, due to its value or nature, is subject to special physical and other controls not generally applied to other types of NASA equipment.

Importance of NEMS Data

To serve as an effective management information and control mechanism, NEMS must contain accurate and complete data. For example, to effectively assign and enforce accountability for the day-to-day use and safeguarding of equipment, a correct user name and organization is needed. An accurate item location helps in monitoring day-to-day accountability and utilization, as well as promoting an efficient physical inventorying process. An accurate capital-sensitive code is important for identifying equipment that has a potential high risk of loss and must be specially controlled. This code also supports the process for reconciling capitalized assets shown on the Agency's equipment management and financial records. An accurate availability status code is important because it shows whether the item is being actively used. Having the correct date of receipt is important for tracking equipment on hand as well as evaluating the timeliness of tagging

[5]The same problems were also noted for nonsample items we reviewed. For example, NEMS showed the wrong location and wrong availability status code for 30 items and the wrong user name for 11 items.

and recording the item into the NEMS. Finally, a well-supported and accurate item cost is critical because the NEMS is the primary source of information used to establish the value of NASA-held equipment assets for management and accountability purposes.

Results on Sampled Items

The various NEMS data fields were inaccurate or incomplete for a number of reasons, and in some instances, we could not clearly establish a cause. However, the problems related to each field and why they occurred, to the extent that we could determine, are discussed below.

User Name and Item Location Fields. NHB 4200.1D requires a *user name* to be entered only if the item is sensitive; otherwise the Center has the option to enter it or not. Of the 84 sampled items, 37 were sensitive. For 11 of those items, either the Centers had not entered a name into the NEMS or the name in NEMS did not reflect the current user. Also, the names in NEMS were incorrect for seven items that were nonsensitive, but the Centers had decided to enter names. NHB 4200.1D should be changed to make a user name mandatory in NEMS for all equipment, because the user name would provide a single and convenient means to clearly record accountability not only for safeguarding purposes but also for use and prompt disposal actions. While the policy change could require some additional effort and resources, it would be minimal, in our opinion, because some Centers are already entering names for nonsensitive items. A mandatory user name also gives the Centers the ability to more readily hold individuals responsible for their assigned items.

The *item location* field was inaccurate because NASA and on-site contractor personnel using the equipment moved it without notifying the property custodian or other appropriate official so that the NEMS could be updated.

The primary factor contributing to inaccurate user and location information was that NHB 4200.1D does not specifically require the users to promptly report changes when they occur so NEMS can be updated. Although NASA Procedures and Guidelines (NPG) 4200.2b, "Property Custodian Handbook," [6] has some provisions for reporting changes, NHB 4200.1D is the primary policy governing equipment management and should be used to identify and define user responsibilities. Clearly establishing user responsibilities in NHB 4200.1D and periodically reminding users of the responsibilities would help improve the accuracy of information in the NEMS.

Capital-Sensitive Code. The *capital-sensitive* codes were inaccurate primarily because the code in NEMS was not consistent with either the current Sensitive Item List [7] or the correct item cost. Since this code has two parts, an error in either part makes the code inaccurate. The “sensitive”

[6] NASA Equipment Management Procedures and Guidelines for Property Custodians (revised 9/11/98)

[7] Appendix J of NHB 4200.1D lists equipment categories that, due to either their value or potential for loss, are required to be given special protection and control. The list includes items such as computer equipment, audio and video recorders, weapons and hazardous items, telescopes, and microscopes. The NHB list represents the minimum items that must be controlled as sensitive, but the Centers may add items to the list they consider needing control and can revise the list accordingly.

portion of the code was inaccurate for the sampled items because the Centers did not update codes to reflect changes made to the Sensitive Item List. Some items were coded sensitive but should not have been according to the current Sensitive Item List. Other items were coded nonsensitive; however, their description fit one of the categories on the current Sensitive Item List. The items coded "capital" were wrong primarily because the cost in NEMS was incorrect (this problem is discussed in more detail in Appendix D). Some items were coded as capital items, but the correct cost was below $100,000, so those items should have been coded noncapital. Other items were coded noncapital, but their correct cost was more than $100,000, and they should have been coded and reported as capital assets.

Availability Status Field. The *availability status field* for some items was inaccurately coded because they were coded as "actively used" in NEMS. We determined that they were not fully used and could have been made available for redistribution or disposal. One reason for the NEMS status code not being consistent with item use was that assigned users were reluctant to release equipment if they believed they might need it again in the future and could not readily get a new item or replacement. Another contributing factor was that NHB 4200.1D does not define "active use," which caused different interpretations of whether an item was being actively used. These issues are discussed in more detail in Finding C.

Receipt Date and Cost Fields. The *receipt (acquisition) date* was inaccurate for the sampled items primarily because NEMS personnel either selected the wrong date from the input document or entered the date incorrectly. Inaccurate *cost* data was caused by inadequate pre- and post-reviews (primarily by the NEMS equipment manager or someone independent of the input process) to ensure that the input documentation fully supported the cost entered and that the cost was entered accurately. Having inaccurate cost data in NEMS can affect the value of assets shown in property management reports. Appendix D provides additional information on cost data problems identified with the sample items.

NEMS Reliability and Usefulness

Inaccurate and incomplete NEMS data, as discussed above, diminish the reliability and usefulness of NEMS in tracking and controlling individual equipment items and in assisting management in making sound equipment-related decisions. Management actions are needed to ensure that key NEMS fields (the nine we reviewed and any others that equipment managers might consider critical) are complete and accurate in order to make the NEMS (or any future system that uses its data) an effective management tool and an accurate source of information for valuing and reporting assets.

Recommendations, Management's Response, and Evaluation of Response

The Associate Administrator for Management Systems should improve the accuracy and completeness of NEMS information by:

1. Amending NHB 4200.1D to make *user name* a mandatory NEMS field for all controlled equipment, and when the primary user cannot be identified (such as with multiple-user items) to have the custodian name entered as the responsible user.

Management's Response. Concur. In the absence of a user name, the property custodian is considered the primary contact for the item. However, in light of efforts to enhance equipment accountability, the user name will be made a mandatory NEMS field when NHB 4200.1D is revised. This requirement will apply to new equipment entered into NEMS and will be incorporated for all other items as normal NEMS transactions permit. The complete text of management's response is in Appendix E.

Evaluation of Response. The planned actions are responsive. Adding the user name for items that are currently in NEMS as time permits is acceptable as long as management ensures accomplishment within a reasonable amount of time. It is possible that some items that currently do not have a user name entered may not have NEMS changes or updates for a year or more. While we do not advocate a labor-intensive effort at a single point in time, we believe management should establish a reasonable timeframe to have the user name entered for all items. We will evaluate the timeframe used during our review of management's implementation of this recommendation.

2. Performing additional analyses of NEMS costs to identify the extent of inaccurate and unsupported records and take appropriate action to correct errors and ensure that the total NEMS valuation at each Center and Agencywide is reasonably accurate.

Management's Response. Concur. Some Centers already perform random sampling to determine NEMS accuracy, and management will review the current sampling process and share best practices with the Centers (see Appendix E).

Evaluation of Response. The proposed action is responsive. Sampling is an efficient approach in monitoring data input quality. We will evaluate management's actions to ensure that all Centers have effective sampling processes when we follow up on the implementation of this recommendation.

3. Revising NHB 4200.1D, section 1.308, to make assigned users responsible for promptly reporting equipment changes that affect NEMS, especially changes to the user, item location, and availability status.

Management's Response. Concur. The recommended policy pertains to custodian responsibilities, not equipment management, and already exists in NPG 4200.2. NEMS Control (organization that processes all NEMS transactions) trains property custodians and instructs them regarding the urgency of prompt reporting. However, the importance of data input timeliness will be reemphasized, and management will add a paragraph similar to that in NPG 4200.2b to the next revision of NHB 4200.1D, "Equipment Management Manual" (see Appendix E).

Evaluation of Response. The proposed actions are responsive. We agree that property custodians have a role in reporting changes so NEMS can be updated. But the responsibility of being a custodian is an added duty, and many custodians manage a large number of items. Therefore, keeping up with changes for each item on a day-to-day basis is difficult. The actual users, who know the status of their equipment on a routine basis, are in a better position to ensure timely reporting of changes to the custodian so NEMS can be updated. Accordingly, users should be made more aware of their responsibilities as specified in a revised NHB 4200.1D.

4. Requiring the NEMS equipment managers to review their existing procedures to ensure they provide for updating the *capital-sensitive* code whenever either the item cost or Sensitive Item List changes.

Management's Response. Concur. On October 30, 1998, new guidelines were implemented for reporting capitalized equipment in NEMS that will minimize the potential for data input errors as a result of clarified categories of capitalized values. The change to NEMS is being implemented as a result of an April 1999 revision to the NEMS database (see Appendix E).

Evaluation of Response. Management's actions are responsive.

5. Reemphasizing to equipment managers the importance of ensuring that the cost and other critical NEMS fields are accurately input and updated and properly documented.

Management's Response. Concur. A method of checks and balances is currently in place to identify cost and critical field discrepancies and to reconcile NEMS with the financial system records. However, due to the errors discussed in the report, management will review the current sampling process to ensure that future errors are minimized (see Appendix E).

Evaluation of Response. The planned action is responsive. While evaluating the sampling process should help improve the accuracy of the cost and other fields, management should take additional steps to emphasize this area during the upcoming June 1999 SEMO meeting.

Finding B. Timeliness of Equipment Recording

Of the 62 sample items[8] evaluated for timely processing, 50 (81 percent), totaling $18.2 million, were not tagged and recorded in the NEMS in a timely manner. NHB 4200.1D does not specify what constitutes timely tagging and recording, and NEMS equipment managers were not closely monitoring and enforcing timely processing. As a result, NASA's property records do not accurately reflect assets on hand and the items may be exposed to unnecessary risk of loss or theft. We estimated that at least 90,968 items, costing about $627.1 million, in the Goddard, Marshall, and Stennis total inventories required more than 60 days to be tagged and entered into the official property records.

Timeframe for Tagging

Getting new equipment items tagged and entered into NEMS is critical to adequately protecting them against loss or theft and to ensuring that Agency property records are accurate. NHB 4200.1D requires Receiving and Inspections personnel to tag controlled equipment upon receipt and acceptance and to forward the accompanying paperwork to the NEMS management office so the equipment can be recorded in the inventory. While timely tagging and NEMS entry are expected, the manual does not establish an Agency-wide time standard or guideline for "timely processing." However, Goddard recently incorporated metrics into its performance-based contracts covering equipment management that require items to be tagged and entered into NEMS within 8 days after item receipt and acceptance. Neither Marshall nor Stennis had implemented similar standards for their contracts, although Stennis was in the process of establishing a performance standard of 5 days for its equipment management contract. Because these timeframes seemed to be reasonable for the tagging and recording process, we elected to use 7 days as a standard for timeliness in performing our evaluation.

Items Exceeding the Timeframe

The 50 sampled items that we considered untimely took an average of 54 days to be tagged and entered into the NEMS. As shown in Table 2, it took more than 60 days to tag and record in the property records NASA assets costing $6.8 million.

Table 2. Days to Tag and Record Sample Items

Days to Tag and Record	Number of Sample Items	Total Cost ($ millions)
1 – 7	12	$9.3
8 – 30	33	7.5
31 – 60	9	3.9
More Than 60	8	6.8

[8]Of the total 84 sample items, 21 were acquired before the NEMS was implemented. Because we were evaluating timeliness of tagging and recording into NEMS, we reviewed only the 63 sample items acquired after the NEMS was implemented. Also, we could not evaluate 1 of the 63 items because the date of receipt could not be identified.

We had difficulty identifying the specific reasons for the lengthy delays in tagging and recording some of the sample items because the NASA and contractor personnel involved in tagging and processing the particular item either could not recall what happened or no longer worked there. However, having equipment delivered directly to the users (usually at their request), without first having it delivered to the Center's Receiving and Inspection (warehouse) section, is one factor that contributes to this problem. If the equipment is not processed through the warehouse, the personnel responsible for inspecting and tagging the item would likely not know it had been delivered and needed tagging. Users and property custodians who receive equipment shipments directly are expected to notify the Receiving and Inspection section promptly after receipt, so that tagging and NEMS processing can be accomplished. However, the notifications were not always made. As a result, the items were not identified, tagged, and processed into NEMS for lengthy periods, sometimes until a scheduled physical inventory or walk-through inspection was performed.

Risks of Delayed Processing

Unnecessarily long delays in getting new equipment tagged and input into NEMS means that the property records at any given time do not accurately reflect the amount and value of equipment NASA has in its possession. Also, valuable equipment that has been received and not tagged and recorded is at increased risk of loss or theft because it is not in the official property records. An Agency-wide standard is needed to clearly establish what is considered timely for tagging and entering equipment into NEMS. Management needs to place increased emphasis on implementing the standard to fully address and correct the problems identified by the audit.

Recommendations, Management's Response, and Evaluation of Response

6. The Associate Administrator for Management Systems should increase the emphasis on timely equipment tagging and recording, including making it one of the metrics for evaluating property management effectiveness.

Management's Response. Concur. NASA policy emphasizes the importance of timely equipment tagging and recording into the NEMS. Contractors perform actual data entry under performance-based contracts that contain performance metrics established by each Center. Management will continue to evaluate the timeliness metric at the Center level (see Appendix E).

Evaluation of Response. The proposed actions are responsive. We did not determine during the audit and management's response does not indicate how many Centers currently have performance-based contracts that cover tagging and recording NASA-held equipment. However, presuming that all of them will have such contracts and related metrics in the near future, we accept the approach of having individual metrics to reflect local factors. We will evaluate implementation of this recommendation to determine the testing management has performed to assure the metrics established by the Centers are reasonable and promote effective results.

Finding C. Equipment Use, Redistribution, and Disposal

The Centers audited were not making full use of 12 of the 84 sampled items and did not make those items available for redistribution or disposal. This was primarily because of a reluctance by the assigned users to make the equipment available to others when it was not being actively used and because NHB 4200.1D does not defines "active use." As a result, optimal equipment use was not being achieved and Agency resources were not being conserved. We estimated that a total of at least 12,120 controlled equipment items at Goddard, Marshall, and Stennis are being underused and may contribute to unnecessary purchases of additional equipment.

Full Use of Equipment Expected

NHB 4200.1D, section 1.200, requires optimum use and reuse of NASA-owned equipment in order to minimize Agency assets and conserve resources. NASA Division Directors are primarily responsible for ensuring optimal equipment utilization by performing annual walk-through inspections, accompanied by the responsible property custodian, to identify underused or inactive items. However, the employees/equipment users also play a key role because they are responsible for identifying (and reporting to the property custodian) equipment not actively used.

Although NHB 4200.1D clearly outlines these responsibilities, it neither defines what "optimal" use is nor discusses the circumstances under which an item would be considered "not actively used." A clear understanding is critical for individual users and property custodians to determine whether they are carrying out their responsibilities and for the performance of reviews like ours to evaluate equipment utilization. Lacking such clarification and standards, we discussed current use of the sample items with the users and property custodians and used a common-sense approach to decide whether an item could be used more effectively without adverse effects on the project or program.

NEMS contains an *availability status* field with four codes: Status "A" indicates the item is being actively used; Status "B" indicates the item still has some future use by the assigned user but is not being used and could be shared with others; and Status "C" indicates the item is no longer needed and can be made available for use by others. Items are generally put into Status "C" for 90 days after which, if not claimed, are put into Status "D" indicating they will be disposed of. At one time, NEMS was used to screen[9] for available equipment using those codes. However, the NASA Property Disposal Management System (NPDMS), which contains items considered excess, is now used for screening purposes. Codes "C" and "D" are no longer used in NEMS. The Centers still enter and use the "A" and "B" Status codes in NEMS.

[9] Before new equipment is purchased, the existing equipment inventory must be searched to determine whether the same or similar item is already owned and may be available for use. This practice promotes full use of existing assets and conserves resources.

Factors Restricting Use

Twelve sample items were not being fully used[10] and were shown in NEMS as being actively used (that is, in status "A"). Some of the items had not been used for what we considered a long time (generally several months or more but we took into consideration the item's nature and use) and should have been reported as excess. Other items had some potential future use but were not being actively used and should have been coded Status "B" in NEMS allowing other offices to possibly use (share) them instead of purchasing additional equipment. The underused sample items ranged in type and value from hand tools and cameras costing a few hundred dollars to larger electronic components and computers costing thousands of dollars. The major reasons users gave for not making equipment available for shared use was that they considered occasional use "active use" and that they feared items might not be returned when they were needed. Items were not being excessed primarily because users thought they might use the item again in the future but did not identify a particular use and because users had not reported the items as excess.

Division Directors and property custodians are required to evaluate equipment use during the annual walk-through inspections. We could not clearly determine why those inspections did not identify the underused items identified by the audit. However, the lack of identification may be due, in part, to a difference in approach. For the audit, we identified specific equipment items and questioned the assigned users and property custodians about how the equipment was used and how often. In contrast, a typical walk-through inspection, as described in NHB 4200.1D, does not concentrate on particular equipment items. Rather, a walk-through is a broad, visual inspection to identify items not being used, for example, observing several computer monitors sitting on the floor or in boxes. Items stored in a box or out of sight because they were not being used (as was the case with some sample items) would not normally be identified or questioned. This approach is not sufficient to ensure that all controlled equipment is fully and properly used and should be changed.

Not using existing equipment to the fullest extent, including making it available for redistribution and use by others whenever possible, unnecessarily increases the amount of equipment being procured. For example, we identified seven new monitors, totaling about $10,000, that were assigned to Goddard and remained in boxes and unused for more than 14 months. These items were new and tagged and coded in NEMS as Status "A," or actively used. During that 14-month period, the Center purchased many monitors of the same or similar size and make. If the unused items had been identified and made available to others through NEMS, the seven monitors would not have been purchased. While the cost avoidance amount in this case was not particularly significant, we believe the situation is indicative of the unnecessary equipment purchases that could be occurring at Goddard and the other Centers due to the lack of emphasis on effective equipment use.

[10]We also identified 50 unused items at Marshall (mostly spare items for the Space Shuttle program) that were coded status "A." The assigned user (who was also the property custodian) was reluctant to give up the items and stated that changing the code from "A" to "B" would require him to justify future need for the item, and he wanted to avoid doing that.

Management action is needed to better identify underused equipment and to optimize the use of existing equipment in order to reduce the overall inventory and conserve scarce Agency resources.

Recommendations, Management's Response, and Evaluation of Response

The Associate Administrator for Management Systems should promote the fullest possible use of existing NASA-held equipment by:

7. Making all assigned users more aware of their responsibilities in optimizing use of their equipment, including making it available for sharing and redistribution whenever possible.

8. Emphasizing to Center equipment managers the importance of evaluating all equipment during walk-through inspections to ensure it is used to the fullest extent possible and promptly disposed of if no longer needed.

Management's Response. Concur. It is the responsibility of the property custodians and users to identify property that is no longer needed and to transfer or excess it as needed. Also, guidance in NHB 4200.1D is sufficient for conducting routine walk-through inspections. However, management will use the June 1999 SEMO meeting to reemphasize the importance of identifying items as potential property for reutilization (see Appendix E).

Evaluation of Response. The proposed action is responsive. The report emphasizes the critical role of the user in promoting full utilization of equipment and making the custodian or others aware when an item is not being actively and fully used. Discussing and reemphasizing utilization with the SEMO's is an important first step that we support. However, it is also important to emphasize utilization to the Division Directors, custodians, and especially users. We will evaluate management's implementation of this recommendation to ensure that management emphasizes utilization to all who have a role in this area of equipment management.

Finding D. Controls Over Tagging Fabricated Equipment

Fifty-five nonsample items that met the criteria for controlled equipment were not tagged and recorded in NEMS. This occurred primarily because the items were internally fabricated, rather than commercially purchased and processed through the normal procedures for tagging and recording. As a result, the three Centers did not properly account for, control, and report valuable assets.

Policy for Controlling NASA-Fabricated Equipment

NHB 4200.1D, section 3.103, requires that equipment that is fabricated and meets the criteria of controlled equipment be identified, accounted for, and recorded accordingly. This would include being properly tagged and entered into the NEMS. Equipment managers at each NASA installation must establish effective procedures for accomplishing this. Such procedures include coordinating with the local financial office to determine accurate pricing of fabricated items, providing documentation describing the equipment to the senior equipment management officer, and identifying organizations and areas with fabricated equipment so it can be reviewed at least annually.

Effectiveness of Controls

While locating and evaluating the sample items during the audit, we also briefly inspected the general vicinity near the sample items to identify equipment items that were not tagged and to determine whether they should be. We identified 55 equipment items at the 3 Centers that met the requirements for a controlled item and that should have been tagged and inventoried. The items had not been tagged and recorded in NEMS primarily because they were NASA-fabricated and not commercially purchased equipment. Forty-nine of the items were at Marshall. The on-site contractor employee responsible for them stated that it was his understanding that fabricated equipment did not have to be tagged and inventoried. As discussed earlier, fabricated items that meet the definition for controlled equipment must be tagged, recorded, and managed accordingly.

There may be other personnel involved with fabricated equipment who do not clearly understand the policies for controlling it, and as a result, there could be substantial quantities of this equipment that is not being accounted for, controlled, and reported as required. Management action is needed to ensure that fabricated equipment meeting the definition of controlled equipment is accounted for and controlled.

Recommendations, Management's Response, and Evaluation of Response

The Associate Administrator for Management Systems should ensure that all NASA-fabricated equipment, including items fabricated and/or used by on-site contractors, is properly recorded in NEMS by:

9. Requiring all NASA installation Division Directors to identify all equipment that was fabricated by or for their program(s) in the last 2 years and that is of significant value and still in use, and report it to the senior equipment management official so a determination can be made on whether the equipment should be controlled and recorded in NEMS.

10. Requiring each installation to evaluate their current procedures for identifying and controlling fabricated equipment to ensure they are in accordance with NHB 4200.1D and are effective, and to explain the procedures and policy to all personnel, including contractors, who are responsible for identifying and reporting fabricated equipment.

Management's Response. Concur. Management will emphasize the importance of identifying and controlling fabricated equipment during SEMO meetings and will continue to place emphasis on capturing these assets through the Center Property Accountability initiatives as well as enhanced property custodian and user training. Management will also ensure that on-site contractors are continually advised of NASA policies (see Appendix E).

Evaluation of Response. The proposed actions are responsive.

Appendix A. Objective, Scope, and Methodology

Objective

The audit objective was to evaluate the management of NASA-owned and NASA-held equipment by testing and verifying that:

- the assets (equipment) existed;
- equipment was tagged and entered into the NEMS in a timely manner;
- the NEMS cost was accurate and adequately supported;
- all the key NEMS data elements were complete and accurate;
- equipment was used effectively and was still needed;
- required maintenance was provided in a timely manner and cost-effectively; and
- equipment was being reused or disposed of appropriately.

Scope and Methodology

We reviewed only equipment that was considered NASA-held and that either was or should have been entered into the NEMS as of July 24, 1998. We also reviewed the NASA-owned equipment that Centers provided to on-site contractors because the Centers control the equipment in NEMS as "NASA-held equipment." The work did not include NASA-owned, contractor-held equipment that was not recorded in the NEMS system.

We reviewed NASA policies and procedures governing NASA-held equipment and interviewed management officials, property custodians, and equipment users. Testing of the controls and procedures included selecting a sample of equipment items from the NEMS and reviewing each sample item to verify its existence, whether it was tagged and recorded, and whether it was accurately and completely recorded in the NEMS. More details on the sampling techniques and projected results are in Appendix B.

We performed a limited review of additional, judgmentally selected, equipment items that were located within the general area of the statistically sample items. These are referred to in the report as nonsample items and are included in the finding discussions but are not included in any projections. The nonsample items included some tagged items in order for us to verify NEMS data and some items that were not tagged in order for us to determine whether they should have been.

The large number of data fields in NEMS made it impractical to validate them all within the timeframe planned for the audit, so we judgmentally selected the fields critical to effectively protecting and managing NASA equipment. The nine fields selected and verified for completeness and accuracy (to the extent permitted by available documentation) for each sample item were: Item Name/Description; Serial Number; Capital-Sensitive Code; Custodian Name; User Name; Item Location; Status Code; Receipt (Acquired) Date, and Acquisition Cost. They are described in more detail in Appendix C.

Use of Computer-Processed Data

Sampling data used in the audit was extracted from the central NEMS database and provided to us by the NEMS operations office at Marshall. We did not independently test either the overall NEMS data system or the sampling program used to produce the sample items. We relied on the methodology Marshall used and the data it provided in performing our audit work and in calculating the projections in this report.

Prior Audit Coverage

As part of the annual audit of NASA's Financial Statements, the firm of Arthur Anderson LLP [11] performed a limited review of NASA equipment. For fiscal year 1998, Arthur Anderson performed audit work at five locations: Dryden Flight Research Center, Johnson Space Center, Kennedy Space Center, Stennis, and Marshall. Using attribute sampling, with a 90-percent confidence level, the auditors reviewed 77 items. Those items were from a population of 3,614 additions, deletions, and transfers that occurred in the NASA-held capitalized equipment account from October 1997 through April 1998. Attributes tested were: (1) proper supporting documentation (invoice, purchase order, etc.); (2) proper approvals and authorization on supporting documents; and (3) correct classification in the Federal subsidiary account in NEMS. The test results were as follows:

- Dryden = 10 items reviewed; no exceptions noted.
- Johnson = 33 items reviewed; no exceptions noted.
- Kennedy = 16 items reviewed; 1 exception relating to untimely recording of transaction in NEMS (supporting document date was not consistent with transaction date).
- Stennis = 7 items reviewed; no exceptions noted.
- Marshall = 26 items reviewed; no exceptions noted.

The Arthur Anderson LLP auditors obtained an understanding of the property management cycle by (1) inspecting the receiving area for NEMS control tags on incoming items, (2) interviewing

[11] Arthur Anderson LLP is under contract with the NASA Office of Inspector General to audit NASA Financial Statements and to prepare a report as required by the Office of Management and Budget Bulletin 98-08, "Audit Requirements for Federal Financial Statements," August 24, 1998.

personnel for procedures on the timely input of transactions into NEMS, (3) reviewing the reconciliation of the general ledger to NEMS for April 1998, and (4) observing employee access to NEMS. The auditors did not perform substantive testing on these areas.

The Office of Inspector General (OIG) Office of Inspections, Administrative Investigations, and Assessments has also performed recent work in the property management area and issued three reports. The "Assessment of NASA Property Survey Boards and Officers," (G-96-020) dated February 24, 1998, assessed the property survey process and survey board and officer activities at three field locations and recommended procedural improvements to the operation of property boards and assessed officers who review lost, stolen, or damaged equipment. The report, "Property Survey Boards and Officers, Report Summary," (March 13, 1998) shared the conclusions and recommendations from activity G-96-020 with all Center Directors and all Center Supply and Equipment Management Officers. "Assessment of Property Disposal Outsourcing" (G-98-008, July 14, 1998) assessed a Center's pilot program to outsource Government property disposal activities and recommended several improvements.

Also, in 1995 the OIG performed a joint investigation and audit of missing equipment at NASA Headquarters. Most of the missing items were eventually located, but the OIG made several recommendations in a September 11, 1995, letter to the Acting Deputy Administrator. The OIG recommended holding employees and contractor personnel liable for security of equipment, strengthening the property survey process, and considering the institution of electronic tracking procedures.

Management Controls Reviewed

We reviewed (a) NHB 4200.1D, "Equipment Management Manual," which provides the basic policy and procedures governing NASA-owned and NASA-held equipment covered in the audit; (b) general policies and procedures used by property custodians and users in managing their assigned equipment items; and (c) specific NEMS inventory records and supporting documents for individual sample and nonsample items examined during the audit. We did not review controls governing the acquisition and accounting system processes because the audit focused on equipment management and inventory control aspects.

Audit Field Work

We performed field work from July 1998 to February 1999 at Goddard, Marshall, Stennis, and NASA Headquarters. The audit was performed in accordance with generally accepted government auditing standards. We issued an interim report (IG-98-023, dated August 20, 1998) to the Associate Administrator for Management Systems, addressing concerns and recommending improvements on the management of sensitive equipment.

Appendix B. Sampling Methodology, Data, and Results

To meet the audit objectives described in Appendix A, we selected sample items using a systematic sampling methodology after first ensuring that there was no possibility of bias in the list of inventory items. The universe was all NASA-owned and NASA-held equipment. Based on data obtained from the central NEMS database maintained at Marshall, the universe of NASA-held items, as of July 24, 1998, consisted of 604,684 items with a total value of about $4.66 billion.

Due to time and resource constraints, our sampling frame was limited to the on-site equipment at three NASA centers: Goddard, Stennis, and Marshall. The total equipment items in the sampling frame at the three centers represented approximately one-fourth of the total number and dollar value of items NASA-wide.

Using sample size parameters we provided, programmers in the NEMS operations office at Marshall developed a database query to select the sample items. It was decided to eliminate all personal computer equipment items (in Federal Stock Group 70 costing less than $10,000) since they would be managed under the new Office Desktop Initiative contract and eventually would not be recorded and controlled in NEMS. The programmers provided us a listing of sample items and a NEMS information sheet for each item. A sample of 91 items (30 each at Marshall and Stennis, and 31 at Goddard) was drawn from a population of 191,543 items with a total value of $1.49 billion. We determined sample size, in part, by the time required to locate and evaluate each sample and by a desired confidence level of 95 percent with an error rate no greater than ± 0.10.

During the evaluation of the 91 sample items, we determined that 7 items were located off site, at other Centers or locations like Guam. This led to a further refinement of our sampling frame (population) resulting in an adjustment in the original population size of 191,543 items. We omitted off-site sample items from the population and from the sample, resulting in a total sample size of 84 items, with a total recorded cost of $71.2 million, and a final sampling frame that consisted of 173,140 items with a total recorded cost of $1.194 billion. Our sample results are projected only to on-site equipment at the three Centers.

We used attribute sampling to estimate the rate or proportion of a particular desired characteristic found in the population. We determined the expected value of these items by multiplying the population mean cost of $6,894 to the projected number of items. We based all projections on the minimum value of a 95-percent confidence interval.

Appendix B

The table below summarizes the attribute statistics we used.

Table B-1: Summary of Attribute Statistics

Finding	**Sample Error Rate**[1]	Standard Error[2]	**Interval**[3]	**Population**[4]
NEMS Data Accuracy	.79	.044	.710 - .870	173,140
Recording Timeliness	.81	.050	.710 - .910	≅128,124[5]
Equipment Use	.14	.038	.070 - .210	173,140

[1] Error rate = Number of items that failed to meet criteria/total sample size.
[2] Standard Error for attribute sampling = [(probability of success x probability of failure) / sample size].$^{1/2}$
[3] 95-percent Confidence Interval = Error Rate ± 1.96 x Standard Error.
[4] Population = number of items identified in NEMS as on-site at the three Centers audited.
[5] Estimated number of items that were purchased after installation of NEMS. The estimate is based on sample findings that approximately 26 percent of the items were purchased before NEMS was deployed.

A summary of the sample results and related projections is shown in the following table.

Table B-2: **Problems Identified With Equipment Controls for Sample Items**

Problem Area	Number of Sample Items	Items With a Problem	Percent of Total Sample	No. Items Projected for the 3 Centers
NEMS Data Accuracy	84	66	79%	122,929
Recording Timeliness	62	50	81%	90,968
Equipment Use	84	12	14%	12,120

Appendix C. Description of NEMS Fields Reviewed

Item Name/Description. The standard for assigning an item name is the Federal Cataloging Handbook, Series H-6.

Serial Number. The manufacturer's serial number will be entered when one exists. When a serial number does not exist, "none" should be entered.

Capital-Sensitive Code. Six codes provide the mechanism for reporting capital equipment items to the financial management office for entry into the accounting general ledger:

M – Capital Equipment, Nonsensitive (unit cost of $100,000 or more)
N - Noncapital Equipment, Sensitive (unit cost of $500 to $99,999)
P - Capital Equipment, Sensitive (unit cost of $100,000 or more)
Q – Noncapital, Nonsensitive Controlled Equipment (unit cost equal to or greater than $1,000 but equal to or less than $99,999)
E - Contractor Equipment Reportable for Reutilization (unit cost of $1,000 or more)
X - Noncontrolled Equipment (includes loan-in and lease-in equipment)

Custodian Name. Identifies the current property custodian responsible for the item.

User Name. Identifies the currently assigned user and is not mandatory unless the item is sensitive. When there are multiple users, the property custodian name may be entered as the user.

Item Location. A zip code and building number and room number must identify current location.

Status Code. Describes the item's general availability for redistribution or reuse. The code is to be updated when the degree of availability changes. The four codes are:

A - Active-Assigned; item is unavailable for redistribution since it is being actively used
B - Inactive-Assigned; item is in storage, loan pool, or loaned out and is available for redistribution to others for use
C - Interactive-Unassigned; item is available upon demand for redistribution and use by others. Items in working condition that are no longer needed must be coded C for a minimum of 90 days before being declared excess (*this field is no longer used/maintained in NEMS*)
D - Excess; item is excess and will be disposed of by NASA (*this field is no longer used/maintained in NEMS*)

Receipt (Acquired) Date. The date generated by the NEMS that shows when the installation acquired the item.

Acquisition Cost. For commercially produced equipment, the item cost entered will be the unit purchase price, and for a capital item, the cost will include transportation, handling, and similar costs. For NASA-fabricated equipment, the cost will include all production costs, such as design, development, parts, and labor. When the cost is unknown, an estimated fair market value based on like items in NEMS or on an engineering estimate will be entered. The cost in NEMS may be adjusted if the item is modified or updated; otherwise, the cost remains the same for the life of the item.

Appendix D. Details on NEMS Cost Information

The NEMS is the primary source of information used by the Centers and Agency wide to establish the total value of NASA-held equipment assets for equipment accountability and management purposes. To establish an accurate valuation, the cost figure for each item must be accurately entered and supported. The acquisition cost is entered into the NEMS database for each item using the purchase document or other accompanying documentation. NHB 4200.1D, section 4.501(m), provides details on how to determine the correct cost to input.[12] Prior to data entry, the NEMS equipment manager should review supporting documentation for all new additions to ensure that the input data is correct. For cost data, the review should include examining the documentation to determine the correct cost. There should also be a post-entry review process within the NEMS office to ensure that the data are entered accurately. If an item is modified or upgraded, a revised cost must be entered. Revisions require the same level of review as new transactions to ensure that the cost entered is accurate.

To validate the accuracy of the cost for the sample items, we reviewed the documentation in the equipment file at the three Centers audited and held discussions with the users, property custodians, and NEMS personnel. Fourteen sample items, with a recorded total cost of $13.8 million, had an inaccurate or unsupported cost. For eight of the items, the NEMS acquisition cost did not match the cost in the supporting documentation. For the other six items, the equipment files did not contain adequate documentation to support the NEMS cost. The inaccuracies can be attributed primarily to inadequate reviews by the NEMS manager and input personnel of both the basis for the cost to be input (reviewed to determine what the correct cost was) and the actual cost figure (reviewed to ensure it was input correctly).

In some cases, the documentation provided to the NEMS office for input was not a purchase order or contract document and did not fully describe the basis of the figure. For the sampled items for which we took exception to the cost figure, neither the NEMS reviewers nor the input personnel questioned the basis for the cost but input it as shown. For example, one Goddard sample item was a computer, which according to NEMS cost $1.9 million. That cost figure was entered into NEMS based on a memorandum (from the program office) that cited the costs for three large computers that had been delivered at the same time. There was no purchase invoice or other document in the equipment file to support the basis for the cost that was shown. The individual who prepared the memorandum explained that the cost, which was ultimately entered into NEMS, was an estimate developed primarily to get the items tagged.

[12]For commercial items, the NEMS cost should be the actual purchase price. If the item is considered capital ($100,000 or more), the cost should also include transportation, handling, and installation costs if they can be readily and distinctly identified. The NEMS cost for NASA-fabricated items should include the design, development, parts, and labor costs incurred. If an item's acquisition cost is unknown, an estimated fair market value based on like items in NEMS or an engineering estimate will be entered in NEMS, and an "E" will be entered in the Estimated Cost Code data field to show that the cost was an estimate.

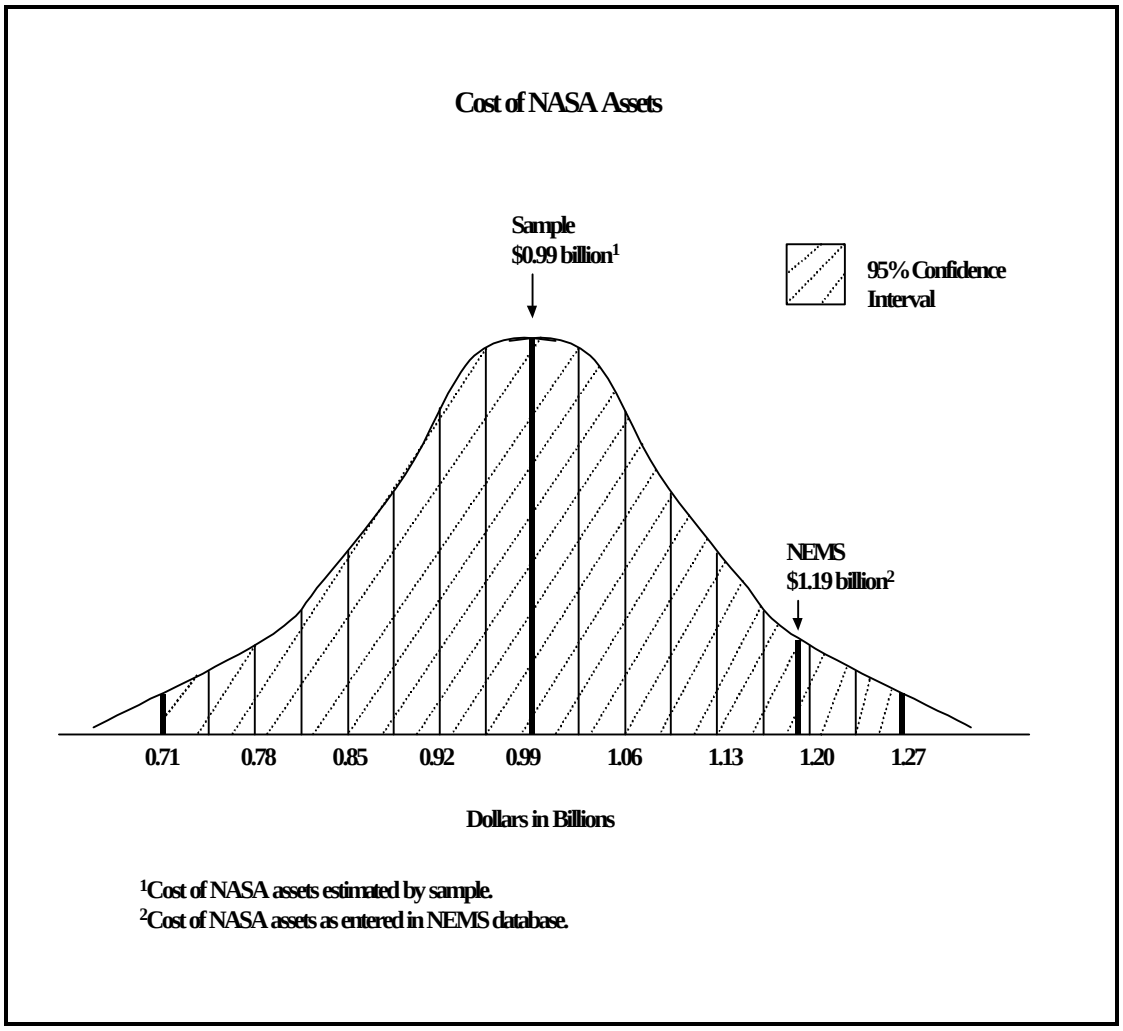
Appendix D

We requested documentation from the program office that showed how the original estimate was developed and what it included. We were told none was available and that it would have to be prepared. The documentation subsequently provided to us contained an estimated cost for the sample item that was $51,655 less than the $1.9 million cost entered into NEMS. The individual who had prepared both estimates could not explain the difference, but stated that the most recent estimated cost should be considered the accurate one. If NEMS personnel had required documentation that fully described the basis of the cost and had adequately reviewed it to verify the correct cost prior to entry, we believe this particular error would have been avoided.

In other cases, the supporting documents and the costs they reflected were adequate, but the costs were entered incorrectly, due either to a misunderstanding of the data or an entry error. For example, we identified a $10,185 item at Stennis that was originally entered in NEMS correctly, but was later incorrectly updated to show a cost of $1.6 million. This happened because the individual updating the NEMS incorrectly entered the total amount for *all* the equipment on the contract, not just the sample item cost. An independent review by the NEMS manager either of the planned input before it occurred or of the cost after it was entered should have identified the error. In this case, we could not determine whether the NEMS manager performed the review or whether the review overlooked the error. Nonetheless, this case and the others like it indicate a need for more emphasis on ensuring that an accurate cost is entered in NEMS.

We estimated that at least 15,582 controlled equipment items collectively at Goddard, Marshall, and Stennis with a total expected cost of $107.4 million, have either an inaccurate or inadequately supported NEMS cost. Of that total, we estimated that at least 5,540 items have an inaccurate cost in NEMS. As shown in the following figure, at a 95-percent level of confidence, the actual total cost of NEMS assets at the three Centers audited is within the confidence interval $0.71 billion and $1.27 billion. In other words, the current NEMS asset valuation at the three Centers could be overstated by as much as $482.5 million or understated by as much as $76.2 million.

Appendix D


Cost of NASA Assets
Sample
$0.99 billion[1]
95% Confidence
Interval
NEMS
$1.19 billion[2]
0.71
0.78
0.85
0.92
0.99
1.06
1.13
1.20
1.27
Dollars in Billions
[1]Cost of NASA assets estimated by sample.
[2]Cost of NASA assets as entered in NEMS database.

Appendix E. Management's Response

National Aeronautics and
Space Administration
Headquarters
Washington, DC 20546-0001

Reply to Attn of: JG

MAY 14 1999

TO: W/Assistant Inspector General for Audits

FROM: J/Associate Administrator for Management Systems

SUBJECT: Draft Report on the Audit of Management of NASA-Held Equipment
Assignment Number A-HA-98-028

As requested, the Audit of Management of NASA-Held Equipment, Draft Report has been reviewed. The original draft report identified eleven recommendations. Through subsequent negotiations with the Office of the Inspector General, two recommendations have been deleted and the remainder have been modified so that we can now concur with all recommendations.

While we have difficulty with some of the findings and question the accuracy pertaining to the statistical presentation of the results, we believe the recommendations provide appropriate opportunities for process improvement. We appreciate the opportunity to clarify and help improve upon the recommendations. These efforts required more than 282 staff hours.

If you have any questions or comments regarding the response, or need further elaboration/explanation of the response, please contact me or Ms. Susan Kinney at 358-2304.

Jeffrey E. Sutton

Enclosure

Management Systems
Comments on
Draft Report on the Audit of Management of NASA-Held Equipment
Assignment Number A-HA-98-028

Recommendation #1.
Amending NHB 4200.1D to make user name a mandatory NEMS field for all controlled equipment, and when the primary user cannot be identified (such as with multiple-user items)to have the custodian name entered as the responsible user.

Concur.

Current policy requires Centers to assign a user name only if the item is considered to be sensitive (requiring a stringent degree of control). In the absence of a user name (i.e., a nonsensitive item), the property custodian was already considered the primary contact for the item. The custodian name along with the organizational code and building location was the method for property accountability. However, in light of recent efforts to enhance equipment accountability, Management agrees to make the "User Name" field mandatory for the NASA Equipment Management System (NEMS).

Details on the implementation of this requirement will be developed by the Logistics Management Office and the Agency Logistics Managers/Supply and Equipment Managers (SEMOs). Results will be reflected in the NPG 4200 when revised. This requirement will apply to *new equipment* entered into NEMS and will be incorporated for all other items as normally occurring NEMS transactions permit.

Recommendation #2.
Performing additional analyses of NEMS costs to identify the extent of inaccurate and unsupported records and take appropriate action to correct errors and ensure that the total NEMS valuation at each Center and Agencywide is reasonably accurate.

Concur

Given that cost variences were identified during the audit, NASA Management will emphasize the need for Centers to strengthen their procedures for validating cost data as part of their normal receiving and tagging process. Some Centers already perform random sampling to determine the accuracy of NEMS data in an effort to evaluate their performance based contracts. Management agrees to review best practices from these Centers and share these processes with the other Centers.

Recommendation #3.
Revising NHB 4200.1D section 1.308 to make users responsible for promptly reporting equipment changes that affect NEMS, especially changes to the user, item location, and availability status.

Enclosure

Concur

The policy desired pertains to custodian responsibilities and not Equipment management, thus the policy is already included in the Property Custodian NHB/NPG 4200.2, paragraph 2.7.2. This document adequately describes the employees' responsibility as:

> *"reporting any missing or untagged (meeting the criteria for control) equipment, transfer, location change, or user change of equipment to the property custodian immediately."*

It is the property custodian's responsibility to report changes to NEMS both in the current and revised version of NHB 4200.1. Property Custodians are trained by NEMS Control and are instructed regarding the urgency of prompt reporting. They are also provided detailed procedures for accomplishing all NEMS transactions (NPG 4200.2B).

However, management agrees to reemphasize the importance of data input timeliness and accuracy to the Agency SEMOs and although it is a duplication of effort we agree to add a similar paragraph to NPG 4200 the Equipment Management Manual in the next revision.

Recommendation #4.
Requiring the NEMS equipment managers to review their existing procedures to ensure they provide for updating the *capital-sensitive* code whenever either the item cost or Sensitive Item List changes.

Concur

The requirement to update the capital-sensitive code already exists in NHB 4200.1D for mandatory fields. Data input accuracy will be enhanced through recent modifications to the NEMS database. On October 30 1998, NASA Headquarters Logistics Management Office implemented new guidelines for reporting Capitalized Equipment in NEMS. This new policy will minimize the potential for data input errors due to clarified categories of capitalized values. The new policy permits Agency Property managers the ability to distinguish between the Acquisition cost, Capitalized value (e.g. over 100K) and the actual equipment cost (Acquisition cost plus enhancements). The Financial Management Office cosigned our policy which affected a modification to NEMS in January 1999. This change to NEMS is currently being implemented as a result of the April 1999 revision to the NEMS database.

This modification already achieves the OIGs recommendation with respect to capital-sensitive code updates for equipment cost changes.

Recommendation #5.
Reemphasizing to equipment managers the importance of ensuring that the cost and other critical NEMS fields are inputted and updated accurately and properly documented.

Concur.

Management has a method of checks and balances in place to identify cost and critical field discrepancies. Firstly, the majority of the NASA Centers are under a performance based contract. As such, the contractor's accuracy is sampled to determine the appropriate level of award fee for a particular period of performance. After data has been entered, the balances are reconciled annually with the Agency Financial Management Offices (for those items over 100K). Any discrepancies are noted and remedied at that time. This dual checks and balances process improves the data accuracy for cost data, however since the OIG did find errors within these fields, Management agrees to investigate our current sampling process to ensure future errors are minimized.

Recommendation #6.
Increasing the emphasis on timely equipment tagging and recording, including making it one of the metrics for evaluating property management effectiveness.

Concur.

Our policy currently emphasizes the importance of timely equipment tagging and recording into the NEMS system. However, the actual data entry is done at the NASA Centers by contractors under a performance based contracts. Center's workload fluctuates drastically during the year, so the Performance Based level for data input has been based upon measuring the current process, evaluating the amount of equipment and determining the most cost effective metric at each Center. We concur that every NASA Center should measure this activity but do not believe NASA Headquarters should set the threshold nor track such a metric. This metric is and will continue to be measured at the Center level.

Recommendation #7
Making all assigned users more aware of their responsibilities in optimizing use of their equipment, including making it available for sharing and redistribution whenever possible and;
Recommendation #8.
Emphasizing to Center equipment managers the importance of evaluating all of their equipment during walk-through inspections to ensure it is used to the fullest extent possible and promptly disposed of if no longer needed.

Concur

The current policy in the Property Custodian Handbook identifies numerous Standard NEMS reports for Property Custodians to use to ensure equipment is accurately documented, tracked and monitored for continued need before it is identified as "excess".

These reports include:

Monthly Transaction reports – Property Custodians are to ensure the transactions are accepted and processed through NEMS as submitted.

Custodian Account Property reports – A report generated quarterly to be validated against the NASA equipment transfer forms.

Equipment Utilization Review Reports – "annually the Directory of the using directorate or major organization until will ensure that equipment assigned to the organization is properly utilized and maintained, with inactive or underutilized equipment being turned to the supply and equipment organization for reutilization screening . NEMS control will annually produce a report of all equipment by division and property custodian number for division chiefs and property custodians in order to conduct the annual equipment utilization review."

Items in this category are reviewed annually to verify that the items are still required for use. Otherwise they are identified as "excess" and are transferred to the NASA Property Disposal Management System NPDMS for screening and reutilization to NASA, Other Federal agencies. Donations, and exchange sale, auction and then abandonment and destruction.

Management feels there is sufficient guidance documented in NHB 4200 for Division Directors/Chiefs to follow in conducting their routine walk-through inspections. It is the responsibility of the property custodian and users to identify that property that is no longer needed and to transfer or excess it as needed. Management (The Logistics Management Office) will address this issue during the June 1999 SEMO meeting to reemphasize the importance of identifying items as potential excess property for reutilization.

Recommendation #9.
Requiring all NASA Installation Division Directors to identify all equipment that was fabricated by or for their program(s) in the past 2 years, that is of significant value and still in use, and report it to the senior equipment management official so a determination can be made as to whether is should be controlled and recorded in NEMS.

Concur.

Management believes that our current policy adequately covers the OIG concern. The policy statement in NHB 4200.1D addresses "experimental and fabricated" equipment and states that the SEMO should identify areas and organizations having experimental equipment and, at least **annually**, review them to ensure proper establishment of any equipment requiring control. We will continue to place emphasis on the importance of capturing these assets through the Center Property Accountability initiatives and training and address this issue at the next meeting with Agency SEMOs.

Recommendation #10.
Requiring each Installation to evaluate their current procedures for identifying and controlling fabricated equipment to ensure they are in accordance with NHB 4200.1D and are effective, and to explain the procedures and policy to all personnel, including contractors.

Concur.

NHB 4200.1D addresses "experimental and fabricated" equipment and states that the SEMO should identify areas and organizations having experimental equipment and, at least annually, review them to ensure proper establishment of any equipment requiring control. Management agrees to emphasize the importance of identifying and controlling fabricated equipment during Supply and Equipment Management meetings and will continue our emphasis for capturing these assets through the Center Property Accountability initiatives and enhanced property custodian and user training as well as ensuring on-site contractors are continually advised of NASA policies.

Appendix F. Report Distribution

National Aeronautics and Space Administration (NASA) Headquarters

Code A/Administrator
Code AI/Associate Deputy Administrator
Code B/Chief Financial Officer
Code G/General Counsel
Code J/Associate Administrator for Management Systems
Code JM/Director, Management Assessment Division

NASA Centers

Ames Research Center
Dryden Flight Research Center
John H. Glenn Research Center at Lewis Field
Goddard Space Flight Center
Jet Propulsion Laboratory
Lyndon B. Johnson Space Center
John F. Kennedy Space Center
Chief Counsel, John F. Kennedy Space Center
Langley Research Center
Marshall Space Flight Center
John C. Stennis Flight Center

NASA Offices of Inspector General

Ames Research Center
Dryden Flight Research Center
John H. Glenn Research Center at Lewis Field
Goddard Space Flight Center
Jet Propulsion Laboratory
Lyndon B. Johnson Space Center
John F. Kennedy Space Center
Langley Research Center
George C. Marshall Space Flight Center
John C. Stennis Space Center

Appendix F

Chairman and Ranking Minority Member - Congressional Committees and Subcommittees

Senate Committee on Appropriations
Senate Subcommittee on VA, HUD, and Independent Agencies
Senate Committee on Commerce, Science, and Transportation
Senate Subcommittee on Science, Technology, and Space
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on VA, HUD, and Independent Agencies
House Committee on Government Reform and Oversight
House Subcommittee on National Security, Veterans Affairs, and International Relations
House Committee on Science
House Subcommittee on Space and Aeronautics

Congressional Member

Honorable Pete Sessions, U.S. House of Representatives

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