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REPORT TO THE CONGRESS

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Savings Attainable By
Revising Packaging In The
Department Of Defense

B-157476

*BY THE COMPTROLLER GENERAL
OF THE UNITED STATES*

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MAY 21, 1973



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

B-157476

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

This is our report on savings attainable by revising packaging in the Department of Defense.

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).

Copies of this report are being sent to the Director, Office of Management and Budget; the Secretaries of Defense, Army, Navy, and Air Force; and the Director, Defense Supply Agency.

A handwritten signature in black ink, reading "James B. Stacks".

Comptroller General
of the United States

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ABBREVIATIONS

DOD Department of Defense
GAO General Accounting Office
DSA Defense Supply Agency
CONUS continental United States
EOQ economic order quantity

D I G E S T

WHY THE REVIEW WAS MADE

At the outset of United States buildup in Vietnam, fast logistical response was strained severely because facilities there were too meager to handle vast quantities of supplies. In addition, many supplies could not survive the rigors of transportation, outdoor storage in a hostile environment, and multiple and rough handling. (See p. 3.)

Great material losses were sustained. Stringent and costly packaging criteria soon were specified across the board, regardless of destination. (See pp. 3 and 4.)

Many of those stringent criteria continue in effect although conditions have changed significantly. (See p. 6.)

GAO sought to determine the extent to which packaging costs for shipments from contractors and military depots, and to and from repair facilities, could be reduced.

FINDINGS AND CONCLUSIONS

The Department of Defense (DOD) spends millions of dollars each year for packaging it doesn't need. It requires bidders and contractors to wade through voluminous standards, specifications, and guidelines which are repetitious, redundant, or

not applicable. (See p. 6.)

Contractors whose own commercial packaging often equals that specified are further confronted by inconsistent methods of packaging required by different DOD buyers. (See p. 6.)

The U.S. Army Materiel Command Packaging, Storage, and Containerization Center--DOD's focal point established in 1963 to develop and monitor specifications for packaging--has been successful in canceling or consolidating numerous standards and specifications. During this period, however, extensive proliferation of specifications occurred. (See p. 22.)

During fiscal year 1971, DOD purchased an estimated \$13.4 billion worth of material subject to the types of packaging discussed in this report. Though no overall averages are available, industry comments suggest that packaging costs could average as much as 10 percent of procurements. (See p. 5.)

Millions of dollars are spent each year for packaging beyond that necessary for adequate protection, or by requiring contractors to meet military specifications when their own commercial packaging is fully adequate. (See p. 6.)

Defense contractors told GAO that Government packaging generally costs more than commercial packaging and

that commercial packaging meets Government needs for most material under conditions normally experienced by military users. (See p. 24 and exhibit.)

DOD managers don't know and don't determine routinely the suitability of commercial practices. They continue to impose specifications on bidders and contractors which typically call either for over-packaging of material or for a commercial grade of packaging different from the contractors' packaging. (See pp. 6, 12, and 18.)

When a contractor is required to check all the military specifications normally cited and to deviate from its normal packaging practices, it increases costs to the Government.

The Defense Supply Agency and the Army in 1971 decreased levels of packaging specified for many items and are specifying commercial packaging and claiming annual savings of at least \$12.5 million. (See pp. 7 and 10.)

The Air Force and Navy, however, continue to specify very high levels of packaging. (See pp. 12 and 15.)

RECOMMENDATIONS OR SUGGESTIONS

In view of the savings available in the packaging area, the Secretary of Defense should

- discontinue blanket assignment of level A packaging (protection against the most severe conditions known or anticipated);
- determine the suitability of commercial packaging for military requirements;

--make greater use of commercial packaging when it meets minimum Government requirements; and

--closely monitor the progress of the U.S. Army Materiel Command Packaging, Storage, and Containerization Center--DOD's focal point for developing and monitoring the packaging program-- and reaffirm its authority to carry out its intended objectives.

AGENCY ACTIONS AND UNRESOLVED ISSUES

DOD concurs in the objectives of this report but concluded that actions have been or are being taken to carry out the intent of the recommendations and suggestions.

DOD's reply (see app. I) comments on each recommendation and suggestion individually. Pertinent DOD comments and GAO's evaluations have been incorporated into the report.

GAO recognizes and acknowledges that improvements have been and are being made in the areas of packaging. However, the primary issues remain unresolved and DOD can make significant additional improvements for concomitant savings.

MATTERS FOR CONSIDERATION BY THE CONGRESS

This report offers the Congress suggestions of how to achieve savings, conservatively estimated in the tens of millions of dollars, in the packaging and packing of military equipment and supplies. This is an area of expense that long has been overlooked, under the stresses of military urgency, and long has been in need of review and correction, as shown in these pages.

BEST DOCUMENT AVAILABLE

CHAPTER 1

INTRODUCTION

This report describes some of the conditions facing the Department of Defense (DOD), from about 1965 to the present that relate to packaging military supplies. The term "packaging," broadly stated, includes preservation, packaging (unit carton, bag, etc.), packing (exterior shipping containers), marking and identification, and cargo unitization (consolidation). In this report packaging is used generically to include packaging and packing.

At the outset of United States buildup in Vietnam in 1965, damage and loss of supplies became a major problem in logistics support, primarily because commercially packaged material could not withstand the rigors of rough multiple handling, outdoor storage in humid or wet weather, or the generally hostile environment.

To overcome this, level A packaging--protection against the most severe conditions known or anticipated--was soon specified for all Vietnam cargo. Virtually all procurement activities for military supplies came under this edict. Packing and consolidation of inventories on hand into exterior containers was done primarily by military depots. Procurement activities then began specifying in bids and contracts both level A interior packaging and level A exterior packing. Additional preservatives, wrappings, cushioning, and stronger interior containers and packing or consolidation into metal, wood, or plywood exterior containers increased packaging costs.

In May 1968 DOD issued instructions, supplemented by joint military regulations, setting out objectives and guidelines for packaging. The essence is stated in Military Standard 794B:

"Preservation methods and packaging design shall be of minimum cost consistent with adequate performance. The preservation and packaging methods selected shall insure protection of contract end items, spare parts, and kits against natural and induced environments. A prerequisite to selection of preservation and package design is the

analysis of environments to which the item will be subjected during its life cycle. Such analysis shall include, but not be limited to, item characteristics as related to need for protection, induced forces produced in transportation and handling, and climatic environments." (Under-scoring supplied.)

By 1969 almost all supply contracts called for level A packaging without regard to shipping destination. In addition, procurement activities began preparing their own packaging specifications, supplementing or altering those standard military specifications already in use. As the number of these increased, uniformity in packaging among military services decreased, much to the consternation of defense contractors. Currently, for example, there are hundreds of military specifications, methods, and sub-methods for packaging.

DOD categorized packaging protection into levels in terms of performance. The levels have been designated "A," "B," and "C" and are described briefly below. These levels apply to both interior packaging and exterior packaging.

Level A--the degree required for protection against the most severe conditions known or anticipated to be encountered during shipment, handling, and storage.

Level B--the degree required for protection under conditions known to be less severe than those requiring level A but more severe than those for which level C is adequate.

Level C--the degree required for protection under known favorable conditions during shipment, handling, and limited tenure of storage.

When we began this review in 1971, a number of collateral actions had evolved since 1965 which alleviated or improved packaging problems in Vietnam. For example, dock and storage facilities improved in Southeast Asia, boxcar-size containers became widely used in shipping supplies, and winding down of U.S. involvement reduced the quantities of supplies subject to strenuous wartime packaging criteria.

In addition, the early Vietnam experiences forced defense contractors to develop new packaging techniques, methods, procedures, and materials which were vast improvements over those existing in 1965. New automatic packaging equipment was developed which improved the quality of packaging at less cost. Many defense contractors who sell similar items to both military and commercial users have raised the quality of their commercial packaging to a level which meets military requirements. The cost for material supplied to military users in contractors' commercial packaging is usually less than that supplied in packaging specified by DOD buyers, although the quality of packaging specified may be no better than commercial.

During fiscal year 1971 DOD awarded contracts totaling \$34.5 billion, of which we estimate \$13.4 billion was for commodities which required packaging. We could develop no overall average cost for packaging; but, on the basis of industry comments and prior DOD estimates, packaging costs for these commodities could average as much as 10 percent of the value of the procurements.

CHAPTER 2

EXCESSIVE PACKAGING REQUIREMENTS

OF MILITARY SERVICES

DOD is spending millions of dollars a year for packaging beyond that necessary for adequate protection, or by requiring contractors to meet military specifications when their own commercial packaging is fully adequate. DOD managers do not know and rarely determine the suitability of commercial packaging and packing and continue to rely on military specifications which have become voluminous, repetitious, redundant, or not applicable.

Defense contractors state that Government packaging generally costs more than commercial and that commercial packaging meets Government needs for most material under conditions normally experienced by military users. When contractors are required to check all military specifications normally cited and to deviate from normal packaging practices, the results are higher material costs to the Government.

Some DOD activities are lowering packaging and packing standards and, increasingly, specifying commercial practices and are claiming savings of at least \$12.5 million a year. Additional savings of many millions of dollars a year are available by lowering packaging standards, consolidating and clarifying them, and using commercial packaging.

DOD Instruction 3100.14 established packaging policy guidelines for selecting the most economical packaging, but individual services have interpreted these guidelines in such ways that packaging specified is often excessive, uneconomical, and inconsistent. Services have independently altered or added specifications to bids and contracts without rescinding those which are superseded. Bidders and contractors must review all specifications or risk later problems for noncompliance.

Some military services continue to specify highest levels of packaging for material bought for stock, shipped and used within the continental United States (CONUS) and some overseas destinations, although other services now specify lower levels or commercial packaging under the same conditions. Reasons offered for specifying high levels were that services did not know the type of transportation used; conditions

encountered during shipment, handling, and storage; final destination; or the types of packaging material contractors have on hand.

The following tabulation summarizes, by activity, the fiscal year 1971 procurements reviewed.

DOD activity (note a)	Fiscal year	Number of items reviewed (note a)	Assigned level A packaging (note b)	
			Number	Percent
Defense Supply Agency (DSA):				
Defense Industrial Supply Center	1971	48	46	96
Defense Electronics Supply Center	-	-	-	^c 100
Defense General Supply Center	1971	14	12	86
Army:				
Mobility Equipment Command	1972	^d 100	15	15
Navy:				
Aviation Supply Office	1971	18	17	94
Electronic Supply Office	1971	55	50	91
Air Force:				
Warner Robins Air Materiel Area	1971	53	53	100
Sacramento Air Materiel Area	1971	51	51	100

^aSelected by statistical sampling.

^bDoes not include packing.

^cNo items were reviewed because the Center's policy requires the highest level of packaging for the items they manage.

^dRandom rather than statistical selection due to difficulties in securing a valid statistical universe.

Savings through reductions in packaging levels have already been claimed by DSA and the Army, as shown later. Their basic contention is that great savings are realizable by systematically and consistently using lowest practicable levels of packaging throughout DOD.

DEFENSE SUPPLY AGENCY GUIDELINES AND PRACTICES

In July 1971 DSA furnished its activities guidelines for selecting and applying levels of protection for procurements,

storage, and shipments. In general, the guidelines include:

- Level C, or commercial preservation packaging and packing, will be provided for items procured for stock except where the item characteristics or other special requirements, such as storage conditions in and shipments to Southeast Asia, require a higher level of protection. The additional protection will be determined and obtained economically at the time of procurement; otherwise, the depots will provide such protection at the time of distribution.
- Levels of packaging protection higher than level C or commercial practice for direct delivery to military customers at overseas destinations will be obtained at the time of procurement or otherwise directed through DSA depots for upgrading and transshipment.
- The minimum level of packaging protection, normally level C or commercial practice, will be assigned for direct delivery purchase to CONUS customers except for items which by their nature require higher levels of packaging.

Among three DSA inventory control points we reviewed, differences of policy and/or procedures existed as to the level of packaging which should be assigned to material bought or distributed to CONUS and overseas destinations other than Southeast Asia.

Defense Electronics Supply Center procedures call for level A packaging for items they manage. According to agency officials, electronic items require the highest level of protection because the period of storage and the eventual destination of the material are unknown. Agency officials believe their packaging requirements agree with DOD and DSA guidelines. It was their opinion, however, that some of their items could be packaged lower than level A.

Several of the examples shown in the exhibit (see pp. 31 to 37), which illustrate the increased cost associated with present packaging, were provided by manufacturers of electronic parts and components.

One of these responses, for example, stated:

"The difference in packaging costs varies with the product lines produced at this facility. We have used FSC 5935 material, electrical connectors, as a representative product line and find that commercial packaging represents an average of 0.64 percent of the selling price. A rather abbreviated survey indicates the cost of military packaging varies from 1.84 percent to 8.04 percent of the selling price. This wide variance is apparently due to the difference in packaging and packing level and special requirements imposed by the procuring activity. The most economical military packaging is three times as costly as standard commercial."

Of 16 electronic contractors, 13 contend their commercial packaging and packing are adequate to meet most military needs, including at least 6 months' storage. On the basis of these examples, there appear to be significant opportunities for using less expensive packaging and packing without jeopardizing safety of supplies.

In response to the July 1971 DSA guidelines, the Defense Industrial Supply Center revised its packaging on items bought for stock. The revised procedures, which became effective on August 18, 1971, were applicable only to procurements where the level of protection is assigned by a packaging specialist. Revised packaging requirements for automated stock procurements up to \$2,500 were to be implemented in June 1972. The revisions resulted in projecting annual savings of \$2.6 million. The action, however, is limited to downgrading packaging levels for only certain items although others bought for stock were packaged at a high level.

The projected savings were based on two factors-- mechanically identifying potential items for lower levels of protection reducing labor costs and assigning lower packaging levels saving an estimated 7 percent of the procurement cost.

Before the DSA guidelines were published, the Defense General Supply Center recognized that it was buying items with packaging levels higher than required for a peacetime mission. It concluded that higher levels resulted in higher procurement costs, delays in delivery, and decreases in the sources of supply. In May 1971 the Center notified DSA that,

because its current mission showed reduced overseas requirements and increased shipments to CONUS requisitioners, it would begin assigning lower levels of packaging on the basis of item peculiarities and storage and handling conditions. DSA approved this action in July 1971, and the Center projected annual savings of \$6.7 million on the basis of anticipated fiscal year 1972 shipments.

We examined selected fiscal years 1971 and 1972 procurements at the Defense General Supply Center and packaging levels had been downgraded as proposed.

During fiscal years 1970 and 1971, DSA auditors reviewed packaging costs for stock item procurements at several DSA inventory control points and concluded that savings of \$23.3 million could have been realized if procedures had been revised to provide lower packaging levels, when appropriate.

ARMY GUIDELINES AND PRACTICES

By December 1970 the Army had determined that 95 percent of Army Materiel Command items, managed by its seven subordinate commands, were procured for storage and distribution with level A packaging but that over 60 percent required only level C at the time of shipment.

All Materiel Command activities were instructed to immediately conform to the following policy:

- Material shipped to CONUS activities will be provided level C packaging and packing. For material identified for direct use, commercial practice¹ is acceptable.
- Material shipped to CONUS depots for storage and distribution will be provided level C packaging and packing consistent with issue experience.
- Material procured for immediate use by CONUS contractors, depot maintenance elements, or other local use need be packaged only in accordance with commercial practice.

¹Considered by the services as generally comparable to their level C.

--Material for overseas destinations for immediate use (other than for combat) and to be shipped by air will be provided level C protection.

--Material for overseas destinations (other than for combat) to be containerized at a CONUS depot for shipment will also be provided level C protection.

One of the command's objectives outlined in its Five Year Program Guidance for fiscal years 1972 to 1976 is to reduce the cost of military packaging at the time of procurement, storage, and shipment. In compliance with this objective, the Army analyzed shipments from its depots for fiscal year 1971 and compiled percentages of levels of packaging which should have been assigned to the items shipped. The percentages developed are to be used as guidance by inventory control points and depots for use in future procurements and depot shipments.

For selected fiscal year 1972 procurements reviewed at the Army Mobility Equipment Command--one of the seven subordinate commands for the Army Materiel Command--packaging levels were downgraded in accordance with the revised policy shown above. Of 100 procurements examined, we found 85 had been assigned either level C or commercial protection and the remainder level A.

For fiscal year 1972, the Army Materiel Command has projected savings of about \$3.2 million by downgrading levels of packaging and by installing packaging equipment.

A packaging official at Tobyhanna Army Depot, Pennsylvania, said that the Army not only lowered the packaging level from A to C, but installed automatic packaging equipment at eight other depots. The equipment performs the packaging function at four times the speed formerly attained. The new equipment, lower levels of protection, and reduced labor and material costs are projected to save about \$2.7 million annually.

Also, Letterkenny Army Depot, Chambersburg, Pennsylvania, projected annual savings of about \$510,000 by downgrading its packaging levels for repaired items. The projected savings, as reported, included lower levels of protection and reduced costs of labor and exterior pack. Although similar savings may exist at other Army depots, the extent had not been determined at the time of our review.

NAVY GUIDELINES AND PRACTICES

Navy policy continues to require level A packaging for procurement, storage, and shipment of aviation material. The Navy's practice has also required the highest level of protection for virtually all areas of packaging.

At the Navy's Aviation Supply Office and Electronics Supply Office, the packaging code for the highest level is assigned and included in their computer files when an item first enters the supply system. At both installations, officials stated that the packaging method must be determined when procurement is made and that the level of protection can be reduced at that time. Actually, the highest packaging level is assigned automatically and generally reviews are not made to determine whether adequate protection could be attained with a lower, less expensive level.

At the two installations, we were told that the highest level of protection was generally assigned because personnel did not know the conditions to be experienced during shipment, handling, and storage or the final destination of the supplies. Commercial packaging is not used because determinations are not made as to its adequacy. We consider the lack of these determinations the most critical.

DOD, in replying to our draft report, said the Navy uses level A packaging for stock replenishment because it cannot determine the using activity or the duration of storage. This position, however, is not fully supported by our review. At both Navy locations reviewed, management data is available which we believe could be used to determine the required level of packaging for depot shipments. Agency personnel should be able to estimate average storage time for each item by reviewing demand history and reasonably predict the destination and storage conditions for most items managed.

The Electronics Supply Office, for example, receives daily records of transactions on all types of receipts and issues for about 93 percent (dollar value) of the 119,000 items managed there. This is part of a Navy-wide inventory control system. The transactions are retained to show a complete history for 2 years. This information, however, is not used in any way toward determining appropriate packaging levels, although governing joint military regulations

appear to require such use: AR 700-15; NAVSUP PUB 470; AFR 71-6; MCO 4030.14D; and DSAR 4145.7; dated May 28, 1968.

For example, information obtained at two naval air rework facilities showed that, of all material delivered to them, over half was readily identified as having been issued and used locally.

One of the reasons given by Electronics Supply Office personnel for requiring level A was that they felt there was little, if any, cost difference. This is contrary to contractors' views as shown in the exhibit. These personnel also said they did not know what commercial practices were and military levels themselves were not clearly defined so level A was almost always required.

DOD said Navy's policy provides for level C packaging for items shipped directly to the using activity. At the Electronics Supply Office written procedures regarding items to be used immediately go one step further by waiving all military packaging requirements and provide instead for the use of suppliers' commercial packaging and packing. We reviewed items procured under the immediate-use criterion and, despite the written procedure, level A was generally assigned anyway.

In one case, an exception to the Electronics Supply Office's normal policy, a joint military review determined that a contractor's commercial packaging equaled or exceeded military level A requirements for many of his items. An agreement was then reached to accept the contractor's packaging--at no additional cost to the Government--although the contract continued to identify the packaging as military level A.

In another exceptional case, commercial packaging was specified because the contractor's proposed cost for military packaging was determined to be excessive. Although the Electronics Supply Office intended to have these items re-packaged to level A upon delivery from the contractor, a subsequent followup review at our request disclosed that the contractor's commercial packaging was satisfactory and met military level A requirements.

DSA, which is responsible for providing supplies and services common to the military services, provided for the selection and application of lower levels of protection in its policy guidelines of July 1971. DSA guidelines suggest that packaging requirements for the items it procures for the Navy could be reduced to level C or commercial practice, and the depots could upgrade the packaging, if necessary. The Navy does not concur with DSA's guidelines and continues to require level A packaging by contractors and DSA depots before shipping stock replenishment items.

DOD said items delivered to ships to fill allowances rather than for immediate use require level A packaging because the high humidity, heat, salt spray, and exhaust gases are extremely corrosive.

Although we did not go aboard ship to examine this rationale, we do not fully accept its validity, because (1) Navy personnel interviewed during the review did not use this rationale, (2) transaction history indicated that a relatively small percentage of total procurements was issued to fill ships allowances, and (3) we agree with DSA's policy that packaging should be obtained at a lower level and upgraded only when necessary.

We do not agree that blanket assignment of military level A packaging is justified, especially when most of the procured items are for stock replenishment.

AIR FORCE GUIDELINES AND PRACTICES

The Air Force adopted regulations in October 1967--Military Standard 834B (ASG), a joint Air Force-Navy publication--which provided packaging methods to be used by contractors and military activities to meet level A requirements. At both Air Force Air Materiel Areas visited, packaging codes for level A were automatically inserted in all purchase requests. Although it is possible to revise the level of packaging when requests are reviewed, the publication is so restrictive, we were told, it does not permit flexibility for reducing levels of packaging even if information available shows that lower levels would be adequate.

In responding to the draft report, DOD said the purpose of Military Standard 834B (ASG) is to obtain contractor evaluations of what level A packaging should be for new or modified items and the publication in no way requires the use of any level of packaging. Air Force activities, however, have interpreted the publication as requiring level A.

We examined randomly selected procurements awarded in fiscal year 1971 at two of five Air Force Logistics Command Air Materiel Areas. All the items reviewed received level A packaging and, as such, were considered to be in compliance with the above directive. The following tabulation shows the universe of items reviewed at these activities.

<u>Air Materiel Area</u>	<u>Universe</u>		<u>Items reviewed</u>	
	<u>Number of items</u>	<u>Value</u>	<u>Total</u>	<u>Value</u>
Warner Robins	17,247	\$101,846,512	53	\$20,117,831
Sacramento	5,456	10,220,500	51	2,262,000

DOD said an analysis of the 104 items mentioned above indicated that level A packaging was appropriate because they were procured for long-term storage and indeterminate use. This statement was not consistent with our findings at Warner Robins, and only partially consistent at Sacramento--for long-term storage--but for the wrong reasons.

Most of the items reviewed at Warner Robins were relatively low-unit cost, fast-turnover (commonly called economic order quantity (EOQ)) items. Fiscal year 1971-72

procurement guidance for these items at Warner Robins dictated that, if annual demands were less than \$1,000, a 6- to 12-month supply would be purchased and that, if annual demands were greater than \$1,000, only a 3- to 6-month supply would be purchased.

Warner Robins' total fiscal year 1971 procurement forecast of EOQ items at December 31, 1970, showed 6- and 3-month procurements, as follows:

<u>Supply period</u>	<u>Number of items</u>	<u>Percent</u>	<u>Dollar value</u>	<u>Percent</u>
6 to 12 months	4,606	41	\$ 2.4 million	3
3 to 6 months	<u>6,701</u>	<u>59</u>	<u>69.2</u>	<u>97</u>
Total	<u>11,307</u>	<u>100</u>	<u>\$71.6 million</u>	<u>100</u>

A summary of receipts and issues of the 53 items during 1971 showed these items turned over in inventory rapidly; 823 shipments received totaled 173,402 units and 3,404 shipments to customers totaled 179,867 units.

Officials at Warner Robins stated that packaging levels could be reduced for most nonreparable items if the shipment, handling, and storage conditions were favorable and the items were used within 180 days after receipt from contractors. The 53 items reviewed at Warner Robins consisted of 31 non-reparable and 22 reparable items categorized collectively as initial and replenishment spare parts. These officials stated that packaging is restricted to the highest level because information on ultimate destination, shipment, handling, and length of storage is not known.

In our opinion, most information of this kind can be obtained from available records. Transaction history files, similar to those described at the Electronics Supply Office, and other item management data are also maintained at the Air Materiel Areas. The Air Materiel Areas are aware of the deployment of the aircraft they support; therefore, they can predict on the basis of this data and past use where the material will be stored, what portion will be stored, what portion will have issues to locations with favorable storage conditions (CONUS in particular), and the period of time the items will be in storage.

At Sacramento, for example, where the items reviewed were all EOQ items, we made a limited followup review and found this type of information available.

1. Of 10 aircraft systems supported by Sacramento, 89 percent of the aircraft as of January 3, 1973, were stationed in CONUS and 11 percent overseas.

2. On a gross-dollar basis, about one-half of the material goes to support the 10 aircraft systems and the other half is for other material.

3. For the items originally reviewed at Sacramento, we obtained the following information on all issues during the 12 months ended February 17, 1973.

<u>Shipped to</u>	<u>Number of units</u>	<u>Percent</u>
CONUS	5,286	83
Local maintenance	774	12
Overseas	<u>321</u>	<u>5</u>
Total	<u>6,381</u>	<u>100</u>

This data is readily available at all five Air Force Logistics Command Air Materiel Areas, and specific destinations are readily identifiable.

DOD's statement that material was purchased for long-term storage appears to be correct at Sacramento. However, under EOQ concepts and the austere procurement and funding policies within DOD, it appeared this was a problem relating more to determining procurement quantities than to packaging practices.

Officials at Sacramento considered the additional cost of level A packaging to be very small, because, even though level A is specified, the actual packaging is near commercial. DOD said for some items there was no difference between levels A and C packaging and that level B or level C exterior packaging was used for most of the items reviewed.

We do not disagree that, under current Air Force criteria which prescribe a number of different methods within level A, the difference between levels A and C or between level A and commercial can be minimal. However, on the basis

of contractors' comments (see exhibit, pp. 31 to 37), the cost difference can be significant, and this touches on the more important points which this report addresses.

1. Commercial packaging for much of the material furnished is available at no additional cost to the Government, whereas inclusion of military specifications in contracts adds to the Government's cost anytime contractors are required to deviate from their normal packaging practices.
2. The potential that commercial packaging meets or even exceeds military specifications.
3. General lack of knowledge at all locations visited as to whether commercial packaging meets military requirements.
4. Inconsistencies of packaging policies among the various DOD activities.

Regarding packaging and packing of reparable items--generally larger and more expensive than EOQ items--significant opportunities for savings are illustrated in the following example.¹

The Air Force, in April 1971, contracted for the repair and overhaul of two types of generators at a unit repair cost of about \$2,500 to \$2,800. Identical level A packaging was designated for both generators, costing an additional \$289 each. Since the generators were designed for outdoor operation, and in and of themselves, were to be virtually indestructible (see figures 1 and 2), lower packaging should have been specified. Level C packaging, which could have been used in the contract, would have cost about \$120 for each generator. (See figures 3 and 4.) As of March 1, 1973, 162 generators had been delivered to Sacramento, all in level A packaging at a cost of almost \$47,000--about \$28,000 more than the cost of Level C.

¹The items used in this example were observed in our brief followup review at Sacramento but were not among the items originally selected for review.

We learned in our followup at Sacramento that the depot repairs some of these generators from time to time. On these repaired generators, the depot uses its own method of packaging namely open-framed crates. According to the depot, the open crate is desirable to allow stacking the generators while in storage. The depot's method is less elaborate than that required by level C. (See figure 5.)

On the basis of the design specifications, the generators should have needed no special packaging. Sacramento personnel generally concurred. They also agreed that historical shipping data is available which, if used, would enable managers to package end items according to need.

A major portion of material controlled and procured by Warner Robins and Sacramento, in our opinion, could have been packaged at less cost and without degradation of material safety, had available data been analyzed and a determination been made as to the adequacy of commercial packaging.

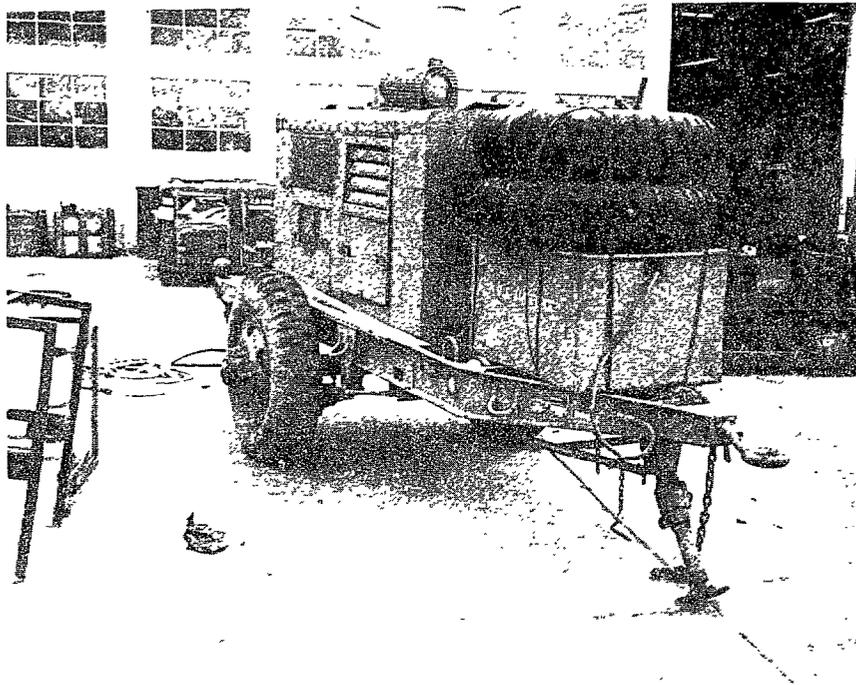


Figure 1.
MB-19 generator mounted on wheels for mobility. Although this trailer is not standard for the generator, it illustrates its rugged design.

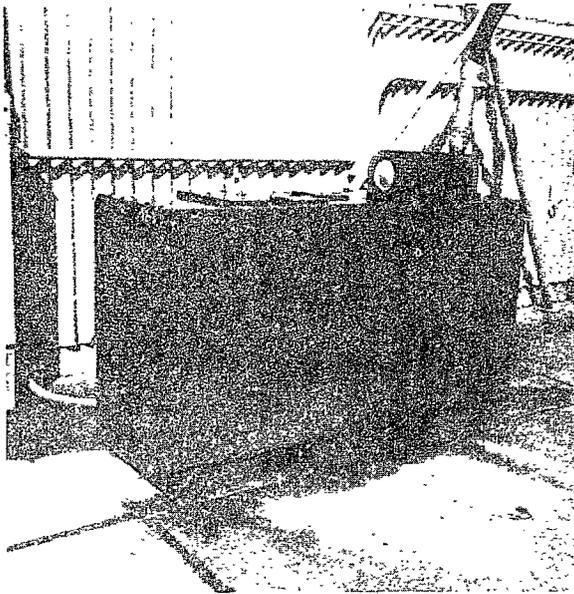


Figure 2.

MB-18 generator in stationary outdoor position and operating as emergency power source.

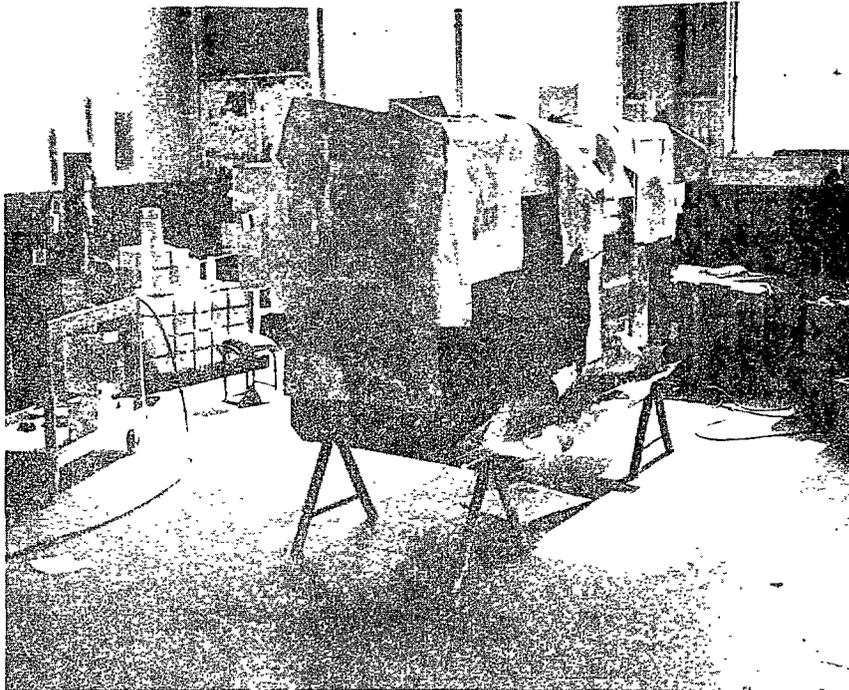


Figure 3.

MB-19 generator after overhaul and undergoing level A preservation and packaging.

Note:

Level A for both MB-18 and 19 requires a wood base with top and sides completely covered with pasteboard and strapped to the base, then completely enclosed in a wooden container. (Figure 4)
Cost: \$289. The level C method is identical, except for eliminating the wood sides and top.
Cost: about \$120.

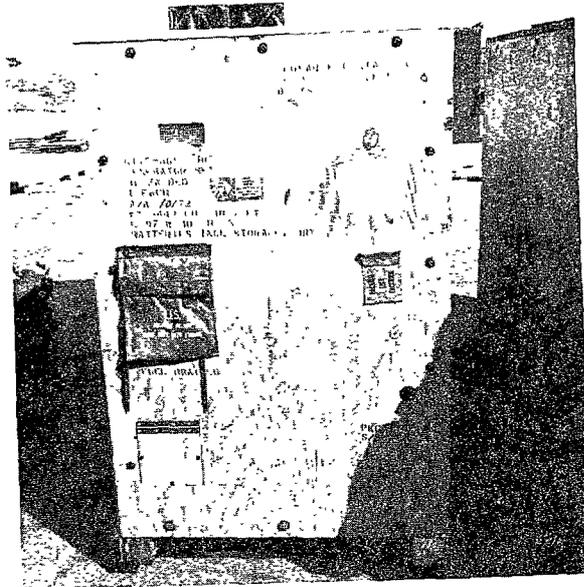


Figure 4.
MB-18 generator packaged level A and ready for shipment. Destination--Louisiana.

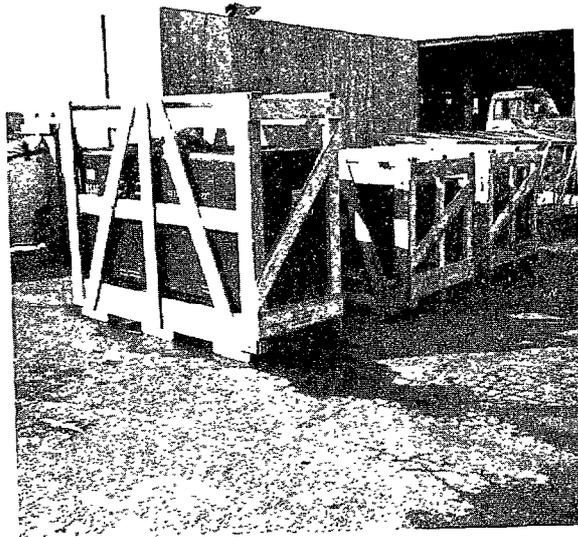


Figure 5.
MB-18 generator repaired and crated by Sacramento.
Note: This method is less elaborate than level C specifications.

ADDITIONAL DOD COMMENTS AND OUR EVALUATION

DOD's reply suggested that the draft report may have placed more emphasis on initial acquisition costs than on total ownership costs and cited as an example the use of reusable containers to reduce packaging costs and simultaneously reduce solid waste.

We recognize that reusable packing containers offer potential savings. For example, the Air Force has used this concept for some time, which it calls "fast pack," and has claimed substantial savings through several uses of the same containers and through reduced labor costs. Different types of material can be packed and shipped in these containers with a high degree of safety.

DOD stated that reusable containers are now available to all Federal agencies. There are 25 standard designs having features similar to fast pack.

We point out, however, that innovations in packing methods and designs, such as fast pack, reduce the need for high levels of individual item packaging and further support the contention that commercial packaging in many instances is fully adequate.

The draft report had suggested that DOD establish a focal point to develop and monitor specifications for packaging to clarify, consolidate, and standardize them to promote consistency among all defense buying activities.

DOD replied that the U.S. Army Materiel Command Packaging, Storage, and Containerization Center at the Tobyhanna Army Depot has been DOD's focal point for the Defense Standardization Program for packaging since July 1, 1963. According to DOD, 195 packaging and packing documents have been canceled or consolidated. It was also during this period, however, in which we found extensive proliferation of specifications which this report also addresses.

DOD said the Center is presently developing a proposed military standard which will permit much greater uniformity in selecting and applying packaging data within DOD and contractor plants. This action appears to be very much in line with the intent of our original suggestion. However, the

extent of proliferation of specifications despite the Center's responsibility to monitor them indicates it may lack the necessary authority to carry out its objectives. DOD should closely monitor the progress made by the Center and should reaffirm its authority to direct and monitor DOD's packaging program.

DOD's reply included results of a survey by the Defense Contract Administration Services made during November 1972, which showed that about half of the procurements specified either level C or commercial packaging. The survey results, we believe, are not directly pertinent to matters discussed in this report because (1) Defense Contract Administration Services is generally involved only with negotiated contracts totaling \$100,000 or more, (2) the contracts involved for most procurements addressed in this report are less than \$100,000, repetitive in nature, and are generally advertised, competitive awards, and (3) the survey results included in DOD's reply do not identify procurements initiated by Army and DSA activities--already acknowledged as having lowered their packaging standards--or those initiated by Navy and Air Force activities--who have stated their policy continues to specify higher levels of packaging.

CHAPTER 3

INDUSTRY REACTIONS TO DEFENSE PACKAGING

We obtained industry's views and comments on defense packaging practices by sending questionnaires to 178 defense contractors throughout the United States. They generally agreed that:

- There are significant differences between packaging provided commercial orders and that provided military orders for similar items.
- Costs of packaging military orders are greater, often much greater, than that of comparable commercial sales.
- Packaging used in commercial sales is adequate to provide reasonable protection for military goods within the United States.

There were many who said they felt that Government packaging specifications are confusing, complicated, repetitive, and voluminous.

Also, smaller companies often have to contract with packaging and packing specialists for their military orders because they do not have the personnel, facilities, or supplies to handle the special military requirements.

RESPONSE TO QUESTIONNAIRES

Of the contractors queried, 89, or 50 percent, responded and many added comments highly critical of DOD's manner of doing business. Following are the questions asked and typical responses. Additional replies are incorporated in the exhibit, beginning on page 31.

Is there a significant difference between packaging and packing provided commercial orders with that provided military orders for similar items?

Seventy percent said "yes."

"The only significant difference in the protection provided by our standard commercial packaging and that

required on military contracts appears to be storage life. Our commercial package provides adequate protection for delivery to the customer and storage under reasonable warehouse conditions for a 6-8 month period. The requirements of military packaging provide a nearly unlimited shelf life under the same conditions."

Are costs for packaging and packing of military sales greater or less than those for comparable commercial sales?

Eighty-three percent said military packaging costs are greater.

"On off the shelf (stock items) commercial packaging must be removed and then the item repackaged and repacked to military specifications. Costs of unpackaging the commercial pack plus the costs of repackaging and repacking to military specifications are added costs."

* * * * *

"When a company is required to read and interpret 18 pages of a Solicitation, all specified specifications, all of the specifications referenced in the specified specifications, plus all the specified or implied certifications, in order to prepare an Offer to the U.S. Government for an Award of 36,720 pounds of plates, there must be wasted effort and dollars for both our company and the Government. If our commercial customers adopted such practices, the cost of our products would become prohibitive."

Can you provide examples of differences in packaging costs (in dollars or percentages) for similar items sold to military versus commercial sources?

The increased cost for military packaging covered a broad range. Percentage differences cited were: 4--10--15--20--25--50--60 and higher.

"There is very little difference between Government Level C/C packaging and packing (P&P) and our standard commercial packaging and packing. On a typical fragile unit for example, the following standard costs would apply.

Standard commercial	\$3.73
C/C	3.95
A/B or A/C (Method 11B)	5.05
A/A (Method 11B)	5.10"

* * * * *

"We offer our standard commercial and standard export at no extra charge. We charge 10% of value of order for level A/A requirements."

Would the packaging and packing used for your commercial sales be adequate to provide reasonable protection during shipment, handling, and storage if used for items shipped to military services within the United States? (Assume 6-month storage)

Ninety-four percent of the contractors who had both military and commercial sales said their commercial packaging was adequate under the above circumstances.

"Standard commercial packaging as specified by this division is designed to protect the item for shipment to a central distributor, possible re-shipment to a service station and storage until delivery to the end user. We expect our distribution network to maintain a 90-120 day stock level at all times so we anticipate 6-8 months storage under normal supply and re-procurement practices."

Are Government packaging and packing specifications in contracts generally clear and easy to follow?

"I am delighted someone is checking into this because the government could save a considerable sum of money by overhauling packaging

specs. The specs seem to multiply like coat hangers in a closet and there is layer upon layer of them. Just take the first two digits of a code from MIL-STD-726 as an example. A "2E" for example will lead to MIL-P-116 which will lead to MIL-B-117 which will lead to MIL-B-121 and so on ad nauseum."

* * * * *

"One area of packaging and packing which creates additional costs for the contractor is the proliferation of specifications ***. In 1966 we conducted a survey and found we were working with 43 different specifications. A similar survey in 1969 indicated the number had increased to 75 with no appreciable difference in product lines."

Are all or part of your packaging and packing contracted to a private firm? If so, is this practice related in any way to special packaging and packing requirements of the Government?

Twenty-three contractors said their contracting was related to special requirements of the Government.

"All military packaging and packing is contracted to a packaging firm while commercial packaging and packing is done at our own facility. Specifications on materials for military packaging and special equipment required for military packaging and testing make costs prohibitive to do military packaging and packing in our own facility."

These responses clearly illustrate (1) that defense contractors have become very sensitive and concerned about DOD's packaging practices and (2) that, in many cases, excessive packaging, or the inclusion of military specifications, increased the Government's price.

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

Packaging policies need to be revised throughout DOD. Guidelines are not clear and various military activities applied guidelines inconsistently, resulting in an increasing number of specifications which are repetitious or not applicable. DOD activities lack knowledge as to whether commercial packaging meets military requirements, and managers do not routinely determine the adequacy of such packaging.

Commercial packaging for much of the material bought by DOD is offered at no additional cost to the Government. Inclusion of military specifications, on the other hand, adds to the Government's cost anytime contractors have to deviate from normal practices, even when the grade of packaging actually received is no better than commercial. Although we are unable to determine the amount unnecessarily incurred, we believe costs for packaging can be reduced by millions of dollars a year.

DOD stated that actions have been or are being taken which will achieve the needed improvements addressed in this report.

The Army and some DSA activities have revised their policies, reducing packaging to level C, and are obtaining commercial packaging for material stored for limited periods and then distributed to CONUS and certain overseas activities. Savings of several million dollars a year are being claimed as a result. However, the Navy, Air Force, and Defense Electronics Supply Center continue to specify very high levels of packaging, relying heavily on packaging codes assigned when material first enters their respective supply systems. The services and DOD justify high levels of packaging on the basis of long-term storage and indeterminate use. These justifications, in our opinion, are not valid because information about length of storage and ultimate use is available but is not being used.

We believe that an analysis of storage, transportation, and usage information by inventory managers and packaging technicians, together with an evaluation by buying activities

of commercial packaging and packing offered by bidders and contractors, will provide the basis for making accurate judgments as to the packaging necessary for adequate protection at minimum costs.

Recommendations

In view of the savings available in the packaging area, we recommend that the Secretary of Defense see that actions are taken to

- discontinue blanket assignment of level A packaging;
- determine the adequacy of commercial packaging for military requirements;
- make greater use of commercial packaging when it meets minimum Government requirements; and
- closely monitor the progress of the U.S. Army Materiel Command Packaging, Storage, and Containerization Center--DOD's focal point for developing and monitoring the packaging program--and reaffirm its authority to carry out its intended objectives to clarify, consolidate, and standardize specifications to promote consistency among all defense buying activities.

CHAPTER 5

SCOPE OF REVIEW

From November 1971 through July 1972, we reviewed instructions; examined records, documents, and internal audit reports; and interviewed officials at the following locations:

Army Materiel Command Packaging, Storage, and Containerization Center
Tobyhanna Army Depot, Pennsylvania

Army Mobility Equipment Command
St. Louis, Missouri

Navy Aviation Supply Office
Philadelphia, Pennsylvania

Navy Electronics Supply Office
Great Lakes, Illinois

Sacramento Air Materiel Area
McClellan Air Force Base, California

Warner Robins Air Materiel Area
Robins Air Force Base, Georgia

Defense Electronics Supply Center
Dayton, Ohio

Defense General Supply Center
Richmond, Virginia

Defense Industrial Supply Center
Philadelphia, Pennsylvania

To obtain additional information and viewpoints on military preservation, packaging, packing, specifications, and related requirements, we sent questionnaires to 178 defense contractors and interviewed officials at three contractors' plantsites. We also visited the Defense Depot, Mechanicsburg, Pennsylvania, and the Philadelphia Naval Shipyard to review the need for, and uses made of, identification markings on steel products.

CONTRACTORS' COMMENTS ON QUESTIONSABOUT DOD PACKAGING PRACTICES

Is there a significant difference between packaging and packing provided commercial orders with that provided military orders for similar items?

Seventy percent said "yes."

"Commercial packaging/packing is provided in minimum materials that provide necessary physical and, when necessary, environmental protection. Military orders in many cases, we feel require packaging materials far in excess of that necessary to provide adequate protection in shipment and storage. Despite the testing and research we put into our commercial packaging, the military continues to specify packaging materials and methods that we feel are unnecessary".

* * * * *

"Presently, the only difference in packaging and packing between commercial and military semiconductors is that of labeling and its cost. However, the electronic industry has recently been directed by the Defense Electronic Supply Center to package all semiconductors that they buy in a barrier material per MIL-B-81705A. * * *. The minimum packaging cost increase for packaged semiconductors using MIL-B-81705A will exceed 400% of the cost for commercial items."

Are costs for packaging and packing of military sales greater or less than those for comparable commercial sales?

Eighty-three percent said military packaging costs are greater.

"The packaging we have experienced with military sales varies considerably from one contract to another in general. The packaging cost for the military is eight to ten times the cost of our commercial packaging."

* * * * *

"We can cite example after example of high packaging costs and usually call these to contract officers attention or offer a different 'code' that would be lower cost. The worst situations are on low quantity orders with level A/A requirements. Sometimes packaging costs exceed product costs."

* * * * *

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"In general, we feel that many of the requirements are too strict and that the Government should investigate this area with an eye towards reducing costs. One of the easiest ways to cut costs in our particular case, would be to increase the unit quantity and also increase the intermediate quantity. Or, accept more frequently, standard commercial packaging which we provide at no additional cost."

* * * * *

"If military customers accept the commercial pack for domestic shipments, there isn't an additional charge. If military packaging is specified, there is an additional charge for this service."

* * * * *

"The quantity per unit package specified by the agencies is another area we feel should be explored. We find many requirements for one and two cent items in individual packages costing four and five cents. In developing our commercial packages equal consideration is given to the most economical unit package quantity as is the protection required. We use basically the same procedures and factors in arriving at the quantity per package as the various DOD agencies. It is a bit difficult for us to accept the logic behind a one per pack requirement for an item procured in quantities of thousands and issued by the activity at a rate of hundreds per month."

* * * * *

"The indirect corporate costs are greater to process and ship military orders due to the following:

- A. A specialized staff of legal, sales, accounting, metallurgical, operating and transportation personnel must be trained and maintained to handle Government orders.
- B. Additional manhours must be expended by both the special and normal staffs to secure, review, file, update and refile Government specifications.
- C. Additional manhours are expended by the special staff to review, price and prepare "Offers" to Government "Solicitations".
- D. Additional manhours must be expended by both the special and normal staffs to process, follow and expedite Government orders.
- E. Additional manhours must be expended by the special staff to prepare the certifications and documents required by Government contracts.

- F. Additional operating and clerical costs are incurred to obtain, file, fill out and apply standard and/or special Government labels and tags.
- G. Unbudgeted travel expenses are incurred by the special staff to meet with Government representatives to debate and appeal local interpretations of Government specifications and/or the requirements of Government contracts.
- H. Additional clerical costs are incurred to duplicate and maintain records pertinent to Government orders, and to file and retain these records beyond the normal record retention period required for commercial records. These are just some of the intangible costs that are related to Government orders and that are not normally incurred in our day to day commercial business."

Can you provide examples of differences in packaging costs (in dollars or percentages) for similar items sold to military versus commercial sources?

The increased cost for military packaging covered a broad range. Percentage differences cited were: 4--10--15--20--25--50--60 and higher.

"Preservation Packaging when required increases costs over similar items of commercial pack which at times is more than the cost of the part.

E.G. A machine screw individually packaged and preserved to contractual requirements could exceed the normal selling price.

E.G. Preservation and packaging costs for a machine screw (1 per pack) could be approximately 400% of Government cost for the part."

* * * * *

"The greatest difference and seemingly the most wasteful is packaging of common hardware items such as nuts, bolts and washers. For example, the procuring agency will buy a quantity of washers at \$.01 to .05 each with packaging level A and a quantity of one per package. Considering the time and labor involved with packaging each washer in a separate package and applying a MIL-STD-129 label, we must charge \$.10 each. The shelf life of such an item in the bulk without level A packaging would be indefinite."

* * * * *

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"Comparable costs using a base of \$.06 each for commercial packaging are:

Method III (Near Commercial)	\$.12
Method IC-1	.21
Method IC-2	.25
Method IA-3	.21
Method IA-8	.28
Method IA-14	.43
Method IA-15	.34

Though not used too often, any Method II will run from \$.40 to \$.85 each. The above are averages. Requirements for specific types, quantities, and sizes of packing materials must be considered."

* * * * *

"Part Number 924339-3 Capacitor-Cont. N00383-72V-T969, for a total procurement of 1056, requires (1) per unit package. Commercial would be at least (10). Even at (10) this would be a substantial savings, 106 packages vs. 1056."

Would the packaging and packing used for your commercial sales be adequate to provide reasonable protection during shipment, handling, and storage if used for items shipped to military services within the United States? (Assume 6-month storage)

Ninety-four percent of the contractors who had both military and commercial sales said their commercial packaging was adequate under the above circumstances.

"Our standard commercial packaging and packing adequately provides protection against normal transportation environments encountered during shipment, handling and storage. Generally, any item in storage six (6) months or less would require only minimum protection against corrosion."

Are Government packaging and packing specifications in contracts generally clear and easy to follow?

"Government packaging specifications are definitely not clear and easy to follow; and only someone with a complete updated file of all Government booklets and pamphlets relevant to packing, packaging, preservation levels, etc., can hope to even begin to cope with the lengthy sets of code numbers and letters that call out Defense Department packaging. It is my considered opinion based on eight years of Government Contracts Administration * * * that the Government could realize a very considerable cost savings

each year by converting to standard commercial packaging. Our product lines are not of a fragile nature which require the one per package requirement which invariably comes in on * * * bid sets and purchase orders * * * . It would require a wealth of documentation to show exact instances of the cost differential between commercial packaging and Defense Department special packaging requirements. I can categorically state that on the average you could save between 5¢ to 10% each on your unit costs by converting to commercial packaging."

* * * * *

"Attached is a prime example where packaging instructions are difficult to establish.

'Level C packaging shall be method IC-2 using materials specified for level A in steps 1, 2 and 4 and enclosing the item(s) in a snug fitting heat sealed bag or wrap fabricated from barrier material conforming to L-P-378 or type B-2 or B-3, class 1, grade A, B or C of MIL-B-13239 or type 11 or 111 of MIL-F-33191.'

We are using our best judgment in selecting proper materials. * * *. Estimated cost for packaging over standard commercial-\$3.00."

* * * * *

"In maybe 95% of DESC sales the packing specs are reasonable, generally Navy Electronics Supply Office specs are reasonable. We often find that when a smaller organization is ordering, the packing will be unnecessarily complicated, overspecified. Example: A certain type tube to be shipped to a west coast depot where it is installed in equipment, three or four hundred per year from all suppliers. Packing specs require use of Expanded Polystyrene encapsulation. We spend \$1,500 tooling cost, around \$3.00 for each pair of cushions to ship 200 tubes. This job could have been done by a 25¢ piece of wadding. If we were sole source we would object to such expensive packing and would recommend an alternative but when we are on competitive bidding and we want the business we must bid as specified."

* * * * *

"The packaging and packing for an item being sold to the military is fairly easy to find in the contract: the problem is finding all the information within the contract that is necessary to be marked on the packages and the pack. In some cases, the quote may include information that is not included in the formal purchase order, but the quote is made part of the formal order; also, a data package may be included. One may go through quite a few documents before

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finding all of the requirements of the contract. Our company deals with all branches of the military, and they all have their own way of transmitting packaging instructions with the contract."

* * * * *

"It appears to us that 1) each buyer selects his own packaging instructions and 2) does not understand them as well as we think we do. The best specific answer to this question is to take material in one hand and the welter of packaging regulations in another. Decide how to package the item - then ask the same buyers, quality assurance representatives, and agency packaging experts. The regulations are generally obfuscated and extremely difficult to follow."

* * * * *

"The packaging and packing portion of the contracts are "generally" clear and requirements can be met. Some buying agencies, ESO in particular, ask for packaging and packing that is quite different than our standard processes. Each branch of the Service has specifications peculiar to them. We believe that every attempt should be made to reduce the large number of packaging related specifications and adopt standard requirements for all."

* * * * *

"Lot of packing specifications are out dated. Prints used are as far back as 1945."

* * * * *

"We pack a lot of modules for DOD. The code for like parts are quite often different.

ex: 3G11000BGxD3YYYYAYYYY
2M1100DABBBXXY10AAQAD

I guess it is up to the person that codes the part."

"The fact that key traffic personnel are certified in the packaging Design Course 8BF16 (JT) from the Training Center located at the Aberdeen Proving Grounds, enables us to understand, clearly, the packaging and packing specifications spelled out and or coded in Government Contracts."

* * * * *

"Experienced packaging engineers can generally interpret the Government specifications readily. More uniform requirements among the various agencies and services within the Department of Defense is needed. Some specifications (MIL-STD-129) could be simplified to improve clarity. Many MIL-STD-726 codes for spare

parts contain errors in container, wraps, etc. In spare parts packaging, the Packaging Requirements Code (PRC) for the same item is often changed from one order to the next."

* * * * *

"Government specifications are easy to follow, however, their requirements in many cases, are far in excess of that necessary for adequate packaging."

* * * * *

"Some efforts to properly code the packaging and packing requirements are not practical due to the lack of being familiar with the item being shipped. In some cases, obsolete specs are coded. In some cases, the commodity spec is not used when it should be. When this conflict occurs, permission to deviate must be obtained which causes delays when bidding and delivery."

Are all or part of your packaging and packing contracted to a private firm? If so, is this practice related in any way to special packaging and packing requirements of the Government?

Twenty-three contractors said their contracting was related to special Government requirements.

"All Government orders specifying handling IAW military specifications are forwarded to outside packing firms * * *. As a result of our having to 'farm-out' this work deliveries on Government orders is normally about thirty (30) days more than when we are permitted to utilize our Standard Commercial or Standard Export preservation, packing packaging and marking which is accomplished in our own plant."

* * * * *

"Packaging and packing firms are employed for some of our military contracts because it is impractical to maintain a stock of the variety of materials called for in the specifications. We also sub-contract the packaging on all high-quantity orders because personnel cannot be maintained to package for hours a \$300 order for 500 gaskets, etc. The highest single unit packaging and packing costs are consistently related to all ARMY contracts who seem to extremely over-package all items with exotic materials."



ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301

19 JAN 1973

INSTALLATIONS AND LOGISTICS

Mr. Werner Grosshans
Assistant Director-in-Charge
Logistics and Communications Division
United States General Accounting Office
Washington, D. C. 20548

Dear Mr. Grosshans:

This is in response to your letter of November 9, 1972, to the Secretary of Defense which forwarded copies of your draft report, "Savings Attainable by Revising Packaging and Packing Practices in the Department of Defense" (OSD Case No. 3540).

The report states that the Department of Defense spends millions of dollars each year for packaging and packing it does not need and by requiring bidders and contractors to wade through voluminous standards, specifications, and guidelines which are repetitious, redundant, or not applicable. It also states that contractors are confronted by inconsistent methods of packaging and packing specified by different defense buyers.

In view of the vast savings considered to be available to the Department of Defense by reducing packaging costs, the report recommends that the Secretary of Defense take action to discontinue blanket assignment of level A packaging and packing, reduce packaging and packing to the lowest reasonable levels, and designate a focal point to develop and monitor packaging and packing specifications. The report also suggests that the Department of Defense obtain greater assistance in this area from its contractors.

We concur in the objectives of the report and consider that actions have been taken or are part of an on-going program to carry out the intent of these recommendations and suggestions. Specific comments follow.

1. Recommendation: Discontinue the blanket assignment of level A packaging and packing.

Comment: DoD Instruction 4100.14, "Uniform Preservation-Packaging, Packing and Marking of Items of Supply," dated October 19, 1967, states "all supplies, materials, and equipment shall be afforded the degree of preservation-packaging and packing required to prevent deterioration and damage during shipment, handling, and storage at the lowest overall cost to the DoD" (par. VI. A. 1.). The joint regulation implementing this instruction (AR 700-15, etc.) contains an appendix which may be used in selecting levels of protection based upon the conditions known or expected to be encountered during the life cycle of the item concerned.

Although the term packaging may be used in a generic sense to include preservation, packaging, packing, marking, and cargo unitization, our comments will separate these actions into the areas of packaging and packing since policies for each are sometimes different. Packaging will be used to include the application of such protective measures as cleaning, preservation, wrapping, cushioning, and interior containers, and packing will be used in referring to the application and marking of exterior shipping containers.

In discussing the "blanket assignment" of level A packaging and packing the report indicates that the Defense Supply Agency and the Army in 1971 each decreased the levels specified for many items but that the Air Force and Navy continue to specify very high levels of packaging and packing (pp. 2-3).

With respect to Navy guidelines and practices the report states (page 14) that Navy policy requires level A packaging for procurement, storage, and shipment of aviation material and the Navy's practice has also required the highest level of protection for virtually all areas of packaging. It then cites the Navy's Aviation Supply Office and Electronics Supply Office as examples and states that management data are available at both locations to determine the required level of packaging for depot shipments and that reviews are generally not made to determine whether adequate protection could be attained with a lower, less expensive level.

The Navy uses level A packaging when material is procured for system stock replenishment since the using activity (ship or shore) or the length of time before its actual use cannot be determined. The items delivered to ships to fill allowances (which comprise the vast majority) rather than for immediate use require level A packaging because of the high humidity, heat, salt spray, and ship's exhaust gases which combine to provide an extremely corrosive atmosphere. Since it is impossible to determine

APPENDIX I

accurately which items will ultimately move from depot storage to ship-board storage, level A packaging is provided for all items which are not shipped directly to the using activity. In the latter case level C packaging is used.

Depot issued allowance items are procured with level C packing when they are normally issued in less than case quantities. Otherwise, the level of packing specified depends upon the transportation, handling, and storage conditions known or anticipated.

In commenting on Air Force guidelines and practices the report states (page 15) that in 1967 the Air Force adopted Military Standard 834B (ASG) which provides that packaging methods to be used by contractors and military activities should be level A. It then indicates that an examination of 104 items in randomly selected procurements awarded in fiscal year 1971 at Warner Robins and Sacramento Air Materiel Areas showed that all the items reviewed received level A packaging.

The purpose of Military Standard 834B (ASG), which is a joint Air Force - Navy publication, is to obtain from contractors their evaluation of what level A packaging and packing should be for new or modified items when this information is not currently available in the Department concerned. It is considered that lower levels of protection can be established on the basis of contractors' submissions. The Standard in no way requires the use of any level of packaging or packing.

An analysis of the 104 items mentioned above indicates that the use of level A packaging was appropriate for these items which were procured for long term storage and indeterminate use. For some of these items there was no difference between level A and level C packaging (e. g. , when the prescribed packaging consists of a coat of paint) and the designation "level A" was used to prevent re-work where the items were shipped to a location for which this level is required. For other items the packaging was also the exterior shipping container, and level A packaging avoided the use of an additional pack. For the remainder of these items, which comprised the majority, level B or level C packing was used.

2. Recommendation: Reduce packaging and packing to lowest reasonable levels, generally level C or standard commercial, if it meets minimum Government requirements.

Comment: Previous comments have addressed the use of lowest reasonable levels. However, with respect to the use of commercial

packaging and packing it should be noted that the term "standard commercial" may be misleading in that it implies the application of uniform methods by all or most contractors. Our experience indicates the use of several different methods among contractors and that one contractor sometimes will employ different methods for a given item depending upon the number shipped, destination, mode of transportation, and other factors.

Commercial packaging and packing may be, but is not necessarily, the equivalent of level C. Sometimes it is lower, although on occasion it may be higher. When contractors' packaging and packing procedures and materials are found to meet or exceed minimum DoD requirements they are made part of the contract.

Although numerous actions have been taken to reduce the level of packaging and packing, as indicated in the report, favorable conditions which must be known to exist during shipment, handling, and storage before level C may be specified, are lacking in many cases involving DoD items.

It appears that the report may have placed more emphasis on initial acquisition costs of packaging and packing than on total ownership costs. For example, the reuse of containers has been emphasized within DoD to reduce packaging and packing costs and to simultaneously reduce solid wastes. The implementation of one reusable container system consisting of 25 standard designs resulted in cost reductions of 50% per trip. This system, which is now available to all Federal Agencies through General Services Administration stocks, also provides interchangeability among line items. Foam-in-place packaging, which is designated as level A, has also been introduced to reduce labor costs and again to offer reusable packing materials. Cost avoidance of 30% over previous packs, including level C, has been obtained consistently through the use of this system.

Packing and packing requirements in contracts are reviewed by Defense Contract Administration Services (DCAS) activities and when they appear to be excessive a technical change recommendation is submitted to the procuring activity. In FY 1972 DCAS Regions submitted 948 such recommendations. DCAS activities also perform technical cost-price evaluations in support of contract negotiations and changes are effected as appropriate. Combined cost avoidances and cost savings under these programs were reported as totaling \$3.0 million in FY 1972.

APPENDIX I

During the last week of November 1972 a representative sample of 317 contracts for the Military Departments and the Defense Supply Agency was reviewed by four DCAS Regional Offices. These contracts encompassed 518 contract lines at a total cost of \$39,173,807. A breakout of the prescribed levels of packaging and packing (e. g. , A/A) in these contracts is shown below:

<u>Levels</u>	<u>Contract Lines</u>	<u>Percentage</u>
A/A	50	9.7
A/B	47	9.1
A/C	154	29.7
C/C	130	25.1
Commercial	<u>137</u>	<u>26.4</u>
TOTAL	518	100.0

3. Recommendation: Designate a focal point to develop and monitor specifications for packaging and packing to clarify, consolidate and standardize specifications to promote consistency among all defense buying activities.

Comment: The U. S. Army Materiel Command Packaging, Storage, and Containerization Center at the Tobyhanna Army Depot, Tobyhanna, Pennsylvania, has been the DoD focal point for developing and monitoring major packaging and packing documents under the PACK Area of the Defense Standardization Program since July 1, 1963. Previously this activity was designated as the Ordnance Packaging Agency at the Rossford Army Depot, Toledo, Ohio. During the past 10 years a total of 195 packaging and packing documents have been cancelled or consolidated under this program. At present the Center is developing a proposed Military Standard which will permit a much greater degree of uniformity in the selection and application of packaging and packing data at all levels within DoD as well as contractor plants.

4. Suggestion: That DoD obtain greater assistance from its contractors who, through their experience, research and industry standards, have much to offer in the way of constructive suggestions for improving packaging with concomitant savings.

Comment: Defense Standardization Manual 4120.3-M requires that drafts of military standardization documents (e. g. , specifications, standards, etc.) be circulated to a completely representative cross-

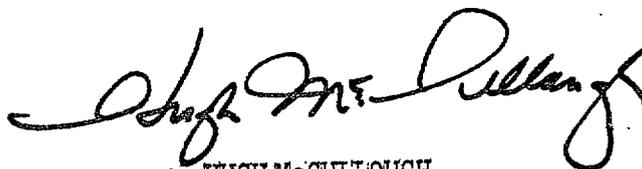
section of the affected segments of industry. Also, since many key packaging and packing documents managed within the PACK Area are utilized by practically all DoD contractors, the Army on August 21, 1972, distributed a letter to DoD preparing activities having PACK Area projects requiring that draft documents be coordinated with industry associations on record as having strong packaging and packing interests.

In addition, joint industry-defense meetings, seminars, and symposiums are used to provide forums for discussing problems and exchanging ideas in this area. A recent example of this was the October 10-11, 1972, "Annual Packaging and Product Protection Technical Refresher Course" hosted by General Electric Company, Glenn Falls, New York.

Value Engineering Clauses are commonly included in defense contracts of \$100,000 or more to provide the means for contractors to propose more economical packaging and packing to meet defense needs and share in cost savings. Also, Defense Contract Administration procedures for conducting technical surveys of contractor facilities include the solicitation of comments relative to DoD packaging and packing specifications and commercial practices available which would provide equivalent or better protection.

We appreciate your interest in this matter and trust the foregoing will be of assistance to you. Continuing efforts will be made within the Department of Defense to assure that no more than the required level of protection is provided at the lowest overall cost.

Sincerely,



HUGH McCUTLOUGH
Acting Assistant Secretary of Defense
(Installations and Logistics)

APPENDIX II

PRINCIPAL OFFICIALS OF THE DEPARTMENT OF DEFENSE

AND THE MILITARY DEPARTMENTS

RESPONSIBLE FOR ADMINISTRATION OF ACTIVITIES

DISCUSSED IN THIS REPORT

Tenure of office

From

To

DEPARTMENT OF DEFENSE

SECRETARY OF DEFENSE:

Elliot L. Richardson	Jan. 1973	Present
Melvin R. Laird	Jan. 1969	Jan. 1973
Clark M. Clifford	Mar. 1968	Jan. 1969
Robert S. McNamara	Jan. 1961	Feb. 1968

DEPUTY SECRETARY OF DEFENSE:

William P. Clements, Jr.	Jan. 1973	Present
Kenneth Rush	Feb. 1972	Jan. 1973
David Packard	Jan. 1969	Dec. 1971
Paul H. Nitze	July 1967	Jan. 1969
Cyrus R. Vance	Jan. 1964	June 1967

ASSISTANT SECRETARY OF DEFENSE
(INSTALLATIONS AND LOGISTICS):

Hugh McCullough (acting)	Jan. 1973	Present
Barry J. Shillito	Feb. 1969	Jan. 1973
Thomas D. Morris	Sept. 1967	Feb. 1969
Paul R. Ignatius	Dec. 1964	Sept. 1967

DIRECTOR, DEFENSE SUPPLY AGENCY:

Lt. Gen. Wallace H. Robinson, Jr.	July 1971	Present
Lt. Gen. Earl C. Hedlund	July 1967	Jan. 1971
Vice Adm. Joseph M. Lyle	July 1964	July 1967

DEPARTMENT OF THE ARMY

SECRETARY OF THE ARMY:

Robert F. Froehlke	July 1971	Present
Stanley R. Resor	July 1965	June 1971

Tenure of officeFrom ToDEPARTMENT OF THE ARMY (continued)ASSISTANT SECRETARY OF THE ARMY
(INSTALLATIONS AND LOGISTICS):

Dudley C. Mecum	Oct. 1971	Present
J. Ronald Fox	June 1969	Sept. 1971
Vincent P. Huggard (acting)	Mar. 1969	June 1969
Dr. Robert A. Brooks	Oct. 1965	Mar. 1969

DEPARTMENT OF THE NAVY

SECRETARY OF THE NAVY:

John W. Warner	Apr. 1972	Present
John H. Chafee	Jan. 1969	Apr. 1972
Paul R. Ignatius	Sept. 1967	Jan. 1969
Charles F. Baird (acting)	Aug. 1967	Sept. 1967
Robert H. B. Baldwin (acting)	July 1967	Aug. 1967
Paul H. Nitze	Nov. 1963	July 1967

ASSISTANT SECRETARY OF THE NAVY
(INSTALLATIONS AND LOGISTICS):

Robert D. Nesen	Jan. 1973	Present
Charles L. Ill	July 1971	Jan. 1973
Frank Sanders	Feb. 1969	July 1971
Barry J. Shillito	Apr. 1968	Feb. 1969
Vacant	Feb. 1968	Apr. 1968
Graeme C. Bannerman	Feb. 1965	Feb. 1968

DEPARTMENT OF THE AIR FORCE

SECRETARY OF THE AIR FORCE:

Dr. Robert C. Seamans, Jr.	Jan. 1969	Present
Dr. Harold Brown	Oct. 1965	Jan. 1969

ASSISTANT SECRETARY OF THE AIR FORCE
(INSTALLATIONS AND LOGISTICS):

Lewis E. Turner (acting)	Jan. 1973	Present
Philip N. Whittaker	May 1969	Jan. 1973
Robert H. Charles	Nov. 1963	May 1969





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