REPORT TO THE CONGRESS

Improvements Needed In Managing Nonexpendable End-Item Equipment In The Air Force

B-133361

BY THE COMPTROLLER GENERAL OF THE UNITED STATES

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

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To the President of the Senate and the
Speaker of the House of Representatives

We are reporting on improvements needed in managing nonexpendable end-item equipment in the Air Force.

Our review was made pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

We are sending copies of this report to the Director, Office of Management and Budget; the Secretary of Defense; and the Secretary of the Air Force.

Comptroller General
of the United States

Contents

ABBREVIATIONS

AFEMS	Equipment Management System
AFLC	Air Force Logistics Command
ALS	Advanced Logistics System
AMA	Air Materiel Area
ANG	Air National Guard
EMO	Equipment Management Office
FSN	Federal stock number
GAO	General Accounting Office
MAP	Military Assistance Program

COMPTROLLER GENERAL'S REPORT TO THE CONGRESS

IMPROVEMENTS NEEDED IN MANAGING NONEXPENDABLE END-ITEM EQUIPMENT IN THE AIR FORCE B-133361

D I G E S T

WHY THE REVIEW WAS MADE

GAO tested the accuracy of the Air Force's new Equipment Management System to determine whether management was provided with current, complete, and accurate information on which to base budget, procurement, and other decisions concerning this equipment.

This highly mechanized system is used to manage nonexpendable equipment, such as test equipment, generators, and vehicles which are not consumed in use and do not lose their identity by incorporation into larger items.

GAO previously reported on weaknesses in the system for managing this equipment. In 1969 the Air Force redesigned the system and increased the use of computers.

FINDINGS AND CONCLUSIONS

Basic facts

Data from this system is used to make decisions to buy for present needs, budget for future needs, retain or release excess equipment, and support requests for funds from the Congress. The Air Force has about 86,000 line items of nonexpendable equipment with a worldwide inventory of about $8.3 billion.

Because unreliable data was used to compute requirements, the need to buy equipment valued at $532 million as determined by the Air Force is questionable. GAO statistically sampled 100 line items in a buy position and found significant errors in the data used to arrive at the buy computation. Correction of these errors substantially reduced the need for $3.1 million worth of equipment for these items. (See p. 9.)

On the basis of analyzing 200 statistically selected computations, including the 100 items, GAO estimates that gross equipment needs were misstated by $454 million and assets available to meet these needs were misstated by $383 million. Total equipment needed was computed at $8.7 billion, and the total assets were $8.3 billion.

GAO's findings and the causes for unreliable data have been discussed with Air Force officials; corrective actions have been initiated for several.

Causes for unreliable data being used could be eliminated or minimized within the system by:

--Strengthening system design and procedures and improving the accuracy of source data. (See ch. 3.)

--Emphasisizing to Air Force Commands and bases the need to report accurate and complete data into the system. (See ch. 4.)

--Providing intensive training of personnel and insuring in-depth management review of system products. (See ch. 5.)

Management was not always provided with reliable data for making decisions to buy, budget, hold, or release equipment.

This system is scheduled to be absorbed before 1978 into a new, highly sophisticated system the Air Force is developing, called the Advanced Logistics System. GAO is concerned that unreliable data will be carried into the new system and will minimize its expected benefits.

RECOMMENDATIONS

GAO recommends that the Secretary of the Air Force establish a temporary internal review and reporting system at the highest level to insure that longstanding problems in source data are corrected before this data is introduced in the Advanced Logistics System. (See pp. 33 and 34.)

To improve reliability of data entered and retained in the Equipment Management System, GAO further recommends that the Secretary:

System weaknesses and source data

1. Require item managers to establish proper inventory control.

2. Consider worldwide inventory reporting for certain assets on board aircraft.

3. Establish and maintain a permanent data bank file which should be updated with reason-coded transaction change reporting.

4. Redefine items selected for individual management on the basis of need for control rather than dollar values and eliminate printouts of requirements computations on low-quantity line items.

Command and base reporting

1. Require base commanders to systematically review and correct basic equipment records and properly attend to physical inventories and reporting of available assets.

2. Require all major commands to carefully review their projected requirements to preclude major misstatements of needs.

Training and management reviews

1. Require review teams at Air Materiel Areas and at Headquarters to pay particular attention to manual changes by item managers and identify the most troublesome areas to be used as training subjects.

2. Reemphasize standardized and specialized training for all requirements personnel at Air Materiel Areas.

AGENCY ACTIONS AND UNRESOLVED ISSUES

The Air Force acknowledged that errors do exist and refinements to, as well as compliance with, the system are necessary. The Air Force stated that although this system, when effectively applied, can provide reliable data for asset accounting and requirements computations, action has been taken to modernize it.

According to the Air Force:

--Because of its Air Force Equipment Advisory Group's recommendations, a work group has been established to modernize the system. This group's initial task is to insure greater visibility and asset control. (See p. 34.)

--Policies, procedures, and automated management capability to improve system weaknesses and source data are prescribed in the plan for the system's update. Automated systems are being reviewed to determine methods for managing low-dollar, low-quantity items. (See p. 22.)

--Air Force Headquarters will work with its commands and subordinate activities to meet objectives of command and base reporting. (See p. 28.)

--Materiel Management Review Team operating instructions will be revised. Emphasis has been placed on training Air Materiel Area personnel. (See p. 31.)

MATTERS FOR CONSIDERATION BY THE CONGRESS

This report is intended to alert the Congress to the need for improvements in the Air Force's system and corrective actions the Air Force is taking. Unless and until these action's are fully implemented, the Air Force's requests for funds for nonexpendable equipment could be in error.

Tear Sheet

CHAPTER 1

INTRODUCTION

The Air Force has about 86,000 line items of nonexpendable equipment with a worldwide inventory of about $8.3 billion. The inventory, which has increased by about 36,000 items and $5.5 billion since 1961, includes such items as test equipment, generators, vehicles, communications equipment, and various types of aerospace ground support equipment. This equipment is not consumed in use and does not lose its identity by becoming a part of a larger item. Monthly reporting is required for each asset.

The Air Force Equipment Management System (AFEMS) computes requirements for this equipment through highly mechanized reporting and computing. Computed needs are used to prepare fund requests to the Congress. Funding requests developed from computed positions are adjusted for changes and funding limitations. Funds for equipment are included in various Air Force appropriations, including Other Procurements, Aircraft Procurements, and Missile Procurements.

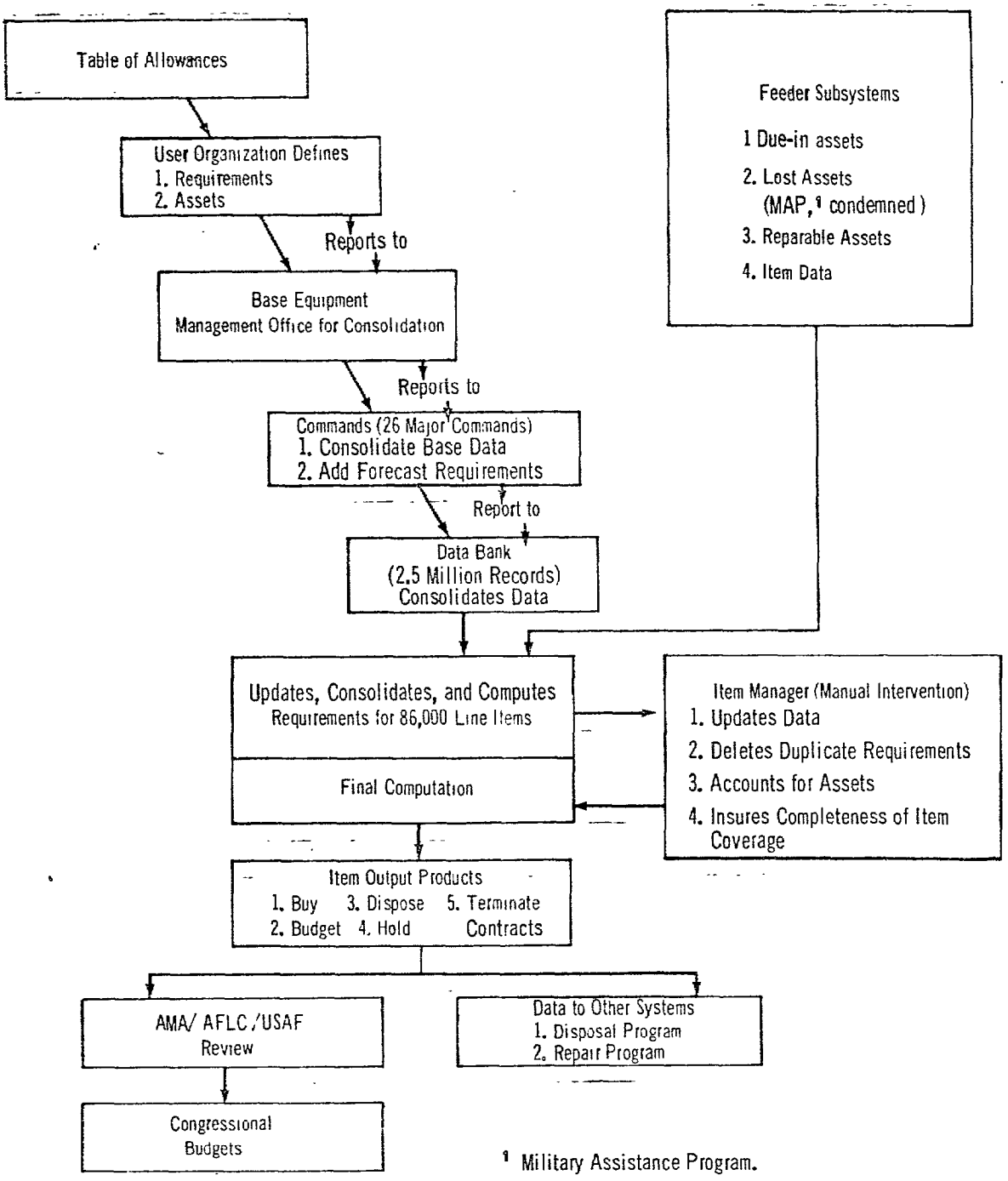
EQUIPMENT MANAGEMENT PROCESS

Air Force commands are responsible for obtaining valid asset and requirements data used to compute equipment needs. The Air Force Logistics Command (AFLC) is responsible for computing requirements. Five Air Materiel Areas (AMAs), the the principal operating elements of AFLC, are the inventory control points for worldwide management of equipment.

Equipment requirements are computed for centrally procured items costing over $10 whose management and requirements determinations are controlled through table of allowance documents. The requirements formula for such equipment is: Gross operating requirements minus assets equals net operating requirements.

The steps by which equipment requirements and assets are reported and channeled into the computation system are charted on page 6 with explanation following.

CHART OF REQUIREMENTS COMPUTATION PROCESS



[1] Military Assistance Program.

The process begins with table of allowance documents which prescribe the equipment and maximum quantities allowed to Air Force organizations. From these tables organizations determine their minimum essential equipment needs. These needs, when approved by proper authority, become requirements. Records of needs and assets are maintained on base-level computers and reported monthly to major commands.

Monthly, the major commands consolidate base-level data and forecast needs for scheduled mission support changes. This data is reported to the Air Force Data Bank where it is used to develop a record of the needs and assets for all Air Force organizations. Quarterly, the base-reported data from 13 other automated feeder systems is consolidated for requirements computations.

Four mechanical computations are processed each year. Summary computations are printed for each item at least twice a year--initial and midyear--and on an exception basis for the other two quarters. Summary computations show gross requirements and assets and are supported by detailed computer listings of base level requirements and assets. Central item managers at each AMA are responsible for these computations and the total item support for all weapons and systems.

The item manager must review and insure the validity of data recommendations from all sources and update the computations accordingly. He adds, changes, and deletes data as necessary to arrive at a valid computation and thereby insures complete item coverage. Some of the data verifications required include:

1. Item management data, such as Federal stock number (FSN), unit cost, replacement rates, asset accounting codes, nomenclatures, production leadtime, repair cycles, etc.

2. History of total procured assets.

3. History of asset losses, such as condemnations and shipments to foreign countries.

4. Reported data from using organizations concerning equipment needs and assets.

5. Forecast data for future requirements.

To fulfill these broad responsibilities, the item manager must have complete visibility of all item procurements, shipments, current locations, current and future requirements, and past losses.

One of his important control functions is asset accounting. Since assets are nonexpendable and subject to accounting within AFEMS, the item manager must maintain a manual record of assets procured. The formula for asset accounting is: Procured assets minus recorded losses equals in-use assets. The computed quantity of in-use assets equals the quantity of reported assets only if all procurements, losses, and in-use assets have been reported correctly. This is an important check because unreported assets may fill requirements rather than procuring new items.

The final requirements computations, after item manager adjustments, provide the basis for management decisions to buy, budget, dispose of, or hold equipment and to terminate contracts. Computed buy and/or budget requirements are reviewed at several management levels. AMAs and a joint Air Force Headquarters-AFLC team review requirements projecting high-dollar buys. Requirements projecting low-dollar buys are usually reviewed only at the AMA. The review team submits buy and budget funds it has approved, along with other funding needs, to the Office of the Secretary of Defense to support requests for procurement funds from the Congress.

Final requirements data is relayed to other automated systems, including redistribution and marketing, repair programs, and the computation of spare parts requirements. This data may ultimately result in requirements for repair programs and spare parts procurements.

CHAPTER 2

ASSETS AND REQUIREMENTS MISSTATED

The Air Force computes equipment needs through a highly mechanized reporting and computing process. Air Force bases and major commands report assets and present and future operating requirements. The reported data, together with other requirements and assets data, is processed in mechanical requirements computations for each item. The requirements formula for this computation is: Gross operating requirements minus assets equals net operating requirements.

As of December 31, 1971, gross requirements totaled $8.7 billion; assets, $8.3 billion. The fiscal year 1973 computed requirements showed a need to buy $532 million worth for known requirements and $119 million worth for future requirements.

To make sound management decisions to buy, budget, retain, or release equipment, reliable data must be used to compute net operating requirements.

To evaluate the reliability of data in AFEMS, we statistically selected and reviewed 200 line item computations, of which 100 were for equipment in a computed buy position.

For the 100 items operating requirements were misstated in 55 computations and assets were misstated in 47. Net requirements were misstated in 59.

The following table illustrates the effect of these errors on the computed value of equipment to be bought.

AMA	Air Force initial computation	Air Force final computation	Our computation
San Antonio	$1,172,745	$ 559,689	$ 21,913
Ogden	1,489,487	216,820	103,570
Sacramento	3,265,097	1,786,894	97,145
Oklahoma City	121,231	12,219	562
Warner Robins	2,817,859	596,635	99,945
Total	$8,866,419	$3,172,257	$323,135

The final Air Force computation does not mean that material of this value is automatically purchased. The computation is subjected to further review and adjustment as discussed on page 29.

After we corrected errors, the computed buy requirement for the 100 items was substantially reduced. Specific items and quantities by which requirements could be reduced were discussed with officials at each AMA. While we cannot reliably estimate the overstatement in the Air Force-computed buy of $532 million, it could be substantial, on the basis of the extent of overstatement found in our sample.

The remaining 100 computations showed similar misstatements, which could affect such actions as budgets, retention, disposal, or contract terminations.

Errors in both operating requirements and asset accountability caused misstatements for 95 of the 200 selected items, or 45 percent. Offsetting errors kept the misstatements in operating requirements and assets from having a totally cumulative effect on net requirements.

For the 200 computations, operating requirements were misstated by $2.1 million and assets by $2.2 million. These misstatements caused net requirements to be misstated by $3.4 million.

On the basis of our sample results, we estimated misstatements for operating requirements at about $454 million, or 5.2 percent, and assets at about $382 million, or 4.6 percent. (See app. III.)

The major causes for unreliable and incorrect data entering the requirement computations are discussed in subsequent chapters.

AMA	Procured assets	Reported assets	Unaccounted-for assets
Oklahoma City	$ 3,776,224	$ 2,724,929	$ 1,051,295
Ogden	7,381,029	6,190,143	1,190,886
San Antonio	17,631,853	8,629,848	9,002,005
Sacramento	24,930,394	21,690,138	3,240,256
Warner Robins	8,353,653	4,163,891	4,189,762
Total	$62,073,153	$43,398,949	$18,674,204

These assets may not all have been available. Once accounted for, those still in the system but not needed to meet other requirements should have been used to meet fiscal year 1973 operating requirements.

Conditions contributing to the inability to account for assets were:

--Procurement histories were frequently not current or complete.

--Assets procured by the Air Force Systems Command with direct deliveries to using organizations were not always reported to item managers in AFLC.

--Asset losses were not always reported and/or used in requirements computations.

--Asset accounting criteria were not clear.

--In-transit assets were not accounted for.

An example of the lack of asset accountability concerns a Radio Test Set (FSN 6625-934-0373CX). On the basis of the December 1971 computed requirement, AFLC approved a buy for three test sets with a unit cost of $65,431. The December computation accounted only for 13 assets, but the procurement history records showed that 15 had been purchased. The item manager had not attempted to account for all procured assets. At our request he researched available records, made several telephone calls, and found the two unreported assets. They were added to the computation, and the purchase request for this item was decreased from three to one, for a reduction of about $117,335.

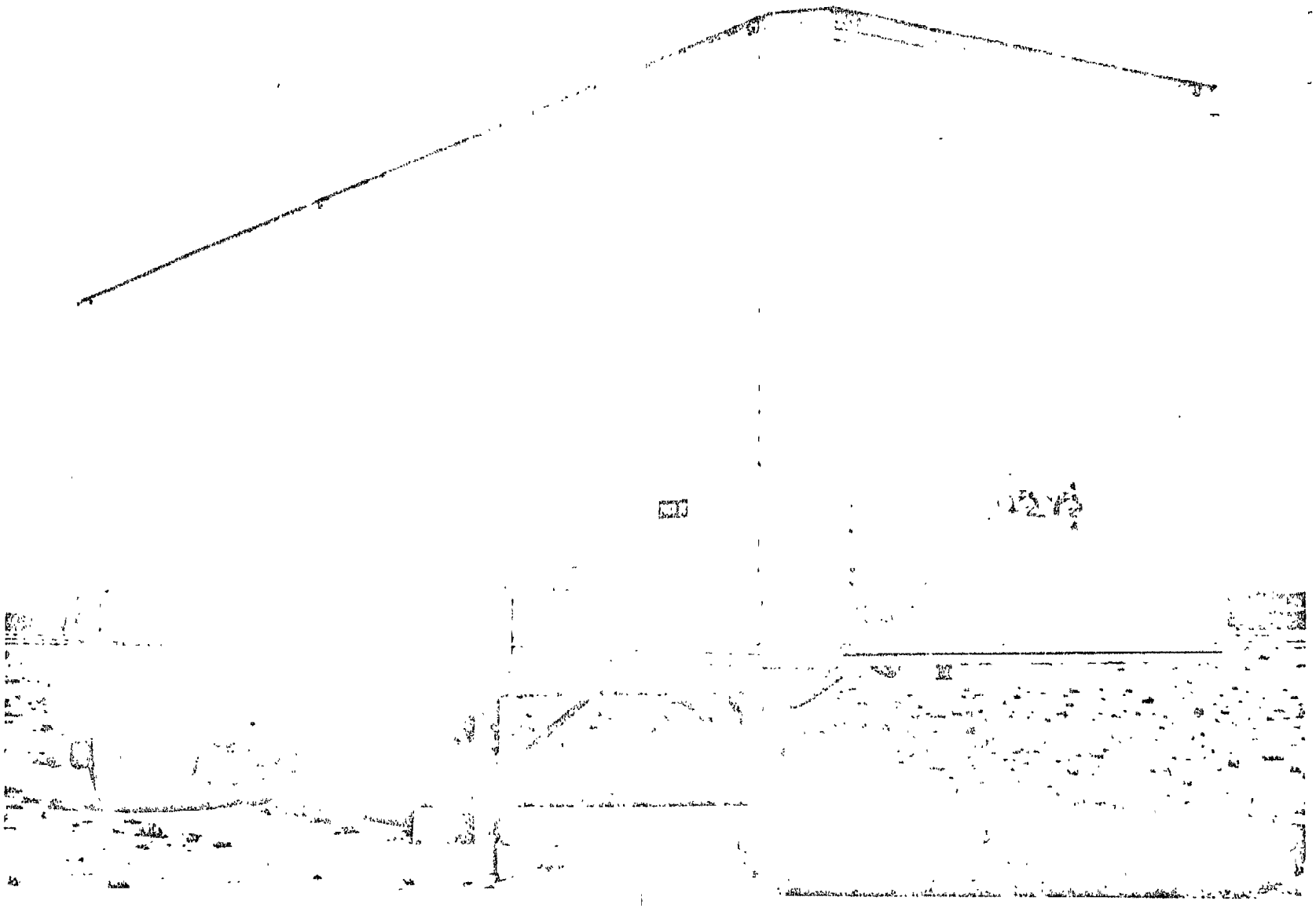
Another example pertained to the semitrailer cargo vans. The Air Force, since 1951, has bought about 1,607 of these. For fiscal year 1973, a requirement for 107 additional vans was established. The item manager manually deleted the buy because he believed the item was actually in an excess position. Of the total procured vans, 951, valued at about $3.7 million, could not be accounted for. While Air Force regulations require worldwide accountability for this item, the manager had not researched the line item to show the location or disposition or the missing vans. We identified 47 vans in one location that were being disposed of. Undoubtedly many others were disposed of over the years; however, the item manager does not have this data nor has he performed a reconciliation. A picture of the van is on page 15.

The Air Force contends that in most instances the assets unaccounted for have been issued to agencies outside the system or to contractors or have been installed on aircraft, etc. We could not verify the Air Force's contention. To the extent that assets have been issued in this manner, however, they should have been deleted from the system.

Unreported assets

AFEMS computes requirements for certain items required aboard aircraft for which asset reporting is not required. This equipment is frequently removed from aircraft for inspection or maintenance or because of aircraft mission change (cargo aircraft from carrying personnel to carrying cargo). When this equipment is off the aircraft, the base holding it reports the assets in the same manner as other nonexpendable equipment. Because of changes of assets into and out of the reporting system depending on their physical location, item managers are not provided with complete data to compute requirements for these items.

For example, about 87,000 locator beacons, an emergency signaling device, were bought in the 8 years before December 1971. As of December 1971, 57,000 beacons were reported as on hand or otherwise accounted for; 30,000 were not accounted for. Because requirements for this item were reported, AFEMS computed a need to buy 7,500 additional beacons. Had complete reporting of assets been made, the need to buy might have been reduced or eliminated.



SEMI-TRAILER CARGO VAN

Of the above cargo vans, 951 were not accounted for in the December 31, 1971, computation.

Requirements for equipment aboard aircraft should be computed in another system or all assets should be reported completely.

NEED TO VERIFY SOURCE DATA USED IN MANUAL CHANGES

The requirements computation process, described on page 5, is mechanized. While most data is reported to the item manager from major commands and other data comes from mechanized feeder systems, the item manager nevertheless must manually change and introduce corrective data when necessary. Item managers made incorrect manual changes to several data elements, including procured assets, asset losses, additive requirements, replacement factors, due-in assets, and base-reported data.

An example of improper manual data change concerns FSN 1730-715-4532. This item is a clamp peculiar to the T-38 and F-5 aircraft. It was last procured in 1968 at a unit cost of $276.58. There are 22 known assets in use in the Air Force. In the December 1971 computation, the item manager manually added six requirements to the base-reported data and identified the change as necessary for B-52 aircraft support. This addition resulted in a buy computation of six more items. When we pointed out that the clamp is peculiar to the T-38 and F-5 and cannot be used on the B-52, the addition was deleted and the procurement request canceled.

Another example is the MD-4 generator, costing about $4,500. Many Air Force organizations use it on different weapon systems. On the basis of computed needs for fiscal year 1973, the Headquarters-AFLC review team approved a buy for 144 units valued at $644,976 and a budgeted future buy for 221 units valued at $989,859. The item manager incorrectly deleted 91 reported assets from the computation and did not include 37 reparable assets on hand. These and other actions increased operating requirements and decreased available assets, as shown below.

Error	Cause	Quantity	
Assets:			
Understated assets	Item manager	91	
Reparables	deletions	37	128
Requirements:			
Replacement factor	Incorrect factor used	33	
Forecast requirements	Command error	14	
Duplicate requirements	Command error	6	
Other	Command and base error	8	61
Total			189

After we pointed out these errors to Air Force officials, they researched this item and canceled the outstanding purchase request for 191 generators costing $916,601. The request included 47 additional assets previously approved.

IMPROVEMENTS IN MECHANIZED SYSTEM NEEDED

Improvements in the accuracy of requirements computations are possible through changes in the mechanized system. These changes relate to the type of data retained, types of items for which computations are made, and data the system provided.

Need for central data file

A permanent central file of equipment requirements and assets for all Air Force organizations is needed to facilitate complete, reliable, and auditable requirements computations. The requirements and asset data reported monthly by bases and commands constitutes such a file. This file, however, is reconstructed each month from about 2.5 million base-reported records without reconciling to the prior month's file. Monthly reporting of this many records, we believe, contributes to fluctuations in requirements computation data and does not provide for a monthly comparison of the accuracy of reported data.

A permanent central file should be established and maintained with transaction change reporting. Once this file is established and transaction reporting initiated, change records can be independently verified.

Need for exception reporting

A well-designed mechanized system should be established to alert management to improbable situations by exception reporting. Reported requirements and asset data varied monthly when in fact no changes had been recorded. The system does not provide for alerting management to these variances. Consequently, discrepancies in reported data are not highlighted for timely research and resolution. For example, at one AMA, the number of reported assets fluctuated between three semiannual computations for 24 of 40 sampled items. The fluctuations, totaling about $1 million, were not reconciled with available data. The following schedule shows examples of fluctuations in reported assets.

Asset-Reporting Discrepancies Between Semiannual Computation Cycles

	Die set	Aileron clamp	Expander assembly	Test set indicator
Opening inventory as reported in December 1970	4	54	73	1
Additions	-	-	-	-
Deletions	-	-18	-4	-
Correct inventory as of June 1971	4	36	69	1
Reported inventory	3	25	73	5
Opening inventory as reported in June 1971	3	25	73	5
Additions	+27	-	+8	-
Deletions	-	-2	-	-
Correct inventory as of December 1971	31	34	77	1
Reported inventory	4	26	77	8

Improperly reported substitutes cause other improbale situations between requirements and assets. An organization can report any item as being in use as a substitute for an authorized item. When coded as an acceptable substitute by the reporting organization, the mechanized system accepts

the item as a valid substitute, even though it is not a recognized substitute. Examples of such items in the computations reviewed follow.

Reported authorization	Quantity	Reported substitute
M-16 rifle	3	Rotating chair
Scale beam indicator	5	Metal typewriter desk
$10,000 load bank	1	$100 bridge resistor
Life raft	1	2-pound scale
$2,000 heater duct	1	$30 portable electric heater

In such cases either the asset or the requirement is misreported. The base reporting the $100 item as a substitute for the $10,000 load bank had misreported its requirement and needed only the $100 item. Had the $100 item been condemned or not reported, AFEMS would have shown a base shortage for the $10,000 item.

Other situations not identified by exception reporting are (1) discrepancies between the quantity procured and the quantity reported, (2) requirements claimed in excess of table of allowance quantities, and (3) organizational reports not included in the requirements computation.

Exception reporting of these situations by AFEMS would highlight information to the item manager so that the cause could be researched and corrective action taken.

Questionable need for total asset visibility on low-dollar items

AFEMS computes requirements for nonexpendable items costing $10 or more each. In view of the numerous items in AFEMS and the voluminous data involved, a question arises as to the need to have worldwide asset visibility on all these items. The following table shows the number of items managed in various cost strata.

Unit price	Number of items	Low-value items
$9 or less	151	
$10 to $39	8,277	
$40 to $99	10,085	18,513
$100 to $499	22,689	
$500 to $999	9,134	
$1,000 to $1,499	4,544	
$1,500 to $1,999	3,099	
$2,000 to $4,999	9,024	
Over $5,000	19,492	
Total	86,495	

Computation of requirements for items costing under $100 each under another system would reduce the number of items managed by about 18,000. This would also substantially reduce the effort of monthly reporting on these items and the periodic printouts of data by AFEMS to be reviewed by item managers.

Computations for low-quantity items needed only on an exception basis

A breakdown of the inventory of 86,000 nonexpendable items shows that about 62,000 have assets of less than 6 items for which requirements computations are made. About 29,000 of these items have no assets. About 15,500 items have only one asset and 17,500 items have 2 to 5 assets.

For the most part, items with only one asset are special tools and equipment used at a depot maintenance facility on a particular weapon system. Many items with two to five assets fall in this category. If they are lost, damaged, or destroyed, the facility will requisition new ones.

It therefore does not seem reasonable to continue making computations on low quantity items when their requirements and assets remain fairly constant. Computations for these items should be made on an exception basis as requested by the item manager. Such computing would reduce the number of semiannual computations by about 33,000 and allow item managers more time to review the remaining computations.

CONCLUSIONS

Current, complete, and accurate data is frequently not available because of system weaknesses and source data problems. While strict compliance with current systems procedures and regulations would improve the reliability of data, aggressive management action is required to insure that problems are corrected.

RECOMMENDATIONS

Accordingly, we recommend that the Secretary of the Air Force:

1. Require item managers to establish proper inventory control by

   --maintaining complete and reliable procurement histories,

   --recording all asset losses,

   --accounting for in-transit assets, and

   --reconciling assets reported with historical records.

2. Consider worldwide inventory reporting for certain assets onboard aircraft.

3. Increase surveillance over manual changes by

   --automating computation of replacement factors and validating them periodically and

   --verifying and validating data elements introduced manually before entry into mechanized computation system.

4. Establish and maintain a permanent data bank file which should be updated with reason-coded transaction change reporting.

5. Establish a systematic challenge of any reported substitute not recognized by the system.

6. Redefine the items selected for individual management on the basis of need for control rather than on dollar values.

7. Eliminate printouts for requirement computation on low-quantity items. Exception reporting on these should suffice.

AGENCY ACTIONS

By letter dated October 30, 1973 (see app. I), the Air Force agreed that errors existed in AFEMS and that improvements were needed. Regarding our recommendations, the Air Force said:

--Actions will be taken to insure that procurement data is recorded in the procurement data system. Policies, procedures, and automated system capability required to improve control over assets are prescribed in the plan for the Air Force equipment management update.

--The entire procedures for management of onboard aircraft equipment are scheduled for review and revision, as appropriate, during calendar year 1974.

--AFLC is taking action to reprogram the automated requirements computing system. A program having documented quality checks over input/output data was abandoned in October 1969 because of manpower restraints. A less sophisticated program of internal AMA controls was established and reemphasized in June 1972. Simultaneously, efforts were taken to expand and improve automated edits. Action being taken to establish transaction reporting is designed to minimize the requirement for manually introduced data elements.

--The data base of the Equipment Data Bank will be modernized. A centralized data base will be established and maintained by updating through changes only.

--The Standard Base Supply System has been programed to reject the issue of a sensitive item asset (weapon) for a nonsensitive item requirement and vice versa. Development of a system of edits using cost variance

and/or Federal Supply Group disparity as criteria will be considered.

--The capability of identifying items for intensive management and reporting on the basis of characteristic management needs of the item rather than on the unit price is being explored.

--AFEMS is being revised to automatically suppress printing of computation products for low-volume items with six or less authorized and/or in-use assets unless a valid exception condition exists.

CHAPTER 4

COMMAND- AND BASE-LEVEL REPORTING PROBLEMS

Valid equipment authorizations and accurate reporting of available equipment are essential to computing reliable requirements. The base-level Equipment Management Office (EMO) is responsible for the validity of equipment authorizations and the reporting of available equipment. The command-level EMO is responsible for the base-level EMOs under its jurisdiction and periodically reviews their activities. Commands also develop forecast requirements for their organizations.

Because the Air Force Audit Agency has extensively reviewed installation-level equipment management, we limited our installation-level review. Its audit reports (see ch.6) identify weaknesses in reporting available equipment and authorizations similar to our findings discussed below.

Our tests at selected commands and bases showed:

--Forecast requirements were invalid.

--Equipment authorizations exceeded allowables and/or needs.

--Inventory reports did not include available equipment.

--Authorizations and assets were misidentified and/or misreported.

FORECAST REQUIREMENTS

About $33.8 million worth of invalid equipment requirements were forecast for fiscal year 1973 because some commands did not forecast accurately and/or did not remove invalid forecasts from the system promptly. In some instances, forecasts:

--Were developed for the wrong aircraft.

--Were developed for tentative proposals not firm for logistics action.

--Were not developed when required.

--Were not removed from AFEMS when programed changes were deleted.

--Were not updated to current table of allowance documents.

--Were applied for too many squadrons.

Equipment forecasts for centrally procured items are entered into requirements computations and can cause invalid requirements if not corrected.

For example the MRC-108 radio, costing about $42,000, is used for ground support operations of various aircraft. Headquarters, Air National Guard (ANG), erroneously forecast 88 requirements for this radio at two installations not requiring it. The Air Force Headquarters-AFLC review team approved a buy of 70 radios valued at $2.8 million. We alerted AFLC to this erroneously reported requirement, and AFLC has advised us that procurement authority for this radio will not be released until (1) stable ANG requirements can be established and (2) the asset accountability for 32 radios can be established.

The Air Force informed us that there was a firm requirement for 88 radios and only the identity of the requiring units was in error. The 32 unaccounted for radios were determined to be Southeast Asia losses. They said further that, as a result of our review, the requirements for this radio were restudied. The 1973 approved buy for 70 radios was canceled and the buy requirement for 1974 has been reduced to 17.

EQUIPMENT AUTHORIZATIONS OVERSTATED

Equipment authorizations exceeded needs at several bases where we tested EMO records. In some instances EMOs did not have sufficient information to determine the quantity of items allowed using organizations. In these instances, approved authorizations were usually based on information furnished by the using organization.

At Hickam Air Force Base, Hawaii, for example, authorizations were not limited to minimum needs. One custodian had about $276,500 worth of excess equipment. In other instances, requirements were questionable. However, these excesses had not been reported to the item manager. Headquarters, Pacific Air Force, officials advised us that authorizations and equipment would be realined and excesses reported for redistribution. These excesses have now been redistributed.

At Robins Air Force Base, Georgia, one organization had 32 MB-17 generators (FSN 6115-118-1243; unit cost, $9,000) authorized and on hand. However, only three were being used. The organization determined that at least 20 were excess. After reported as excess, these generators can fill other requirements. The managing AMA had computed a buy requirement for 195 generators and procurement had been funded for 38 costing $342,000.

Command-level teams must make base equipment utilization surveys. The teams generally visit each base once a year and survey selected custodian accounts. We found unneeded or unused equipment at five of six bases visited. Consequently, commands should use these surveys more effectively to insure that bases properly report assets needed and promptly report those assets that can be redistributed.

PHYSICAL INVENTORIES

Except for vehicles and weapons which must be inventoried annually, custodian equipment accounts are inventoried only when requested by an incoming custodian or when the organizational commander cannot determine the accuracy of equipment records without EMO assistance. Although some additional inventory requirements have been established, the accuracy of equipment accounts is not systematically verified by physical inventories. Interviews with equipment custodians revealed that some had not taken complete inventories and others had accepted equipment accounts from the prior custodians without physical inventories. At one base, custodians varied the frequency of inventories from monthly to more than 2-1/2 years. In another instance, a custodian did not have proper security clearance to enter areas where some of his equipment was located; thus he could not perform the inventory.

Our tests of selected items at each base revealed inventory discrepancies. Ineffective or inadequate physical inventories, in our opinion, are a major cause for recurring inaccuracies in base-level equipment reports.

MISIDENTIFIED REQUIREMENTS AND ASSETS

Assets reported by the bases misidentified the FSN for some requirements and in-use assets. One base reported data on 6 of 18 selected items, or 33 percent, incorrectly. Reliable requirements cannot be computed from incorrect data. The following schedule presents assets reported by incorrect FSN.

Reported FSN	Description	In-use FSN	Description
6125-724-3033	MD-3 generator	6125-827-7154	MD-4 generator
6125-553-0393	MD-3 generator	6125-500-1184	MD-4 generator
6125-620-7804	MD-2 generator	6125-691-1487	Motor generator
6720-298-9290	Camera	6720-856-5539	Camera
4920-999-2915	Gasoline hydraulic test stand	4920-925-7902	Electric hydraulic test stand

In the first two examples, the reported FSNs are MD-3 generators costing about $3,399 while the assets actually on hand were larger MD-4 generators costing about $4,613. These items are not in the same interchangeable groupings and separate computations are made to determine the worldwide requirements positions.

In the fifth example, the hydraulic test stand reported is gasoline powered while the in-use item is electrically powered. Only the electrical stand can be used inside the hangar and should be so reported, since requirements for each type of item are separately reported.

Each example demonstrates when bases reported an asset as on hand when the actual in-use item was a different asset with some other FSN. As a result, the item managers' computation of worldwide assets and requirements could be incorrectly stated for both FSNs.

CONCLUSIONS

Forecast and reported data from the base and command levels provides the foundation for operation of AFEMS. The reliability of this data must be improved if AFEMS is to operate successfully.

RECOMMENDATIONS

We therefore recommend that the Secretary:

1. Require base commanders to systematically review and correct basic equipment records.

2. Require base commanders to devote proper attention to physical inventories and make greater use of utilization studies.

3. Require base and command EMOs to take greater care in reporting assets to inventory managers.

4. Require all major commands to carefully review their projected requirements to preclude major misstatements of needs.

AGENCY ACTIONS

The Air Force concurred with these recommendations and said Headquarters would work with AFLC and major commands to meet these objectives. The functions of inventories/utilization surveys were eliminated on the basis of cost and manpower considerations. Reinstatement of either function will depend upon cost versus return on the Air Force investment.

High-dollar buy items

Of 24 computed requirements approved for expenditures in excess of $100,000 each, 8 contained errors affecting approved equipment needs already approved by the team. An in-depth review of the computations and supporting data would have revealed the errors and provided a more realistic statement of equipment needs--a primary objective of the team. Examples follow.

Milling machine--FSN 3417-903-3770;
unit price, $32,497

On the basis of the December 1971 computed requirement, AFLC approved a buy for 6 machines and a future buy for 10. Our review revealed one unsupported requirement and an overstated replacement factor. After these errors were called to management's attention, the requirement was recomputed, which resulted in an excess position of 12 assets. The initial buy requirement of 6 machines and future requirement of 10 have been canceled.

Test set, radio-FSN 6625-934-0373CX;
unit price, $65,431

On the basis of the December 1971 computed requirement, AFLC approved a buy for three test sets. Two sets in supply were not shown in the computation nor otherwise considered. A purchase request amendment was processed which reduced the estimated procurement cost by about $117,335 (See p. 13 for more details.)

The generator computation (see p. 16) is another illustration of improper review, since incorrect manual changes were made to the quantities of in-use assets, forecast requirements were invalid, erroneous replacement requirements were used, and overstated requirements were added and reported from the base level. Furthermore, reparable assets were understated and some requirements were wrong because of a programing error. (This error has been corrected.) The review team detected none of these errors.

The radio computation dated December 31, 1971 (see p. 25) contained an erroneous command forecast of 88 assets causing a $3.7 million invalid requirement. The review team did not detect the erroneous forecast, we called it to AFLC's attention, and corrective action was taken.

Low-dollar items

Unlike high-dollar items which AMA and AFLC headquarters teams review, only the AMA reviews low-dollar items. Our limited review of these items at one AMA showed errors similar to those reported in prior sections. The reviews lack depth, and the computations are affected by erroneous asset reporting, erroneous requirement forecasts, and base-level inventory inaccuracies. These requirements should be reviewed more carefully and obvious discrepancies in assets reported and requirements forecast should be resolved to insure proper computations.

CONCLUSIONS

Though AMA and Air Force Headquarters-AFLC review teams are already expending substantial efforts, more in-depth reviews are warranted and could be accomplished. The above workload and training problems limited the effectiveness of management reviews at all levels.

RECOMMENDATIONS

To improve the effectiveness of inventory managers and management reviews, we recommend that the Secretary:

1. Require AMA and Headquarters review teams to pay particular attention to manual changes by inventory managers. Additionally, proper procurement history, dispositions, and current asset inventory positions should be presented with each item the teams review.

2. Require teams to identify the most troublesome areas which should be used as short-subject specialized training classes.

3. Reemphasize standardized and specialized training for requirements personnel at AMAs.

AGENCY ACTIONS

The Air Force informed us that the Materiel Management Review Team operating instructions will be revised. AFLC has emphasized training of AMA personnel. All inventory managers have been trained in the equipment requirements computation system. The program was recently updated and inventory managers are being given refresher training.

CHAPTER 6

INTERNAL AUDIT

The Air Force Audit Agency provided us 24 recent reports which were representative of 130 other installation-level reports released in the past 2 years. Twenty reports identified weaknesses pertaining to (1) reporting available equipment or (2) reporting equipment authorizations. For example:

--Equipment loaned to contractors was not on inventory managers' records.

--Discrepancies between equipment in use and on EMO accountable records reflected both overages and shortages.

--Some equipment on hand was in excess of authorized quantities.

--Procurement histories were incomplete.

--Some requirements were filled with unsuitable and/or unsatisfactory substitutes.

Though the audit agency's reviews were not directed toward an overall evaluation of AFEMS, they did disclose deficiencies in equipment management which directly affect AFEMS. The installation level generally took corrective action for the deficiencies.

Our work at base level, limited to a few bases, revealed a need for improvements in accuracy of inventories and reporting of equipment needs and availability. The audit agency reviews at a number of bases confirmed our finding that these problems are widespread.

CHAPTER 7

OVERALL CONCLUSIONS, RECOMMENDATIONS AND AGENCY ACTIONS

CONCLUSIONS

Current, complete and accurate information is needed to insure that reliable requirements determinations are made. Although corrective actions have been taken or initiated, the need exists for continued improvements, especially in the following areas:

--Inventory control.
--In-use assets and requirements reports.
--Changes by requirements personnel.
--Equipment requirement forecast.

Most of these problems were discussed in two of our previous reports. Their continued existence and effect on requirements determinations demonstrate the need for more effective managment attention.

In 1969, to correct weaknesses and provide better data, the Air Force redesigned certain elements of the equipment management system. Though the redesign increased the use of computer systems, it did not correct the problems of inventory control, invalid source data from the bases and commands, and unsupported changes by AMA requirements personnel. As a result, logistics managers were not provided with reliable data for making decisions to buy, budget, hold or release much of their equipment.

The Air Force is again planning a new design and application of an advanced computerized system for equipment management--the Advanced Logistics System (ALS). AFEMS is scheduled to be incorporated before 1978 into ALS. Although the Air Force expects many benefits from ALS, benefits will be minimized if the problems are not corrected.

We have now reviewed two major requirements systems to be incorporated into ALS, AFEMS, and the Requirements System for Reparable Parts (B-147874, Sept. 13, 1972). Both reviews identified problems with unreliable data used in computing requirements. An accurate data base is needed before the expected benefits of ALS can be achieved.

RECOMMENDATIONS

Accordingly, we recommend that the Secretary of the Air Force establish a temporary review and reporting system at the highest level to insure that longstanding problems in source data are corrected before this data is introduced into ALS.

AGENCY ACTIONS

The findings in this report were discussed with officials at all levels during the review. We held discussions with AFLC officials responsible for AFEMS and the validity of computed requirements. We gave them examples of such problems as errors in computer programs, the failure of feeder systems to properly transfer needed data, and the need for better management surveillance over manually added data. Headquarters Air Force officials responsible for base- and command-level reporting functions were briefed. In most instances corrective actions for the problems identified were readily implemented.

In January 1973 an Air Force-wide conference was held to discuss many problems we identified. When problems were not corrected, Air Force groups were formed to study each problem and make recommendations. In March 1973 a final close-out conference was held with AFLC and Headquarters officials to discuss our review and recommendations. At that time many of the problems had either already been corrected or were under study by Air Force work groups.

In response to our recommendation that a temporary internal review and reporting system be established, the Air Force informed us that a work group has been established to modernize AFEMS. The system being developed will be compatible for inclusion in ALS. The new system will include features for (1) daily reason-coded transaction reporting, (2) interface of depot systems, and (3) inclusion of base and depot statistics relative to assets in the data bank during phase I. Phase II will address additional areas. The target date for implementing phase I is February 1975.

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The Air Force's corrective actions, when fully implemented, should substantially improve the conditions noted in this report. At a later time we will examine the effectiveness of these actions on AFEMS.

CHAPTER 8

SCOPE OF REVIEW

To ascertain whether the data was current, complete, and accurate, we reviewed 200 requirements computations randomly selected from a universe of 56,637 computations printed early in calendar year 1972 and containing data as of December 31, 1971. This was the initial--beginning of year--computation cycle designated as "FY 73/74-1." It provided the basis for AMA, AFLC, and Air Force review and approval of requirements for funds to be spent beginning in fiscal year 1973. Also a midyear cycle, usually dated June 30, provides data for adjustments, if necessary, to the beginning-of-year cycle.

We conducted our review between January and October 1972 at Headquarters, AFLC, the five AMAs, and headquarters of selected commands and Air Force bases. It included an examination of regulations manuals, records, and supporting source documentation for data in, or that should have been in, requirements computations examined. Also, we talked with operating personnel and responsible officials.

The installations reviewed follow.

COMMANDS

Headquarters, Air Force, Washington, D.C.
Air Force Logistics Command, Wright-Patterson Air Force Base, Ohio
- Sacramento Air Materiel Area, McClellan Air Force Base, California
- Oklahoma City Air Materiel Area, Tinker Air Force Base, Oklahoma
- Ogden Air Materiel Area, Hill Air Force Base, Utah
- Warner Robins Air Materiel Area, Robins Air Force Base, Georgia
- San Antonio Air Materiel Area, Kelly Air Force Base, Texas

Tactical Air Command, Langley Air Force Base, Virginia
Strategic Air Command, Offutt Air Force Base, Nebraska
Air Training Command, Randolph Air Force Base, Texas
Military Airlift Command, Scott Air Force Base, Illinois
Pacific Air Command, Hickam Air Force Base, Hawaii
Air National Guard Bureau, Pentagon, Washington, D.C.
Headquarters, Air Force Reserve, Robins Air Force Base, Georgia

BASES

Hickam Air Force Base, Hawaii
Wright-Patterson Air Force Base, Ohio
Malmstrom Air Force Base, Montana
Bergstrom Air Force Base, Texas
Robins Air Force Base, Georgia
Mather Air Force Base, California

DEPARTMENT OF THE AIR FORCE
WASHINGTON 20330

OFFICE OF THE SECRETARY

30 OCT 1973

Dear Mr. Grosshans:

The Secretary of Defense has asked me to reply to your report of August 22, 1973, "Improvements Needed in Managing Nonexpendable End Item Equipment in the United States Air Force," Code 52013, (OSD Case 3692).

It is gratifying to note that your report, although critical of the operation of the Air Force Equipment Management System (AFEMS), does not challenge the basic philosophy of the system. It is especially noteworthy that at the time of the General Accounting Office close-out briefings that many of the problems noted had either already been corrected or were under study by Air Force work groups.

It is acknowledged errors do exist and refinements to, as well as compliance with, the system are necessary. Although this system when effectively applied is capable of providing reliable data for asset accounting and requirements computations, action has been instituted by the Air Force to modernize the AFEMS. This modernization process will be accomplished in two phases and will make the AFEMS a fully automated, closed loop management system. Phase I will insure greater visibility and control by featuring asset tracking from procurement to disposal through the use of daily reason coded transaction reporting from the Air Force Logistics Command Air Materiel Areas and Air Force bases to a centralized data bank. Execution of this phase of the plan will also address the records of shipment and procurement, procurement histories, inventory control, changes by requirements personnel, and exception management. Phase II will address all the other features approved for modernization of AFEMS in the Advanced Logistics System Master Plan and those being developed by other study groups. These include, but are not limited to, complete mechanical interface of all AFEMS related systems from a standardized data base, further refinement of the Table of Allowance (TA) data push system, and redesign of data system DO 39 (Equipment Requirements Computation) for daily interface with all other AFEMS data systems.

The Air Force has devoted in the past, and will continue to devote in the future, extensive efforts to improve operations of this system. As noted above, actions are in process for modernizing the system to

improve the reliability of data entering and retained therein. In this regard, constructive suggestions and recommendations contained in this report will be most helpful.

Comments are attached on each of the specific recommendations and major items of concern in the report.

I appreciate the opportunity to comment on the draft report.

Sincerely,

L. M. Sullivan

LAURENS N. SULLIVAN
Assistant Deputy for
Supply and Maintenance

1 Attachment
Air Force Comments on
Recommendations and
Items of Concern

Mr. Werner Grosshans
Associate Director, Materiel Management
Logistics and Communication Division
U.S. General Accounting Office
441 G Street, N.W. Room 5729
Washington, D.C. 20548

GAO note: The attachment is not reproduced here because of its length. However, we considered Air Force comments in preparing this report.

STATISTICAL PROJECTION OF ERROR CONDITIONS IN REQUIREMENTS

COMPUTATION CYCLE, FY 1973/1974-1

(Universe, 56,636; confidence level, 90 percent)

Data field	Percent misstated	Sampling error (+ or -)	Estimated number of computations misstated	Sampling error (+ or -)	Estimated dollar misstated	Sampling error (+ or -)
					(000 omitted)	
Requirements:						
Air Force initial requirements	11.2	5.3%	6,336	3,017%		
Programed communications initial requirements	(a)	(a)	(a)	(a)		
ANG initial requirements	5.3	3.8	3,020	2,180		
War readiness material requirements	(a)	(a)	(a)	(a)		
Air Force additive requirements	16.5	5.9	9,370	3,362		
MAP	(a)	(a)	(a)	(a)		
Replacement requirement	11.7	4.8	6,633	2,719		
Worldwide requirements	31.2	7.5	17,679	4,252	$454,384	$218,161
Assets:						
In-use assets	13.7	4.9	7,770	2,748		
In-place assets	(a)	(a)	(a)	(a)		
Warehouse serviceable assets	13.5	6.6	7,643	3,747		
Warehouse unserviceable assets	8.8	5.1	4,985	2,895		
Funded/on-order assets	8.0	5.1	4,526	2,870		
Worldwide assets	36.9	8.6	20,898	4,873	382,790	64,715
Net requirements	45.8	8.8	25,942	4,994		

[a]Number of sample computations with input to this data field was not sufficient to make a statistical projection.

APPENDIX III

PRINCIPAL OFFICIALS RESPONSIBLE FOR ACTIVITIES DISCUSSED IN THIS REPORT

	Tenure of office	
	From	To
DEPARTMENT OF DEFENSE		
SECRETARY OF DEFENSE:		
James R. Schlesinger	June 1973	Present
William P. Clements, Jr. (acting)	Apr. 1973	June 1973
Elliot L. Richardson	Jan. 1973	Apr. 1973
Melvin R. Laird	Jan. 1969	Jan. 1973
DEPUTY SECRETARY OF DEFENSE:		
William P. Clements, Jr.	Feb. 1973	Present
Kenneth Rush	Feb. 1972	Jan. 1973
David Packard	Jan. 1969	Feb. 1972
ASSISTANT SECRETARY OF DEFENSE (INSTALLATIONS AND LOGISTICS):		
Arthur I. Mendolia	Apr. 1973	Present
Hugh McCullough (acting)	Jan. 1973	Apr. 1973
Barry J. Shillito	Feb. 1969	Jan. 1973
DEPARTMENT OF THE AIR FORCE		
SECRETARY OF THE AIR FORCE:		
John L. McLucas	July 1973	Present
Dr. Robert C. Seamans, Jr.	Feb. 1969	May 1973
UNDER SECRETARY OF THE AIR FORCE:		
Vacant	June 1973	Present
John L. McLucas	Mar. 1969	June 1973
ASSISTANT SECRETARY OF THE AIR FORCE (INSTALLATIONS AND LOGISTICS):		
Richard J. Keegan (acting)	Aug. 1973	Present
Lewis E. Turner (acting)	Oct. 1972	Aug. 1973
Philip N. Whittaker	May 1969	Sept. 1972

	Tenure of office	
	From	To
DEPARTMENT OF THE AIR FORCE (continued)		
COMMANDER, AIR FORCE LOGISTICS COMMAND:		
Gen. Jack J. Catton	Sept. 1972	Present
Gen. Jack G. Merrell	Mar. 1968	Sept. 1972