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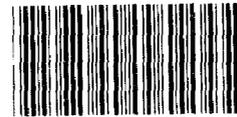
GAO

Report to Congressional Requesters

May 1988

FEDERAL CATALOG SYSTEM

Continuing Item Identification Problems



135942



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United States
General Accounting Office
Washington, D.C. 20548

**National Security and
International Affairs Division**

B-230467

May 5, 1988

The Honorable Pete Wilson
United States Senate

The Honorable John Glenn,
Chairman, Committee
on Governmental Affairs
United States Senate

As requested in Senator Wilson's letter of April 15, 1986, we reviewed the Department of Defense's Federal Catalog System. This is one in a series of reports related to the effectiveness of defense logistics.

As arranged with your Offices, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from its issue date. At that time, we will send copies to interested committees and other Members of Congress; the Secretary of Defense; the Director, Defense Logistics Agency; and the Director, Office of Management and Budget. Copies will also be made available to other parties upon request.

A handwritten signature in black ink that reads "Frank C. Conahan".

Frank C. Conahan
Assistant Comptroller General

Executive Summary

Purpose

In March 1986 GAO briefed the Chairman of the Task Force on Department of Defense (DOD) Inventory Management, Senate Committee on Armed Services, on problems concerning DOD supply management practices. Inadequate identification of many of the 6.1 million supply items in the Federal Catalog System, a long-standing and costly problem, was one of the problems discussed in the GAO briefing.

Shortly thereafter, the Chairmen of the Task Force and the Senate Committee on Governmental Affairs asked GAO to conduct a detailed review of the Federal Catalog System. In response to these requests, GAO reviewed the nature, extent, causes, and effects of item identification weaknesses in federal cataloging.

Background

Historically, the military services operated several independent supply cataloging systems, each with its own supply language and methods of naming, describing, classifying, and numbering items. The Defense Cataloging and Standardization Act of 1952 established a unified catalog, which evolved into the Federal Catalog System to centralize catalog information at a single site, the Defense Logistics Services Center in Battle Creek, Michigan.

With its common supply language and systematic method for comparing items in the supply inventories, the new catalog system was expected to better serve logistics functions by improving item identification and preventing item duplication, two long-standing catalog problems. In other words, the Federal Catalog System was to improve accountability and safeguard against buying items already in the supply inventories.

The military services and the Defense Logistics Agency are the catalog's major participants, collectively managing 84 percent of all active supply items. The remaining 16 percent is managed by civilian agencies and foreign countries. Participants ultimately determine the efficacy of the Federal Catalog System because they are the source of item identification information stored in the centralized catalog.

Results in Brief

The Federal Catalog System continues to fall short of its legislated mandate to adequately identify supply items so they can be distinguished as unique and not duplicative of items already in the supply cataloging system. Many cataloged items still are inappropriately named, inadequately described, incorrectly classified, and improperly numbered. Inadequate identification not only results in poor cataloging but also hinders other

logistics functions and may cause unnecessary purchases. It can also result in millions of dollars being needlessly spent to enter and maintain items previously cataloged.

Principal Findings

Inadequate Item Identification

To ensure that new items entering the supply system are adequately identified, federal cataloging policy requires that supply items be (1) assigned only one name (preferably an item name approved by the Defense Logistics Services Center), (2) described completely and accurately, (3) registered in the appropriate Federal Supply Class, and (4) cataloged under a single stock number. However, Defense Logistics Services Center data and GAO's analysis showed:

- 30 percent of all cataloged items did not have approved names;
- 29 percent of all cataloged items were nondescribed because they lacked characteristic and performance data (many of these were the same items that had not been assigned approved names); and
- thousands of items were misclassified or assigned duplicate numbers in the federal catalog.

Either a lack of contractor technical data or the catalogers' failure to use it is a major contributing factor to the present condition of item identification in federal cataloging. These data provide performance and characteristic information vital to properly naming, describing, and classifying supply items.

Cataloging is one of many logistics functions and receives a lower priority than deploying a major weapon system. To expedite getting stock numbers for items so weapon systems will have logistics support, cataloging activities often do not provide complete information initially, and they neglect to upgrade the identification status of items once they have been cataloged.

Impact of Inadequate Item Identification

Poor cataloging caused by inadequate item identification can have far-reaching effects on all logistics functions. For example, not identifying all supply sources or incorrectly registering this information in the catalog can inhibit competitive procurements.

Cataloging duplicate supply items, mainly the result of inadequate item identification, continues to be a matter of particular concern. While recognized by the cataloging community as a potentially serious and costly problem, the extent and cost implications of item duplication are largely unknown. In addition to the obvious costs of entering and maintaining duplicate items in the catalog itself, other unnecessary costs are incurred when duplicate supply items are procured, stocked, and issued.

To illustrate the cost of item duplication, GAO estimated unnecessary costs to enter and maintain about 3,820 duplicate items, which were identified in one small Defense Logistics Services Center test. Applying cost estimates developed by the Center, GAO calculated these costs to be \$14.1 million, excluding the purchase price of duplicate items.

Recommendations

GAO recommends that the Secretary of Defense direct the Secretaries of the Army, Navy, and Air Force; and the Director, Defense Logistics Agency, to

- institute more extensive and aggressive measures to improve item identification and
- determine which items in the catalog are duplicates and reduce their numbers.

Agency Comments and GAO's Evaluation

DOD generally concurred with GAO's findings and recommendations.

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Abbreviations

DIDS	Defense Integrated Data System
DLA	Defense Logistics Agency
DLSC	Defense Logistics Services Center
DOD	Department of Defense
GAO	General Accounting Office
NSN	National stock number

Introduction

Supply cataloging is necessary for effective procurement and inventory management. By identifying and differentiating items of supply, cataloging enables the government to know what it has in stock so that it does not buy, under a different name or number, items already in the supply network.

Following World War II, the military services operated numerous autonomous supply cataloging systems, each with its own language and catalog format, dissimilar stock numbering methods, and different specification guides for the same items. Each procured, stored, issued, and cataloged its own supplies. This generated thousands of stock numbers, often for the same item, resulting in item duplication. Duplication led to unnecessary and costly replenishments of items already in the supply system. Different services all too often procured identical items with different prices and names.

These problems evoked attention from the Congress, which viewed improvements in cataloging as a necessary first step in alleviating confusion and waste in military logistics. Post-World War II legislators concluded that a uniform, centralized catalog with a common and universally accepted supply language was needed. As a result, in 1952, the Congress enacted Public Law 82-436, the Defense Cataloging and Standardization Act. Today, the basic tenets of that legislation remain the statutory charter for Department of Defense (DOD) cataloging.

The Federal Catalog System

The act created a unified DOD catalog, which evolved into the Federal Catalog System, the only federal government system to identify items. It is the principal item logistics data source for actions related to procuring, storing, issuing, and disposing of items recurrently used. Centralization of catalog information and better identification of supply items were the two fundamental precepts that were to distinguish the Federal Catalog System from its predecessors.

Within DOD, the Assistant Secretary of Defense for Production and Logistics provides overall direction for the Federal Catalog System. The Defense Logistics Agency (DLA) administers the system and sets cataloging policies and procedures. The Defense Logistics Services Center (DLSC) in Battle Creek, Michigan, a DLA field activity, operates and maintains the system. DLSC maintains the central repository of item identification and related logistics information for cataloged items in a computer data bank known as the Defense Integrated Data System (DIDS).

The Federal Catalog System depends on sufficient information to positively identify and distinguish one supply item from another. The amount and type of information DLSC receives from its customers, who gather and transmit catalog data for items they manage, ultimately determines the efficacy of the system. For DOD-managed items, this responsibility largely rests with catalogers at the four military services and the six DLA supply centers, each of which manages specific supply groups, such as ammunition or aircraft components.

Before a new supply item can enter the federal catalog, it must be assigned a national stock number (NSN), a nonrepetitive number that distinguishes each item in the supply cataloging system. Only DLSC can assign NSNs. According to a DLSC official, DLSC cannot refuse to assign an NSN solely because the item to be cataloged is not adequately described. As long as the cataloging activity follows operating procedures for processing logistical information and the item does not seem to duplicate a previously cataloged item, DLSC must assign an NSN to the item.

Customers of the Federal Catalog System include the military services, the DLA supply centers, other federal agencies, a number of foreign governments, and the industrial community. The military services and supply centers manage 84 percent of the active items registered in the federal catalog, with the remaining 16 percent being managed by about 75 civil agencies, 43 foreign governments, and 3 North Atlantic Treaty Organization agencies. At the end of calendar year 1986, the system listed 6.1 million NSNs in the centralized DLSC database. About 5.6 million NSNs had item managers and, consequently, were designated as active items. The majority of active items, 4.7 million NSNs, list DOD activities as item managers.

Importance of a Good Catalog System

The Federal Catalog System establishes a uniform, systematic procedure for identifying supply items. When catalogers follow this procedure and provide all necessary information, DIDS can identify an item as unique or detect the item as a duplicate of something already cataloged.

Besides being the essence of good cataloging, proper item identification is important to other logistics functions. For example, the provisioning process, used by military services to buy spare parts for new weapon systems, compares item identification data for proposed new parts against similar data recorded in the DIDS for items already cataloged. This item entry check helps to prevent duplicate supply items from being cataloged and entering the supply system. By controlling the entry

of duplicate items in the supply system, inventory managers can avoid those logistics functions associated with managing an item in the supply system, i.e., determining requirements, making procurements, receiving and storing inventory, distributing material, and eventually making disposal decisions.

Identification: The Key to Good Cataloging

Selecting the right name for each item is the critical first step in item identification. A standard naming system of approved item names aids the identification process. Catalogers at the item management activities are supposed to use the Federal Item Name Directory in selecting an appropriate name for an item they want cataloged. The directory includes all approved item names along with their definitions and classification data. DLSC maintains, updates, and publishes the directory, and adds names to the list in an attempt to keep pace with technology and the introduction of new supply items.

Once an item is named, catalogers begin the important task of describing it. The simplest, but least desirable, method for describing items is the reference or nondescriptive method, which identifies items by manufacturer's name, part number, unit price, unit of issue, and supply source.

The preferred method of identification is the descriptive method, which defines an item not only by reference but also by performance, functional attributes, and physical characteristics. A screw, for example, is identified by type, length, diameter, thread size, application, and other physical and performance characteristics. Catalogers provide this more detailed information, including where the item can be bought, by extracting technical data from engineering drawings, test reports, manufacturers' catalogs, and published industry and government specifications.

To further aid catalogers in describing items fully, Federal Item Identification Guides have been developed for many commonly used supply items. For approved name items, these guides record various characteristic data that catalogers must provide if they are to meet the criteria of a fully described item. Partially or nondescribed items that do not meet all the guide data requirements, while acceptable for some logistics functions, are discouraged for cataloging purposes because they provide fewer data elements that could be used to detect item duplication.

Classification gives an item further definition and distinction and facilitates comparisons among like items. Items are classified by categorizing them into two commodity levels: groups and classes.

Catalogers first classify an item by 1 of 78 Federal Supply Groups—broad commodity designations, such as ammunition, valves, and electronic equipment components. The groups are subdivided into 618 Federal Supply Classes—more narrow commodity categories designed to aggregate items with similar physical and performance characteristics. For example, the electrical and electronic equipment component group is subdivided into 24 classes, such as resistors and capacitors. To lessen the likelihood of duplication, each item should be classified in only one Federal Supply Class. DLSC distributes handbooks to help catalogers identify the right class for each item.

Numbering each supply item is the final item identification step. A 13-digit NSN is the standard numeric identifier for every cataloged item. The NSN structure is illustrated in figure 1.1.

Historical Item Identification Problems

Numerous reports on federal cataloging have highlighted inadequate item identification as a recurrent problem in the Federal Catalog System.

In 1970 the House Committee on Government Operations suggested that the size of the federal catalog might be halved if items were better described so that similar items could be consolidated. The Committee reported that too many items were identifiable only by manufacturer's name and part number.¹

In a 1973 report, we estimated that the federal catalog of 6.5 million items contained about 200,000 unnecessary NSNs and another 100,000 which were probably duplicates.² However, insufficient data for the latter did not allow for a positive identification of duplication. We cited failure by catalog participants to provide sufficient descriptive information to the DLSC data bank as the main reason duplicate NSNs entered the catalog undetected.

¹Military Supply Systems: Cataloging, Standardization, and Provisioning of Spare Parts (House Committee on Government Operations, Dec. 10, 1970).

²The Federal Catalog Program: Progress and Problems in Attaining a Uniform Identification System for Supplies (B-146778, June 20, 1973).

percent of existing items in the DOD supply inventory had complete technical data.

In a 1985 study, DLA concluded that catalog data requirements were poorly enforced, and the practice was to provide just enough information to get an NSN.⁵ The study said that DIDS' integrity was being impaired because supply sources and other pertinent data were not being cataloged, even though some of this information was available at the cataloging activities.

Objectives, Scope, and Methodology

The objectives of our review were to assess the nature, extent, causes, and effects of item identification deficiencies in the Federal Catalog System. We reviewed the history of federal cataloging, including the legislation establishing the catalog system and related policies, directives, and procedures implementing the system. We also reviewed prior reports and studies to obtain a historical perspective on long-standing item identification problems.

Using DLSC-compiled catalog statistical data, mainly for the year ending December 31, 1986, we identified various systemic information deficiency problems that hinder effective cataloging and supply operations. Due to the size and complexity of the DIDS database, we did not assess the reliability of the data it reports. However, we verified the data used in our report by tracing it back to source documents and comparing it with similar data from other sources. We reconciled any differences with DLSC officials to ensure the data we used were correct.

To obtain information on the causes and effects of item identification deficiencies, we reviewed pertinent DLSC records and used a structured interview during our site visits to 10 military services and DLA cataloging activities. We discussed cataloging operations and problems with item managers, engineers, equipment specialists, catalogers, procurement personnel, and DOD and DLA catalog policy officials.

To assess the issue of item duplication, we analyzed results of an ad hoc DLSC-initiated study that, as of April 1987, had surfaced approximately 3,820 duplicate stock numbers in the federal catalog. These were confirmed by item managers as duplicates and have been deleted from the catalog.

⁵DLA Study of Reference Numbers in the Federal Catalog System, Final Report, Volume I (Defense Logistics Agency, June 4, 1985).

We conducted our audit work at the following locations:

- Department of Defense, Pentagon
Washington, D.C.;
- Defense Logistics Agency
Alexandria, Virginia;
- Defense Logistics Services Center
Battle Creek, Michigan;
- Defense Electronics Supply Center
Dayton, Ohio;
- Defense Industrial Supply Center
Philadelphia, Pennsylvania;
- Defense Construction Supply Center
Columbus, Ohio;
- Defense General Supply Center
Richmond, Virginia;
- Navy Ships Parts Control Center
Mechanicsburg, Pennsylvania;
- Navy Aviation Supply Office
Philadelphia, Pennsylvania;
- Army Tank-Automotive Command
Warren, Michigan;
- Army Communications Electronics Command
Fort Monmouth, New Jersey;
- Air Force Cataloging and Standardization Center
Battle Creek, Michigan; and
- Air Force Logistics Command
Wright-Patterson AFB, Ohio.

Our review was performed from June 1986 through April 1987 in accordance with generally accepted government auditing standards.

Inadequate Item Identification in the Federal Catalog System

We found that, contrary to federal cataloging policy, many supply items continue to enter the Federal Catalog System with nonapproved names or with nondescriptive and inaccurate information. Further, other cataloged items are inappropriately classified or improperly numbered.

Inadequate item identification that prompted passage of the 1952 act still persist. This is largely due to cataloging activities' failure to (1) obtain or furnish contractor technical data that could improve the catalog database and (2) give sufficient attention to item identification. DLA has taken several recent initiatives to improve item identification; however, it is too early to gauge the effectiveness of most of these initiatives.

Current Condition of Item Identification

DLA statistical and other measurements of federal cataloging effectiveness suggest that inadequate item identification continues to adversely affect the system. We found that all the basic elements of item identification—naming, describing, classifying, and numbering supply items—need to be improved if the system is to fulfill its intended purpose.

Naming Items

Federal cataloging policy requires every supply item be assigned a single name, preferably an approved name, so that regardless of how many activities use the item, each will call it by the same name. As of January 1987, about 30,700 item names were approved for use by cataloging activities. However, additional approved names are needed, and some existing names probably should be updated. According to cataloging officials we interviewed, the list of approved item names has not kept pace with the influx of new parts and supplies entering the DOD inventories due to the advancing technology in such fields as electronics and communications.

Using approved names is crucial so that catalogers can categorize items in the appropriate Federal Supply Class and apply the relevant Federal Item Identification Guides, which help describe items entering the catalog. Also, since DIDS cannot compare nonapproved names against its master name file, the likelihood of duplicate items entering the catalog increases when approved names are not used. At the end of December 1986, DLSC reported that about 1.8 million, or 30 percent of the items in the catalog, did not have approved names. This was a slight improvement over the 31 percent of items without approved names as of September 1985, when DLSC initially began tracking this information.

Describing Items

The 1952 act requires each cataloged item to be identified by its unique characteristics: size, weight, packaging or packing data, a standard quantitative measurement unit, and other pertinent descriptive and performance information. Items described in this manner are referred to in the cataloging community as being fully described. If a supply item is identified only by manufacturer, part number, unit price, and unit of issue, but without characteristic or performance data, it is designated as nondescribed.

The use of nondescribed items is the least preferred method of item identification, because it provides minimal catalog data, usually just enough to obtain an NSN. Lacking characteristic and other detailed information that could be used to detect duplicates, these items are more likely to circumvent DIDS' automated controls than fully, or even partially, described items.

Cataloging officials told us one reason items are not described thoroughly is because Federal Item Identification Guides, developed by equipment specialists and catalogers to help describe items characteristically, have not always kept pace with new sophisticated weapon systems. Either there are no specific guides for some items, or the guides are not updated. According to catalogers, the latter is particularly true for items with unique characteristics, such as state-of-the-art electronics and communication items. Catalogers said that more attention should be directed to improving the usefulness of these guides.

Definitive item identification is expected to become more important as DLSC develops more sophisticated item comparison techniques under its DIDS modernization program, now being planned. At present, DIDS' primary automated control, reference number screening, matches manufacturers' names and part numbers only.

Currently, DIDS has only limited capability to compare new items with already cataloged items based on item characteristics. However, in the 1990s DIDS is expected to have an improved automated capability for detecting characteristically identical items. To take advantage of this increased capability, catalogers need to do a better job describing items, particularly for items entering the catalog as nondescribed.

According to DLSC statistics, the percentage of nondescribed items in the catalog has gone down each of the last 10 years, but the percentage drop has been modest, averaging less than 1 percent annually during that period. At the end of 1986, DLSC reported that 29 percent (almost 1.8

million NSNs) of all cataloged items were still nondescribed. Many of these were the same items previously cited as having entered the catalog with nonapproved item names.

Besides describing cataloged items for positive identification, information in the federal catalog must be accurate if items are to be adequately described. If catalog data are recorded incorrectly, duplicates may enter the catalog regardless of how well they are described. For example, DLSC discovered as early as 1985 that seemingly identical part numbers were bypassing DIDS' automated controls when hyphens, slashes, spaces, or special characters were inserted in cataloged part numbers. For example, two identical check valves, both made by the same manufacturer, were not detected as duplicates because the part number for one was cataloged as 249T1-6TT, while the second was registered as part number 249T-16TT. Although later determined by the item manager to be the same item, each received a separate NSN because the different placement of the hyphen enabled the second item to circumvent the DIDS control.

In its ad hoc study, which was still ongoing at the end of our review, DLSC detected 7,020 packages of potentially identical part numbers, consisting of 14,162 NSNs. A package consists of two or more NSNs that appear to have the same part number. By April 1987, with about 300 packages still to be reviewed, DLSC had confirmed that 3,823 (54 percent) of the packages had at least one duplicate NSN.

Classifying Items

The method of classifying cataloged items is an important aspect of item identification. If catalogers do not consistently classify items the same way, duplicates or unneeded variations of similar items can enter the Federal Catalog System. For example, a common undetected match condition would result when one cataloger classifies an item as a screw (Class 5305), while another cataloger designates the same item as a bolt (Class 5306).

Misclassification is more likely when cataloged items are not assigned approved names. The cataloger can more easily match the appropriate class to an item with an approved name because cataloging handbooks reference approved names to corresponding Federal Supply Classes. While screw and bolt are two classes, they are not approved names for items in those classes because they do not specifically identify the item.

On the other hand, the approved name "screw-machine" specifies a particular type of screw and more exactly classifies items that fit this category.

As a test, we analyzed item classifications for just one nonapproved name, "screw." Generally, according to cataloging handbooks, all 11,704 NSNs in the catalog with this nonapproved name (as of March 1987) should have been cataloged in Class 5305. Our analysis, using a standard DLSC computer program, showed 876 of these NSNs were registered in 122 different classes other than Class 5305. The items were cataloged under such diverse classes as guns, aircraft engine electrical system components, and hospital furniture, equipment, utensils, and supplies.

Numbering Items

The single item, single name precept of federal cataloging requires identical or similar form, fit, and function items to be cataloged only once—under a single NSN. This policy is designed to keep the catalog at a manageable level and inhibit duplication. Nevertheless, some multiple numbering of similar supply items is to be expected and is permissible because of variations in item characteristics or performance. "Screw-machine" and "bolt-toggle," for instance, may have different lengths, thread size, and applications.

As a result, many items in the Federal Catalog System have hundreds, or even thousands, of NSNs. As of December 1986, for example, the catalog contained 68 approved item names that had at least 10,000 separate NSNs. Table 2.1 shows the top 10 approved item names, i.e., those with the largest number of NSNs.

Table 2.1: Approved Item Names With Largest Number of NSNs as of December 1986

Approved item name	Number of NSNs
Circuit card assembly	199,417
Resistor, fixed, film	110,131
Resistor, fixed, wire wound	103,607
Gasket	92,899
Connector, receptacle, electrical	80,511
Microcircuit, digital	63,452
Connector, plug, electrical	57,478
Packing, preformed	53,810
Screw, machine	52,710
Spring, helical, compression	46,555

Cataloging officials told us that inadequate item identification invites multiple numbering of items, which sometimes leads to duplication. When items are improperly named, insufficiently described, or incorrectly classified, identical items may be individually numbered because information needed for DIDS to detect identical or similar items is deficient.

Some of these multiple-numbered items are periodically scrutinized under DLA's Item Reduction Studies Program, which serves as a post-cataloging device for removing duplicate or generally similar items from the federal catalog. Cataloging activities that conduct these special reviews must have sufficiently complete item identification data to make informed decisions about which items should be deleted from the catalog. This often means information other than what is recorded in the DIDS must be obtained, such as technical data not available or used when the items were initially cataloged.

During the last 10 years, an average of 127,000 NSNs were reviewed annually under this program. These reviews concluded that almost one of every five NSNs reviewed could be eliminated. Although many of the items were not exact duplicates, the reviews indicated they should have been included under existing NSNs because items similar in form, fit, and function were already cataloged. Because DLA does not track final actions on its recommendations, we could not determine how many of these items were actually eliminated from the federal catalog. Nevertheless, the reviews suggest that many multiple-numbered items in the catalog are not unique, and better initial item identification may have prevented these unnecessary items from getting into the system.

On a smaller scale, the current DLSC study that identified 3,823 packages of duplicate NSNs is further evidence there are fewer variations of some multiple-numbered supply items than the statistics in table 2.1 would indicate. In analyzing the DLSC-identified duplicates, we found duplicate NSNs in every one of the items listed in the table. More extensive testing would be required to determine whether the number of NSNs for these and other items with multiple stock numbers could be reduced.

Technical Data Needed for Improved Item Identification

DLA and service cataloging officials told us that technical data—drawings, specifications, and other descriptive information for supply items—is the foundation for good item identification. According to the officials, inadequate identification is largely the result of contractors submitting technical data late or not at all, or catalogers not using the data to describe items they enter into the Federal Catalog System.

Availability of technical data affects both cataloging and other logistics functions. Catalogers often need characteristic and performance information from technical data to properly name, describe, and classify items. Procurement officers need this information to identify additional supply sources to promote competitive buys. In 1984 the DOD Inspector General reported that spare parts were overpriced by millions of dollars because technical data was not being obtained or used to identify additional supply sources.⁶

When contractors submit technical data late (which is not unusual, according to cataloging officials), catalogers do not have sufficient time to determine whether proposed new items are already cataloged. At one 3-day provisioning conference⁷ we attended, government officials had to make important parts list, pricing, and cataloging decisions for over 1,500 items. Although the contractor was required to submit technical data 30 days before the conference, it did not submit the data until the first day of the conference. This did not allow the government participants the time needed to thoroughly review the technical data.

Sometimes, contractors refuse to provide technical data because of proprietary data claims. Statistics showing the frequency of such claims were not readily available at the cataloging activities we visited. At one activity, officials told us they experience this problem infrequently, while officials at another cataloging activity said such claims are made for about 70 percent of the items they manage.

Cataloging officials generally agreed that no more than 50 percent (and as few as 2 percent in one case) of the proprietary data claims were valid, and the contractors were not justified in their limited rights claims to drawings and other technical data they were trying to protect. When

⁶Defense-Wide Audit Of Procurement Of Spare Parts, (Office Of The Inspector General, Department of Defense, May 25, 1984).

⁷A provisioning conference is a meeting attended by contractors, government catalogers and equipment specialists, and item users to determine, among other things, whether spares and repair parts for the initial operation and maintenance of a weapon system are already in the supply cataloging system.

cataloging activities challenge unreasonable claims, they meet with varying degrees of success. For example, in 1986 one activity was successful in 93 of the 185 challenges it made, a 50-percent success rate. On the other hand, another cataloging activity challenged 1,441 claims, but received positive responses for only 244, a 17-percent success rate. A third activity indicated it was not challenging any proprietary data claims and was in the process of deciding what action it should take with respect to such claims.

Even when technical data is submitted, catalogers do not always use it. Both DLA and the DOD Inspector General, during studies conducted at DLSC and cataloging activities since 1984, have reported that DIDS is being impaired because technical and other important data available to catalogers is often not being forwarded to the DIDS database.

According to cataloging officials we interviewed, NSNs can be obtained without the descriptive information provided by technical data. Besides, it takes five times longer to fully describe an item than to describe an item by manufacturer's name and part number only, according to DLA officials. So, to expedite the NSN assignment process, catalogers sometimes enter items in the federal catalog as partially or nondescribed.

Initiatives to Improve Item Identification

Cataloging is just one of many logistics functions and is viewed by the military services, in particular, as a lower priority than deploying weapon systems and supporting these systems as quickly as possible. This often means getting NSNs with minimal identification data when items are initially cataloged.

To compensate for items initially identified incompletely, DLA has had for years the Item Identification Improvement Program, which encourages cataloging activities to upgrade partially and nondescribed items to a fully described status. This gives catalogers a second opportunity to provide DLSC with information enabling supply items to be cataloged in the preferred manner.

The DLA program sets annual goals for each DOD component in terms of how many NSNs should be more completely described. As table 2.2 shows, this initiative has experienced only modest success.

Chapter 2
 Inadequate Item Identification in the Federal
 Catalog System

Table 2.2: Goals and Accomplishments of the Item Identification Improvement Program, 1982-86

Cataloging activity	Annual goal	NSNs upgraded				
		1982	1983	1984	1985	1986
Army	13,600	2,208	962	1,583	3,396	3,037
Navy	46,000	763	308	269	595	1,538
Air Force	55,000	7,830	6,836	3,701	3,836	2,568
Marine Corps	1,700	17	13	87	11	11
DLA supply centers	87,500	28,317	36,643	28,144	26,185	28,311
Total	203,800	39,135	44,762	33,784	34,023	35,465
Percent Accomplishment		19.2	22.0	16.6	16.7	17.4

While the DLA supply centers have achieved between 30 and 42 percent of their combined goal during the last 5 years, the service cataloging activities have met between about 1 and 25 percent of their individual goals during the period. The Army's performance has been the best among the services; however, it had the poorest record for fully describing items when they initially entered the federal catalog. For example, 17,885 or 94.5 percent of 18,931 new Army items in 1986 were nondescribed, compared with only 2,110 or 5.8 percent of 36,611 new Air Force items.

DLA and service cataloging officials told us that the main reason for the generally poor results is they do not give this program a high priority. More recent initiatives to correct item identification deficiencies in the Federal Catalog System include efforts approved by the Assistant Secretary of Defense (Production and Logistics) in December 1985 to (1) increase the use of approved item names, (2) identify additional sources of supply, and (3) encourage greater use of descriptive item identification.

Increase Use of Approved Names

To evaluate policies and practices and recommend actions for improving the use of approved names, an Item Name Policy Review Committee of top-level advisory cataloging officials from the military services, federal agencies, and industry was established in December 1985. One preliminary committee finding, which reiterates what cataloging officials told us, was the need to expand the list of approved item names. "Microcircuit" was cited as an example because the current single approved name in the federal catalog is insufficient to account for the 11 industry-recognized names for this item. At the end of our review, the Committee was just beginning to formulate its agenda and plan of action.

DLA has established two new programs relative to approved item names. One, established in June 1986, sets performance goals for the military services and supply centers to attain higher percentages of NSNs with approved names. System-wide, the new goal is to assign approved names to 78 percent of all cataloged items. At the end of 1986, about 70 percent of the NSNs in the federal catalog had approved names, which represented about a 1-percent improvement from the previous year.

Under the second program, started in September 1986, if a cataloging activity requests NSNs for items with nonapproved names for more than 15 percent of its total requests for any quarter, DLSC monitors its requests in the next quarter. DLSC reviews requests with nonapproved names in the subsequent quarter and either accepts or challenges them. If challenged, DLSC proposes an approved name for the item. During the first quarter of fiscal year 1987, DLSC challenged 349 (20 percent) of 1,709 NSN requests.

Because DLSC's challenge is only advisory, new items may still enter the federal catalog with nonapproved names. DLSC did not track how many of its recommendations were accepted or rejected, and had not established performance measurements for the program.

Identifying Additional Supply Sources

Cataloging policy requires that cataloging activities submit all known manufacturers and part numbers for items they manage. This information produces more competition when parts are purchased and gives DLSC more information to compare new items for possible duplication.

About 10 years ago, DLA recognized the need to increase the listing of manufacturers and part numbers in the federal catalog when it established a goal to double such reference numbers in the DIDS. At the time, DLA had hoped to get 20 million reference numbers in the catalog by 1989. Based on more detailed analyses, in June 1986 DLA lowered its goal to an average of 1.99 reference numbers for each cataloged item, or about 12 million reference numbers.

At the end of 1986, the catalog listed 10.6 million reference numbers, an average of 1.75 reference numbers for each cataloged item. However, according to DLSC statistics, over 15 percent of the 6.1 million NSNs in the Federal Catalog System list government activities, and not the actual manufacturer, as supply sources. Consequently, the catalog is not as close to the DLA goal as the reference number statistics might suggest.

Greater Use of Descriptive Item Identification

To improve item descriptions, DLA has established what it views as a modest goal of having 50 percent of all cataloged items fully described. A headquarters DLA official told us that a more realistic long-term goal for describing items fully is 60 to 70 percent. DLSC statistics show that, during the last 10 years, the percentage of fully described items has fluctuated between 36.7 percent and 41.4 percent. At the end of 1986, the catalog had 38.5 percent fully described items.

If properly implemented and monitored, the initiatives discussed previously may help correct some of the item identification deficiencies that have long hindered the effectiveness of the Federal Catalog System. It was too early for us to determine if these efforts would improve item identification, because most had just been implemented.

Duplication of Supply Items May Be Costly

Allowing more than one of the same item to enter the supply cataloging system can be costly. Conceivably, millions of dollars are being needlessly spent to procure, catalog, store, and issue duplicates of items already in the supply system.

Extent of Duplication in the Federal Catalog System

According to cataloging officials, no one has ever determined the extent of duplication in the Federal Catalog System. DOD and DLA top-level managers, DLSC officials, and officials we interviewed at the service and DLA supply centers generally agreed that there is duplication, because information deficiencies in the catalog invite it. However, there is no consensus on the amount of duplication within the 6.1 million items in the Federal Catalog System. One activity estimated that 10 percent of all cataloged items may be duplicates. As previously discussed, DLSC's ad hoc study of selected part numbers showed that 54 percent of the packages reviewed had one or more duplicate items. The DOD Inspector General, in a recent report on the Federal Catalog System, found that 5 percent of the items in its sample were duplicates.¹ In commenting on a draft of our report, DOD pointed out that item reduction studies conducted by DLA over the last 6 years showed item duplication to range between 0.2 and 1.5 percent. DOD conceded that these rates are not representative of DOD-wide results because the military services have not been as aggressive as DLA in improving item identification and reducing the potential for duplication.

Supply Item Duplication May Be Costly

The cost implications of having duplicate supply items in the system is also largely unknown, because data that has been developed to estimate dollar impact is inconclusive.

Two basic cost figures needed to estimate what duplicate supply items cost the government are (1) the one-time cost to enter an item into the supply cataloging system and (2) the annual cost to maintain an item in the system. The estimate should include not only cataloging costs but also a portion of other logistics expenditures (such as provisioning, procurement, inventory management, and distribution) that might be avoided if it were known, prior to initiating a procurement, that the item was already in the supply system.

¹Identification and Cataloging of Supply Items, Office of the Inspector General, Department of Defense (Report No. 88-053, Nov. 30, 1987).

Unnecessary costs are incurred when a duplicate item is cataloged because logistics support functions must now be performed for two items of supply—the existing item and its duplicate. Some of the logistics costs associated with managing an item of supply are (1) the integrated manager's costs of determining how much and when to buy, (2) costs of physically handling and maintaining wholesale and retail inventories, as well as the storage space in which to locate those inventories, and (3) costs of processing requisition and issue documents generated by customers. Additionally, in determining what level of inventory to carry, the manager must make decisions about such things as the quantity of assets needed to cover lead times and safety levels. These quantities are based on forecasts of customer demand. With two identical items in the supply system, two inventories are established based on two separate demand forecasts. If, however, all demands were included in the demand forecast of the existing item, the inventory level for the existing item may increase only slightly. Funds tied up in the unneeded assets of the two inventories could be put to alternative uses.

Numerous attempts have been made to develop data on the cost to enter and maintain an item in the catalog and supply system, but none have provided cost data that is satisfactory to DLA. According to DLA officials, conclusive cost figures for entering and maintaining a supply item have not been developed primarily because cost elements to include in the calculations have not been agreed upon. For example, one study included a pro rata share of numerous logistics costs, while another study included costs only for selected logistics functions, such as provisioning and cataloging.

Another problem with the studies that have been done is that the analyses were often limited to a single DLA or service cataloging activity. DLA had these problems with five such studies shown in table 3.1, which have been conducted since 1981.

Table 3.1: Cost Estimates for Item Entry and Annual Maintenance

Source and year of cost estimate	One-time cost to enter a supply item	Annual cost to maintain a supply item ^a
Consultant (1983)	\$62	\$165
Office of the Secretary of Defense (1986)	207	165
DLA (1986)	566	172
Army (1981)	617	448
Air Force ^b (1986)	636	—

^aDoes not include the purchase price of duplicate items.

^bThis study did not segregate costs to enter and maintain a supply item. Instead, the one-time entry cost includes maintenance of an item for the first year.

These five cost studies are more conservative than other studies we reviewed that calculated costs that were significantly higher. For example, one of the other studies estimated the cost to enter a single, highly-complex supply item for 1 year at \$70,370.

As part of its cost-benefit analysis for the planned DIDS modernization, in January 1987, DLSC developed a new set of cost figures by averaging the costs from the five studies, after applying inflation factors to update the data. According to a DLSC official, the studies listed in table 3.1 were used because they were the most recent and reasonable in terms of efforts done in estimating costs. Using this methodology, DLSC estimated the one-time cost to enter a supply item at \$447 and the annual cost to maintain an item at \$262.

Applying the DLSC-estimated costs to the 3,823 packages of duplicate items identified in the special DLSC study yields estimated unnecessary one-time costs of \$1.7 million, and annual recurring costs of \$1 million. Our analysis of NSN assignment dates for the 3,823 duplicates showed that all of them had been in the system at least 1 year, and 12 items had been in the system for 25 years. The average duplicate item had been in the catalog for 12.4 years, which computed to an average total maintenance cost of \$12.4 million (current dollars) for the 3,823 duplicates. In summary, based on the DLSC estimates, the total unnecessary costs to enter and maintain these items in the supply cataloging system would be \$14.1 million (current dollars). Because of the lack of data, our example serves only to illustrate what the impact may be when duplicate items are allowed to enter and stay in the system.

Conclusions and Recommendations

Conclusions

The Federal Catalog System does not meet the 35-year-old congressional mandate that every cataloged item be identified in a manner to distinguish one supply item from another. Catalogers, and the information sources they rely on to identify supply items, are not providing complete and accurate data to the centralized federal catalog. This is true for new items entering the catalog as well as for items previously cataloged whose identification status often is not upgraded. Major contributing factors to this condition of federal cataloging include lack of technical data and the low priority generally given to cataloging.

The Federal Catalog System has a history of item identification deficiencies. Frequently, items enter the federal catalog inappropriately named, described, classified, or numbered. Consequently, the government cannot be sure what it has in its supply inventories, or whether it is buying items that duplicate what is already in the supply cataloging system. At the end of 1986, 30 percent of all cataloged items did not have approved names, and 29 percent were described just well enough to meet minimum requirements for assignment of an NSN. Although their exact numbers are unknown, indications are that many items are also misclassified, improperly numbered, or incorrectly cataloged. These conditions invite item duplication because DIDS generally cannot detect identical or similar form, fit, and function items that are not adequately identified.

The extent of duplication and other logistics problems caused by inadequate item identification, or the unnecessary costs incurred as a result, are largely unknown. However, these problems may be serious and costly.

Recommendations

We recommend that the Secretary of Defense direct the Secretaries of the Army, Navy, and Air Force; and the Director, DLA, to

- improve item identifications by (1) expanding the list of approved item names and closely monitoring their use, (2) developing additional Federal Item Identification Guides and updating existing guides, (3) giving more attention to the Item Identification Improvement Program, (4) providing greater emphasis on working with contractors to have them submit technical data more timely, and (5) establishing more effective mechanisms for challenging contractor proprietary data claims and obtaining and entering technical data in the Federal Catalog System for items already cataloged, but inadequately described, and

- significantly reduce the number of duplicate items in the Federal Catalog System through such programs as the special DLSC study that identified duplication in the catalog, and exploring alternative ways to search out items that do not belong in the system.

Agency Comments and Our Evaluation

In commenting on a draft of this report, DOD generally agreed with our findings and recommendations and provided information on actions taken or planned to correct problems and implement our recommendations. DOD provided other technical corrections and clarifications, which have been incorporated in the report.

In agreeing with the draft report's findings and recommendations, DOD noted that the need to improve item identification and reduce duplicate items in the Federal Catalog System are central to many of the ongoing efforts in the cataloging community. DOD further stated that such efforts as Cataloging Tools on Line, Digital Storage and Retrieval Engineering Data System, Engineering Data Computers Assisted Retrieval System, Engineering Data Management Information and Control System, and Military Engineering Data Asset Locator System should, when implemented, assist catalogers in describing items and gaining access to technical data. These systems are in the developmental stages and will not be fully implemented until early 1992. Additionally, DOD noted that the use of approved item names has received increased emphasis in the last 2 years. Similarly, the Department is studying the structure and function of the Federal Item Identification Guides to identify long- and short-term improvements.

DOD agreed that there is duplication in the Federal Catalog System and that no one knows the extent. In commenting on the extent of item duplication, one activity estimated duplication could be as high as 10 percent. DOD disagreed with our use of this estimate in projecting potential item duplication in the catalog because it was based on one activity's opinion. DOD pointed out that item reduction studies conducted by DLA over the last 6 years showed item duplication to be much lower. After considering DOD's comments, we have revised the report.

DOD concurred with the intent of our draft proposal to reduce the number of duplicate items in the Federal Catalog System but objected to the implication that this could only be done by institutionalizing ad hoc programs, such as the special DLSC study. We agreed and therefore revised our recommendation.

Comments From the Deputy Assistant Secretary of Defense (Systems)



ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-6000

PRODUCTION AND
LOGISTICS

28 MAR 1988

(L/SD)

Mr. Frank C. Conahan
Assistant Comptroller General
National Security and International
Affairs Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Conahan,

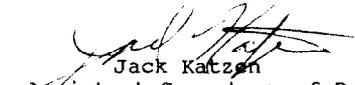
This is the Department of Defense (DoD) response to the General Accounting Office (GAO) Draft Report, "Continuing Item Identification Problems in the Federal Catalog System," dated December 29, 1987 (GAO Code 391570) OSD Case 7508.

The Department generally concurs with the GAO draft report findings and recommendations. The need to improve item identifications and reduce duplicate items in the Federal Catalog System are central to many of the ongoing efforts in the cataloging community. The additional emphasis the GAO report places on these efforts will aid the Department in reaching its goals in this important area.

The draft report recognizes the pivotal role of the cataloging system in the overall logistics process and correctly assesses the adverse impact on the total system of incomplete item descriptions in the Federal Catalog. While the report acknowledges that steady progress continues to be made in the quality of item identifications and in the elimination of duplicate items, it is critical of the slow rate of improvement and attributes this to the low priority given to cataloging in general. The Department is addressing the problem of productivity with a concert of actions, making maximum use of automation to aid the cataloging function at the working level. Several of these actions are discussed in the enclosure.

The DoD appreciates the opportunity to provide its comments on this draft report.

Sincerely,


Jack Katzen
Deputy Assistant Secretary of Defense
(Systems)

Enclosure

GAO DRAFT REPORT-DATED DECEMBER 29, 1987
(GAO CODE 391570) OSD CASE 7508

"CONTINUING ITEM IDENTIFICATION PROBLEMS IN THE FEDERAL
CATALOG SYSTEM"
DEPARTMENT OF DEFENSE COMMENTS

* * * * *

FINDINGS

- o **FINDING A: The Federal Catalog System.** The GAO observed that supply cataloging affords Government visibility over items in stock so items already in the supply network are not procured under a different name or number. According to the GAO, (1) the Congress established the Federal Catalog System as a result of unnecessary and costly supply item replenishments resulting from each Service operating numerous, autonomous supply cataloging systems following World War Two, (2) this system is the only Federal Government system used to procure, identify, store, issue and dispose of items recurrently used, and (3) catalogers at the four Services and the six Defense Logistics Agency Supply Centers collectively manage 84 percent of all active supply items in the Federal Catalog System (FCS). The GAO concluded the Federal Catalog System depends on information identifying and distinguishing positively one supply item from another. (pp. 3-5, pp.13-26/GAO Draft Report)
- o **DOD RESPONSES:** Concur. The FCS is the only Federal Government system used to identify items and is the principal item and logistics data source for actions to procure, store, issue, and dispose of items recurrently used.
- o **FINDING B: Current Condition of Item Identification.** The GAO reported that Federal cataloging policy requires new items entering the supply system to be (1) assigned only one name (preferably an item name approved by the DLSC), (2) completely and accurately described, (3) registered in the appropriate Federal Supply Class, and (4) cataloged under a single stock number. The GAO found, however, that at the end of 1986, 30 percent (about 1.8 million items) of all cataloged items did not have approved names, 29 percent (about 1.8 million National Stock Numbers--NSNs) of all cataloged items--many the same as not assigned approved names--were nondescribed because they lacked characteristic and performance data, and thousands of items were

ENCLOSURE

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misclassified or duplicated numbers in the Federal Catalog. In support of its latter finding (misclassified or duplicated numbers) the GAO cited (1) the DLA Item Reduction Studies Program, which involved reviewing an average 127,000 NSNs annually over the last 10 years and concluded that one in five NSNs could be eliminated, (2) an ongoing DLSC ad hoc study that detected 7,020 packages involving 14,162 NSNs with potentially identical part numbers, and had confirmed at least one duplicate NSN in 3,823 packages (54 percent) by April 1987, with about 3000 packages still to be reviewed, and (3) its test results for a single nonapproved name item (screw) that showed 876 NSNs (of a total 11,704) were registered in 122 different classes on March 1987 other than the proper class. The GAO noted that the 30 percent nonapproved name rate represented a slight improvement over the 31 percent rate at September 1985, when the DLSC initially began tracking the information. The GAO also noted that, according to DLSC statistics, the nondescribed item rate had gone down modestly (less than 1 percent) each year over the last 10 years. In addition, the GAO noted that some similar supply item multiple numbering can be expected and is permissible due to characteristic or performance variations. The GAO concluded, however, that the inadequate item identifications prompting the 1952 Act still persist. The GAO also concluded that inadequate item identifications not only result in poor cataloging, they hinder other logistics functions, may cause unnecessary item purchases, and can result in spending millions needlessly to enter and maintain items previously cataloged. (pp. 5-7, pp.30-42/GAO Draft Report)

- o **DOD RESPONSE:** Concur. Some of the statistics in the GAO report require clarification, however. For example, the actual percentage of DoD-managed items that did not have approved item names at the end of 1986 was 28.3 percent (approximately 1.33 million items). The percentage has continued to decline to 27.6 percent (approximately 1.3 million items) at the end of the third quarter of 1987. New items entering the system have a significantly lower percentage of non-approved item names (17.1 percent at the end of 1986 and 13.9 percent at the end of the third quarter of 1987). Although, as noted by the GAO, the use of reference numbers (manufacturer code and part number) as the basis for National Stock Number (NSN) assignment rather than descriptive (item characteristics and performance) based NSN assignment has been declining steadily for the past ten years, the need for a programmatic approach to the reduction of incomplete item descriptions in the FCS is recognized by the DoD. Several actions are already in process to assist in reaching this goal. The "three-tier goal" system, initiated on May 14, 1986, measures cataloging input by the

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Services, the DLA, and other system participants in terms of the use of Approved Item Names, Descriptive Method Item Identifications, and multiple reference numbers. Also, requirements are currently being developed for a contractor to perform technical data validation of Non-Approved Item Names (NAINs) and item descriptions to identify Approved Item Names and convert NAINs based on the NAIN and the descriptive data resident in the FCS. The contract award is tentatively scheduled for the first quarter of 1989.

- o **FINDING C: Inadequate Item Identification.** The GAO reported that, in January 1987, there were about 30,700 item names approved for DLSC use. The GAO found, however, that additional approved names were needed and some existing names probably needed updating--according to cataloging officials, the approved names list has not kept pace with new parts entering DoD inventories due to advancing state of the art in fields such as electronics and communications. The GAO observed that (1) using approved names is crucial for catalogers to categorize items in the appropriate Federal Supply Class and apply the relevant Federal Item Identification Guide, and (2) using nonapproved names increases the likelihood for duplicate items because the Defense Integrated Data System (DIDS) cannot compare nonapproved names against its master name file. In addition, the GAO found that using the nondescribed item identification method, which is least preferred because it provides minimal catalog data (usually only enough to obtain an NSN) is more likely to circumvent the DIDS automated controls--according to catalog officials, one reason items are not described thoroughly is Federal Item Identification Guides have not always kept pace with new sophisticated weapon systems, particularly state-of-the-art electronic and communication items. Finally, the GAO found that duplicates may enter the catalog regardless of how well they are described, if catalog data are recorded incorrectly, if catalogers do not classify items consistently (and misclassification is more likely when approved names are not assigned), and if identical or similar form, fit and function items are not cataloged only once under a single NSN in accordance with the Federal cataloging single-item, single-name precept. The GAO concluded that cataloging does not receive the same attention and priority as other logistics functions, such as deploying a major weapon system, and all item identification basic elements--naming, describing, classifying and numbering--need improving if the system is to fulfill its intended purpose. The GAO also concluded that catalogers need to do a better job describing items, particularly those entering the catalog as nondescribed, to take advantage of improved DIDS capability

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expected in the 1990s under the currently planned DIDS modernization program. (pp.7-8, pp. 30-42/GAO Draft Report)

- o **DOD RESPONSE:** Concur. Catalogers need to do a better job describing items entering the system. The DoD also agrees that the cataloging process does not receive the same attention and priority that is given to certain other logistics functions. The utility of the cataloging function is perceived primarily to be in the long term and in its impact on the infrastructure of the logistics process. Functions, such as the fielding of a new weapon system, with more immediate impact on the short term operating proficiency of the military forces will always attract more substantial manpower and funding support than will less visible functions such as cataloging. Frequently, the cataloging community must optimize its comparatively constrained resources more efficiently than is required in areas receiving more external support and assistance. This propensity in the cataloging function tends to focus on the resource that cataloging has most--data. Several DoD-designed and contractor-designed automated data tools have recently been activated or are in the advanced development phase to assist catalogers in performing their basic functions. The Defense Logistics Agency Cataloging Tools On Line (CTOL) automated system has recently been developed and is currently being tested at the Defense Construction Supply Center to assist operational level catalogers to streamline and increase the accuracy of basic cataloging actions. The CTOL, currently scheduled for implementation at the remaining DLA Supply Centers in October - December 1989, and under consideration by the Military Services, Defense and Civil Agencies and the NATO, complements the ongoing use of several contractor-supplied systems in use throughout the DoD to amplify the productive efforts of individual catalogers. Also impacting the ability of catalogers to improve the ratio of descriptive type item identifications in the FCS are several new technical data systems now in place or in the development stages in the Services and DLA (also see the DoD response to Finding D).
- o **FINDING D: Technical Data Needed.** The GAO reported catalog officials advise that (1) characteristic and performance information from (contractor) technical data (drawings, specifications and other descriptive information) is the foundation for good item identification, and (2) inadequate identification results largely from contractors submitting technical data late or not at all, or catalogers not using the data to describe items entering the Federal Catalog System. According to the GAO, technical data availability affects both cataloging and logistics functions--it is often

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needed by (1) catalogers to properly name, describe and classify items, and (2) procurement offices to identify additional supply sources and promote competitive buys. The GAO found that catalogers have insufficient time to determine whether proposed new items have been cataloged when contractors submit technical data late. The GAO noted that at one provisioning conference attended, the contractor was required to submit data 30 days in advance, but actually submitted the data on the first day of the conference. The GAO also found that contractors sometimes refuse to furnish technical data based on proprietary data claims--statistics were not available, but the GAO noted activity officials advise that the problem ranged from infrequent at one activity to 70 percent of items managed at another. The GAO observed that cataloging officials agreed the contractor proprietary claims were valid in no more than 50 percent of the cases. The GAO also observed that activity challenges to such claims meet with varying success--one activity was not challenging claims at all, and others had successes ranging up to 50 percent. Finally, the GAO found that catalogers do not always use the technical data furnished by contractors--an NSN can be obtained without the full descriptive information, and it takes five times longer to fully describe an item. The GAO cited 1984 DoD Inspector General findings that spare parts were overpriced millions of dollars because technical data were not obtained or used to identify additional supply sources. The GAO also cited both DoD Inspector General and Defense Logistics Agency reported impairments to DIDS because technical and other important data available to catalogers were not forwarded to the DIDS data base. The GAO concluded that lacking, or cataloger failure to use, contractor technical data is a major factor contributing to the present inadequate Federal Catalog System item identification. (p. 7, pp. 43-47/GAO Draft Report)

Now on pp. 3, 20-21.

- o **DOD RESPONSE:** Concur. Good technical data is essential for complete item identifications. The cataloging community is working with the engineers and equipment specialists to challenge contractor claims of proprietary data. The DoD has initiated several programs to improve accessibility of technical data for use by catalogers and procurement offices:
 - The Digital Storage and Retrieval Engineering Data System (DSREDS) for the Army and Engineering Data Computer Assisted Retrieval System (EDCARS) for the Air Force are used to automate the storage and retrieval of technical drawings. Both of these systems have been delivered to Army and Air Force installations and are undergoing operational testing for acceptance. These

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systems are expected to be operational by the end of FY 1988.

- The Navy program, Engineering Data Management Information and Control System (EDMICS), will provide a state-of-the-art management system to Navy and DLA. Although EDMICS was developed separately from DSREDS and EDCARS, all of these systems will be able to communicate and exchange data electronically. This system will be operational by the second quarter FY 1992.
- The DLA is developing the Military Engineering Data Asset Locator System (MEDALS), which will be an index of all data stored in the technical data repositories of the activities of the DoD. This includes, but is not limited to, engineering drawings, parts lists, specifications, test data, and/or photographs of the item. It is expected that MEDALS will be prototyped in the fall of 1988 and the system fully operational by the end of 1988. As an enhancement to the MEDALS, the DLA will be able to challenge reference method item identifications when it is shown that technical data is available in the MEDALS. This enhancement is planned for late 1989.
- o **FINDING E: Initiatives to Improve Item Identification.** The GAO reported that the DLA has had the Item Identification Improvement Program, which sets annual completely-described NSN goals to upgrade partially and nondescribed items, for years. The GAO found, however, that this initiative has experienced only modest success--goal accomplishment ranging from 16.6 percent in FY 1984 to 22.0 percent in FY 1983, with FY 1986 at 17.4 percent. The GAO also found that the DLA supply activities achieved between 30 percent and 42 percent of their combined goal, but Service cataloging activities were less successful, meeting only between 1 percent and 25 percent of their individual goals. The GAO observed that the Army performance has been best among the Services, but it had the poorest record for fully described items initially entering the catalog--94.5 percent nondescribed, compared to the Air Force 5.8 percent, in 1986. The GAO also found more recent corrective initiatives included efforts approved by the Assistant Secretary of Defense (Production and Logistics) in December 1985, to increase approved item name use, identify additional supply sources, and encourage greater descriptive item identification use. The GAO noted that (1) an Item Name Policy Review Committee was established in December 1985, (2) the DLA established two new programs (one in June 1986, setting Service and supply center NSN approved-name

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performance goals, and another in September 1986, providing for monitoring, if a cataloging activity NSN requests without approved names exceed 15 percent in a quarter), (3) in 1978, the DLA established a goal for double Federal catalog-listed manufacturer and part numbers referenced in the DIDS (20 million referenced numbers in the catalog by 1989, but goal reduced to about 12 million in June 1986, and 10.6 million actual at 1986 end--not as close to goal as statistics indicate, because over 15 percent list Government activity as supply source), and (4) the DLA has established a modest goal to have 50 percent of all cataloged items fully described (actual has fluctuated between 36.7 percent and 41.4 percent over the last 10 years, and was 38.5 percent at 1986 end). The GAO concluded that the initiatives may help correct some item identification deficiencies long hindering Federal Catalog System effectiveness, if properly implemented and monitored, but it is too early to tell since most were only beginning. (p. 7, pp. 48-56/GAO Draft Report)

Now on pp. 21-24.

- o **DOD RESPONSE:** Concur. The cited initiatives will result in the reduction of potential duplicate items entering the FCS, as well as provide better cataloging tools for each of the Services/Agencies.
- o **FINDING F: Extent of Duplication.** The GAO reported that (1) according to cataloging officials, no one has ever determined the extent of actual duplication in the Federal Catalog System, and (2) the consensus among the OSD, DLA, DLSC officials and other officials interviewed was there is duplication because information deficiencies in the catalog invite it. The GAO observed that only one activity requested to do so would estimate duplicate items, and estimated about 10 percent of all cataloged items may be duplicative. The GAO concluded that, if this estimate is accurate, there would be about 600,000 duplicate items in the Federal Catalog System. (pp. 7-8, p. 56/GAO Draft Report)
- o **DOD RESPONSE:** Partially concur. The DoD agrees that duplicates may be in the Federal Catalog System; however, the DoD does not agree with the extent of duplication used by the GAO (i.e., the 10 percent rate). For example, the duplication findings of the DLA Supply Centers Item Reduction studies for the past six years are listed below to illustrate duplication findings:

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<u>FY</u>	<u>QTY REVIEWED</u>	<u>DUPLICATIONS DETECTED</u>	<u>DUPLICATE PERCENTAGE</u>
82	122,087	1888	1.5
83	134,642	1207	.8
84	143,518	1059	.7
85	147,443	376	.2
86	71,849	361	.5
87	120,573	749	.6
Total	740,112	5640	.7

The following methodologies are currently used to detect, prevent and eliminate duplication: Item Entry Control, the Item Reduction Program, reference number screening, and characteristics screening.

- o **FINDING G: Cost of Duplication.** The GAO observed that duplicate item cost implications are also largely unknown, because data developed to estimate dollar impacts are inconclusive. According to the GAO, two basic cost figures needed to estimate duplicate supply item costs to the Government are the one-time cost to enter an item into the supply catalog system, and the annual cost to maintain an item in the system. The GAO noted that the costs would include cataloging costs, as well as a portion of other logistics costs (such as provisioning, procurement, inventory management and distribution), which could possibly be avoided if it were known that an item was already in the supply system prior to initiating a procurement. The GAO found that numerous attempts have been made to develop this data, but none has satisfied the DLA--one study included numerous pro rata logistics costs, while another included selected logistics functions, and some analyses were limited to a single DLA or Service cataloging activity. The GAO also found that the DLSC developed new cost figures in January 1987, as part of its cost-benefit analysis for the DIDS modernization, which were based on applying inflation factors to the cost averages from five studies. The GAO reported that this effort yielded a \$447 one-time cost to enter an item in the catalog and a \$262 annual cost to maintain the item. Based on applying the DLSC methodology to the 3,823 packages with duplicates identified in the special DLSC study, the GAO estimated the unnecessary one-time cost at \$1.7 million and the unnecessary recurring annual cost at \$1.0 million. Based on adjusting the DLSC estimates for the average time (12.4 years) the duplicates had been in the supply system, the GAO concluded that the total unnecessary cost would be \$14.1 million. The GAO cautioned, however, that this is only an example to

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illustrate what the cost may be when duplicate items are allowed to enter and stay in the system. (p. 1, p. 8, pp. 57-61/GAO Draft Report)

- o **DOD RESPONSE:** Concur. Duplicate item costs are largely unknown due to costs in areas other than the supply catalog system. The figures quoted by the GAO may or may not be correct, since the cost implications are not concrete. The DoD has experienced some success in preventing duplicate items from entering the Federal Catalog System through the Item Entry Control Program and mechanized provisioning screening. For example, the cost avoidance for the DLA from these two processes are:

ITEM ENTRY CONTROL

<u>FY</u>	<u>TOTAL MANUAL REVIEWS</u>	<u>PRECLUDED ENTRY (%)</u>	<u>COST AVOIDANCE (\$229 PER ITEM)</u>
1984	220,749	33.4	\$16,877,071
1985	205,359	33.7	\$15,855,502
1986	174,211	33.4	\$13,309,709
1987	179,046	34.1	\$13,991,671
Total	779,365	33.7	\$60,033,953

MECHANIZED PROVISIONING SCREENING

<u>FY</u>	<u>PART NUMBERS SCREENED</u>	<u>PERCENT MATCHES</u>	<u>COST AVOIDANCE (\$229 PER ITEM)</u>
1984	7,711,138	35.2	\$ 86,831,456
1985	7,297,861	39.0	\$ 91,098,912
1986	9,496,348	38.7	\$117,579,936
1987	9,910,172	38.7	\$122,862,080
Total	34,415,519	37.9	\$418,372,384

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RECOMMENDATIONS

- o **RECOMMENDATION 1:** The GAO recommended that the Secretary of Defense direct the DLA and the appropriate Service officials to improve item identifications by (1) further expanding the list of approved item names and closely monitoring their use, (2) developing additional Federal Item Identification Guides and updating existing Guides, where necessary, (3) giving more attention to the Item Identification Improvement Program, (4) providing greater emphasis on working with contractors to have them submit technical data more timely, and (5) requiring cataloging activities to establish more effective mechanisms for challenging contractor proprietary data claims, and to obtain and enter technical data in the Federal Catalog System for items already cataloged, but inadequately described. (p.64/GAO Draft Report)
- o **DoD RESPONSE:** Concur. The response to the recommendation is divided into five parts.
 - o **PART (1):** The use of approved item names has received increased emphasis in the last 2 years. An item name policy review committee composed of all the Services and the DLA was formed in 1986, and made recommendations in December 1987, on ways to improve naming practices. These recommendations are currently being evaluated for implementation in the fourth quarter of FY 1988. In September 1986, a nonapproved item name challenge system was implemented within the DLA to automatically challenge any item entering the cataloging system that did not carry an approved item name. In the fourth quarter of FY 1987, the DLA had 90.7 percent of new items entering the system with approved item names. This challenge system is planned for implementation DoD-wide in the first quarter of FY 1989.
 - o **PART (2):** The Department is currently examining the structure and function of the Federal Item Identification Guides (FIIGs). The Defense Logistics Agency convened its cataloging experts in a FIIG Futures Conference at the DLSC in February 1988. The purpose of the conference was to seek improvements, both long and short term, in the FIIG methodology for cataloging descriptive data. The conferees identified the following major improvements:
 - o Develop specific item name descriptive guides versus the commodity oriented FIIGs. This change

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will permit greater flexibility and control in the development and maintenance of Approved Item Names and their respective descriptive guides.

- o Develop expert systems that can be furnished to both Government and industry for use in preparing descriptive item identifications. This is a long-term capability, which will be implemented incrementally, but it will require specific characteristic data rather than the generic "technical data," thus reducing demands for proprietary data for cataloging purposes.
- o Streamline the Approved Item Name approval process by delegating name definition authority to the appropriate commodity managers, reducing coordination requirements, and implementing a faster communication process such as electronic mail boxes.
- o Simplify the FIIG revision process to permit faster and more efficient maintenance of the data base as a result of revising a descriptive guide.

The DLA plans to develop prototype item name descriptive guides, evaluate them, and make recommendations based on the prototype evaluation to the DoD/Federal cataloging community in May 1988.

- o **PART (3):** The Item Identification Improvement Program is receiving increased management attention at all levels of the DoD. As discussed in the DoD response to Finding B, the DLA has established the "three-tier goal" system to increase the percentage of items that are fully described. In addition, the DoD plans to further refine these goals to focus DoD efforts toward describing new items entering the system and existing, high demand items. This will prevent the further proliferation of nondescribed items and assist the acquisition process in identifying substitute items, increasing competition, reducing prices, etc.
- o **PART (4):** The Department recognizes the importance of technical data, not only in cataloging, but for all logistics functions. Greater emphasis is being applied within the DoD to improve the process of acquiring timely technical data. The Director, DLA, initiated correspondence on this subject on January 8, 1986 with the Commanders of the Military Services' Logistics and Systems Organizations. This action has resulted in the issuance of guidance to the Acquisition Commanders to

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assure that all functional elements requiring technical data not only participate in contract development but also in the acceptance process of the deliverables from the contractors. Much of the long-term solution of the problem of obtaining timely technical data will result from the accomplishment of basic improvements in the method of technical data exchange among the Services, Agencies, and Industry currently being pursued under the Computer Aided Logistics Support (CALs) Program. Additionally, the use of Expert Systems to facilitate the delivery of item identification data from the contractors will reduce the volume of technical data needed to support the item identification process. Definite plans to implement Expert Systems in this form are not anticipated until the 1991-1992 time period.

- o **PART (5):** For clarification, it is suggested that the words, "requiring cataloging activities to..." be deleted from this recommendation. Although the need for technical data for use in developing complete item identifications is clear, it is not a function of the cataloging community to initiate challenges to a contractor's claims of proprietary rights. Current laws define very specifically the DoD ability to challenge contractor assertions of proprietary data rights. Among the limitations on DoD rights to challenge proprietary data claims is a three-year limit beyond which the DoD cannot challenge such claims. This period is not considered sufficient because of the volume of technical data associated with a new weapon system and the fact that reprocurments for many items will not occur for more than three years after initial delivery. However, it should be remembered that the percentage of cataloging actions affected by proprietary rights issues is very small (probably less than 10 percent) and, even under the best of circumstances, it is doubtful that proprietary claims could be resolved prior to initial cataloging. The DoD agrees with the GAO that the need for technical data exists not only during the initial cataloging process and, for this reason, will continue to attempt to obtain the technical data required to upgrade item identifications after completion of initial cataloging actions.
- o **RECOMMENDATION 2:** The GAO recommended that the Secretary of Defense direct the DLA and the appropriate Service officials to significantly reduce the number of duplicate items in the Federal Catalog System by institutionalizing ad hoc programs, such as the special DLSC study that identified duplication in the catalog, and exploring alternative ways

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to search out items that do not belong in the system.
(pp. 64-65/GAO Draft Report)

- o **DoD RESPONSE:** Concur with the intent of the recommendation. Because the phrase, "...institutionalizing ad hoc..." is somewhat confusing, suggest rewriting the recommendation to read,

"The GAO recommended that the Secretary of Defense direct the DLA and the appropriate Service officials to significantly reduce the number of duplicate items in the Federal Catalog System and explore alternative ways to search out items that do not belong in the system. Programs, such as the special DLSC study that identified duplication in the catalog, could assist in this effort."

The elimination of duplicate items was one of the cornerstones of the FCS when it was established in 1952 and is every bit as important today. The initiatives discussed in the DoD responses to Findings F and G show some of the progress the DoD has made in preventing duplicate items from entering the FCS. The programs discussed in the DoD response to Finding D are some of the future DoD plans for the prevention or the elimination of duplicate items. It is important to use the constrained resources in the cataloging community wisely by attacking the problem of duplicate items through the establishment of comprehensive programs. The manpower and time intensiveness of ad hoc programs requires that a clear expectation of sufficient benefits exist to justify the employment of these resources on special projects. The Department will review the potential benefits of alternative projects to determine if the effort to eliminate duplication can be accelerated in this way.



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