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Department of Defense industrial plant equipment costing about $5.4 billion requires more efficient management. The military services' need of industrial plant equipment should be based on total peacetime mobilization requirements, less those requirements which private industry will meet. Findings/Conclusions: The services do not have practical systems for translating mobilization end-item requirements into equipment needs. They seem to have retained more equipment than needed for peacetime and mobilization requirements. Recommendations: Standardized criteria and instructions for planning and meeting equipment needs should be established. Procedures for equipment replacement justification should be established. Plant equipment management should be centralized. (HTW)

REPORT TO THE CONGRESS

BY THE COMPTROLLER GENERAL OF THE UNITED STATES

Management Of Department Of Defense Industrial Plant Equipment Can Be Improved

The military services' need of industrial plant equipment should be based on total peacetime and mobilization requirements, less those requirements which private industry will meet. The services do not have practical systems for translating mobilization end-item requirements into equipment needs; they seem to have retained more equipment than needed for peacetime and mobilization requirements. A strong central manager of Department of Defense industrial plant equipment is necessary.

LCD-76-407

OCT. 5,1976

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

B-140389

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

This is our report on improving the management of industrial plant equipment at Government-owned and operated facilities. The review was made to determine the adequacy of industrial plant equipment to meet mobilization requirements.

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

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

Comptroller General
of the United States

Contents

ABBREVIATIONS

DIPEC	Defense Industrial Plant Equipment Center
DOD	Department of Defense
GAO	General Accounting Office
IPE	industrial plant equipment

D I G E S T

The Department of Defense owns industrial plant equipment costing about $5.4 billion, more than may be needed for peacetime and mobilization requirements.

This includes $2.0 billion worth of equipment in Government-operated facilities, $2.5 billion worth in contractor-operated facilities, and $1.0 billion worth in an idle status being held for future needs.

Industrial plant equipment, equipment with an acquisition cost of $1,000 or more, is used for manufacturing, maintenance, assembly, and research and development. It includes cutting, grinding, shaping, joining, and testing equipment. (See p. 1.)

The amount needed by the military services should be based on total peacetime and mobilization requirements, less that equipment available in private industry to fill Government orders. However, the military services have understated the number of hours that machines will be run in a mobilization and that is why, in part, more equipment than may be needed has been retained.

During peacetime, most activities operate one 8-hour shift a day, 5 days a week. The Department of Defense has not provided the services with explicit policy on how to determine needs for industrial plant equipment during mobilization. As a result, the services have

--established different criteria for determining those needs,

--understated the number of available production hours, and

--overstated industrial plant equipment needs. (See p. 3.)

For example, one activity followed Army guidance of assuming two 8-hour shifts a day during a mobilization but reduced the amount of time available by 48 percent to allow for inefficiency. This situation caused GAO to review the Department's management of industrial plant equipment at Government-owned and operated facilities. (See p. 4.)

RETENTION OF EQUIPMENT

The military services do not have practical systems for translating mobilization requirements into industrial plant equipment needs and seem to lack confidence in the validity of the stated requirements. Navy activities are not even told what their mobilization requirements are. One shipyard retained equipment which was needed only for ship construction even though construction was no longer included in its long-range workload forecast.

If the Department of Defense were to provide the military services with a more explicit planning assumption for determining industrial plant equipment needs for mobilization requirements, any excess or shortage of equipment at military activities would be identified. Activities should be required to report excess industrial plant equipment accurately for purposes of redistribution. Present reports have not provided enough visibility to insure maximum reutilization of idle industrial plant equipment. (See p. 11.)

Retention of industrial plant equipment above mobilization requirements creates, in effect, a general reserve. Since the Department of Defense maintains a general reserve to meet unforeseen requirements, the amount of industrial plant equipment being held may be more than is needed during wartime.

Industrial plant equipment not currently needed should be retained only for mobilization purposes and should be limited to those items

which are not expected to become available from other sources, such as the general reserve. (See p. 12.)

ACQUISITION OF NEW EQUIPMENT

Although the services in recent years have not bought much industrial plant equipment to expand their capabilities, they have replaced some of their older equipment. (See p. 14.)

Army activities are required to justify the replacement of plant equipment on the basis that the cost of new equipment will amortize within 5 years. However, the methods which Army activities used to project the new equipment's use do not provide a reasonable basis for assuming that the cost actually will amortize in 5 years.

In their justifications, Army activities projected full use of new machines, even though they did not know what the machines' workloads would be by the time they were installed. Since much less than full use was generally achieved, the machines' cost did not amortize within the required 5 years. (See p. 14.)

Also, Army activities did not actually replace the older machines which had been used in justifying the acquisition of new ones. Instead, other machines were substituted. (See p. 16.)

NEED FOR CENTRAL MANAGER

The responsibility for managing industrial plant equipment is divided between the services and the Defense Industrial Plant Equipment Center. The services are required to report to the Center those items which are excess to mobilization requirements so that they can be redistributed to activities which need them. But because many activities did not report accurately or promptly their idle equipment, the Center was unable to obtain maximum use of this equipment. (See p. 19.)

The Center is responsible for managing and selecting items for a general reserve of plant equipment to provide maximum Department of Defense mobilization capacity. At the same time, the services are responsible for selecting items to be retained to provide maximum mobilization capacity.

A strong central manager of industrial plant equipment is needed to manage an adequate reserve and to obtain maximum use of equipment.

RECOMMENDATIONS

The Secretary of Defense should:

--Establish standardized criteria for planning industrial plant equipment needs and develop new standardized instructions so that the services can establish more valid plant equipment requirements to meet their mobilization production needs.

--Revise the procedures for justifying the replacement of industrial plant equipment to insure that the justifications are based on accurate data and that the replacements are economically sound, or are adequately justified for mobilization surge needs.

--Centralize the responsibility for industrial plant equipment management to provide a mobilization reserve with the resources available at Government facilities and in the private sector.

AGENCY COMMENTS

The Department of Defense agreed with GAO's recommendation on standardized instructions for similar commodity areas. It advised GAO of actions being taken by the Army to provide standardized planning guidance and said that it will reassess existing criteria for Navy shipyards and Air Force depot maintenance centers to determine the need for publication of criteria in other planning guidance documents.

The Department of Defense agreed to consider centralizing the responsibility of all or part

of plant equipment management as it relates to Government-owned and operated facilities and to provide the Defense Industrial Plant Equipment Center with adequate staff to perform its mission.

This is the latest of several reports GAO has issued to the Congress and to the Secretary of Defense identifying opportunities to improve the management of industrial facilities (see app. I).

CHAPTER 1

INTRODUCTION

The Secretary of Defense is responsible for planning the procurement and production of military equipment and supplies needed to fulfill emergency requirements and for maintaining an adequate mobilization production base. The Department of Defense (DOD) Industrial Preparedness Program is the basic vehicle for carrying out these responsibilities. This program has three primary aspects: (1) modernizing and expanding Defense-owned production facilities through new investments, (2) planning with industry to retain privately owned production facilities, and (3) retaining existing Defense-owned facilities and equipment to meet mobilization needs.

In planning for mobilization production, Defense guidance to the services is to rely on privately owned facilities to minimize Government investments. Government-owned production facilities should be used only when (1) private industry is unable or unwilling to provide the necessary services or (2) they are needed for national security and/or quick-reaction capability.

INDUSTRIAL PLANT EQUIPMENT

DOD owns industrial plant equipment (IPE) costing about $5.4 billion. This includes $2.0 billion worth of equipment in Government-operated facilities, $2.5 billion worth located in contractor-operated facilities, and $1.0 billion worth in an idle status being held for future needs. IPE, equipment with an acquisition cost of $1,000 or more, is used for such operations as manufacturing, maintenance, assembly, and research and development. It includes cutting, grinding, shaping, joining, and testing equipment.

Both the military services and the Defense Industrial Plant Equipment Center (DIPEC), Defense Supply Agency, have management responsibilities for Defense-owned IPE. The military services' responsibilities include determining equipment requirements, reporting its status (i.e., actively being used or in an idle condition) to the Center, and maintaining IPE in their possession. DIPEC's responsibilities include (1) maintaining a central record of all Defense-owned IPE, (2) acting as a clearinghouse to obtain optimum reuse of IPE, and (3) managing a general IPE reserve for possible mobilization requirements.

SCOPE OF REVIEW

We made this review to assess the management of IPE at Government-owned and operated facilities. We did not review (1) the validity of mobilization requirements, (2) the services' plans for where items would be produced, or (3) Government-owned equipment held by contractors.

Our review was made at DOD and service headquarters, Washington, D.C.; DIPEC, Memphis, Tennessee; and the following Government-owned and operated facilities:

--Rock Island Arsenal, Rock Island, Illinois,

--Watervliet Arsenal, Watervliet, New York,

--Mare Island Naval Shipyard, Mare Island, California, and

--Oklahoma City Air Logistics Center, Oklahoma City, Oklahoma.

CHAPTER 2

NEED FOR IMPROVED CRITERIA TO DETERMINE HOW MUCH EQUIPMENT SHOULD BE RETAINED

The Department of Defense requires the military services to continuously review their facilities to make sure they are put to maximum use in order to minimize costs, increase productivity, and lessen the need for additional equipment. Because Defense requirements are satisfied by both Government activities and private industry, the amount of IPE needed by the services, then, should be based on total peacetime and mobilization requirements, less those requirements which private industry will meet.

To assist the military services in converting their mobilization requirements into equipment requirements and to keep costs down, the Secretary of Defense has issued guidance which differentiates between buying new equipment (using investment level requirements) and retaining equipment already on hand (using retention level requirements). (See ch. 3.)

Retention level requirements--usually higher than investment level requirements--are intended to provide for unforeseen requirements in a mobilization. That is, by using the retention level, the services' activities are allowed to keep IPE which they do not need in peacetime but which will be needed in a mobilization. In addition to this equipment, DIPEC maintains a general reserve of IPE for use in a mobilization.

Activities receive their end-item mobilization requirements from higher commands or service headquarters. Then, on the basis of the number of hours the IPE is expected to be run during a mobilization, the activities determine how much and what types of equipment they need to produce and/or repair the required number and types of end items.

DOD has not provided explicit guidance to the services on how to determine the number of production hours that IPE is expected to be run during a mobilization. As a result, the services have established differing criteria which, in a number of instances understated the number of hours the equipment would be used. This in turn resulted in the retention of more equipment than would be needed to meet estimated mobilization requirements.

Activities are required to report the status of their IPE to DIPEC so that the Center can provide for the maximum use of all the services' IPE. However, activities often did not report th idle equipment retained for mobilization, mainly because of uncertainty that the end-item requirements they had received were complete and valid. As a result, equipment which could have been used at another activity remained idle and new equipment may have been purchased unnecessarily.

EQUIPMENT NEEDS SHOULD BE BASED ON FEASIBLE USE DURING MOBILIZATION

During peacetime, most industrial activites operate one 8-hour shift a day, 5 days a week (referred to as 1-8-5). During mobilization, production activities could, and most likely would, expand to full production and work three 8-hour or two 10-hour shifts a day, 6--or even 7--days a week. Most of the military service activities included in our review did not compute IPE needs during mobilization on the basis of full production and as a result, overstated their needs.

Army

Army Regulation 700-90 requires that, when determining how much equipment is needed to meet mobilization requirements, consideration be given to operating two 8-hour shifts a day, 5 days a week. In interpreting this policy some Army activities assume that the total number of available machine hours should be reduced for such factors as downtime.

For example, Rock Island Arsenal assumes that, to meet mobilization production requirements, machines will be workloaded 182 hours a month. This assumption is based on two 8-hour shifts a day, 5 days a week, as directed, but is then adjusted for nonuse of the equipment (25 percent), personnel inefficiency (5 percent), and unplanned work (18 percent). According to U.S. Army Materiel Development and Readiness Command officials, the 2-8-5 assumption set forth in the Army regulation was intended to be used without reductions for inefficiency.

Although Rock Island officials told us they actually expect to work on a 3-8-6 basis (adjusted for inefficiency) during a mobilization, they believe a 2-8-5 basis, as adjusted, is the maximum capacity to plan for because of (1) the arsenal's job shop operations in which small quantities of numerous items are produced and (2) the possibility that mobilization requirements will include some work not presently planned, based on past experience in wars and widely fluctuating requirements. One official said the fluctuating

requirements made it difficult and time consuming to determine IPE needs and to make the necessary changes in the production base, such as acquiring, excessing, and moving equipment.

Arsenal officials have pointed out the difficulty in planning for mobilization requirements because of the changes in quantities of production requirements for major weapons and items. Although the items planned for production had not changed much over the last few years, the quantities have, as shown below for eight of Rock Island's major items.

	Monthly production requirements in fiscal year			
	1973	1974	1975	1976
Machine gun, 50 cal., M85	321	336	209	103
Machine gun, 7.62mm, M219	556	619	559	
Arc, traversing	53	-	10	
Barrel assembly, M2	3,148	1,893	2,168	2,109
Jack assembly	26	37	68	68
Gun mount, M140	492	571	456	288
Mount, M106A1	53	47	312	155
Ratchet assembly	72	24	363	325

In a recent report (LCD-75-427, Jan. 20, 1975), we emphasized the need for the arsenal to assess the capability of private industry to produce the items planned for in-house production. Army officials agree that determining the extent of proposed future production requirements that could be met by private industry was sound management. After studying this matter, the Army assured us that 33 of the 35 weapons end items can be obtained more economically from private industry. On the basis of this study, the Army deferred a consulting contract to assess the equipment and physical plant needs for modernization. The capability of private industry to produce these items raised a question as to the need for retention of equipment to plan for the mobilization production of these items.

In contract to Rock Island, Watervliet Arsenal computes its IPE requirements on the assumption that it will operate at 90-percent efficiency, three 8-hour shifts a day, 6 days a week during a mobilization. The 10-percent inefficiency factor, which the arsenal bases on extensive experience, is to allow for all unavoidable delays. Thus, Watervliet plans to run its machines 506 hours a month, while Rock Island plans 182 hours a month. Watervliet officials said they justify 3-8-6 planning on the basis of their operations during prior crises, such as World War II; the availability of semiskilled personnel in the area; and the close

relationship between their peacetime production items and mobilization requirements.

In an attempt to clarify the Army's criteria for determining equipment needs, the U.S. Army Armament Command stipulated in a February 1975 directive that retention of IPE in packages 1/ be based on 500 hours a month, adjusted for 30-percent inefficiency, or 350 net hours a month. Watervliet Arsenal officials, noting that a drop from 506 to 350 productive hours a month would imply a need for additional equipment, took exception to the new assumption as too conservative. In a March 26, 1975, letter to the U.S. Army Armament Command, Watervliet stated that compliance with the 350-hour assumption was not appropriate without further study.

Air Force

Like the Army, the Air Force does not compute IPE needs during mobilization on the basis of full production and as a result it appears to have equipment in excess of that needed to meet mobilization requirements. Oklahoma City Air Logistics Center has recently rearranged its engine shops to improve overhaul operations. It has the capacity to overhaul the equivalent of 2,500 engines a year on one shift and 4,250 on two shifts.

On the basis of planned flying-hour programs provided by Air Force headquarters, Oklahoma City Air Logistics Center estimated in May 1975 the peacetime and mobilization overhaul requirements for fiscal years 1977-79, were as follows:

Fiscal year	Peacetime engine overhauls	Mobilization engine overhauls
1977	2,116	2,530
1978	2,105	2,128
1979	2,211	2,077

It appears that Oklahoma City's projected annual peacetime and mobilization requirements for engine overhauls can be met on a one-shift basis and, according to Center officials, it is likely that overhaul requirements will further decline in the future.

1/IPE packages are groups of reserve equipment which are retained for use as an entity or with other equipment to produce a specific item during a mobilization.

Air Force Logistics Command officials told us that mobilization surge requirements can be fulfilled by shift expansion to 70 hours per week; i.e., a 1-10-7 basis. Therefore, if Oklahoma City Air Logistics Center was to expand to full production during mobilization, it would either grossly overproduce or spend considerable time waiting for work.

In commenting on this report, the Air Force said that in addition to the mobilization engine overhauls, there will be a large component workload at the Oklahama City Air Logistics Center. Subsequent to receipt of the comment, an Air Force representative told us that the component workload during a mobilization is expected to be about 52 percent of the total workload. We did not verify this statement.

Navy

Through its computerized Shipyard Modernization System, the Naval Sea Systems Command projects shipyards' long-range workloads and provides guidance on converting these workloads into IPE needs. The workloads projected by the command, however, include only peacetime requirements, which are often unrealistic. In addition, the shipyards are not told what their mobilization requirements are.

The projected peacetime workloads are based on the assumption that both the basic mission and the current functions of each shipyard will not change. Since a shipyard's basic mission and current functions are often quite different, the projected workload may not be valid. For example, the projected workload of Mare Island Shipyard for fiscal years 1967-76 was the construction of 12 submarines. However, after this work was projected, the shipyard's actual work changed from constructing ships to overhauling and repairing them. In calendar year 1974, the shipyard finished overhauling four submarines, continued overhauling a submarine which arrived in 1973, and began overhauling four others; it did not construct any submarines.

Command officials told us that DOD had not given them any guidance on mobilization requirements and that ship construction was impossible to forecast. The command therefore assumes that mobilization requirements will be met by expanding shipyards' staffing and work hours and by retaining IPE which is considered to be mission-support equipment.

Mission-support equipment is that which is needed to meet a known or reasonably anticipated requirement of a shipyard's basic mission or of its long-range workload. Thus, if a shipyard currently does work of a different type from that specified in its basic mission, as Mare Island does,

it can retain IPE which is needed for its mission workload but which is not needed for its present or anticipated workload. Although a Naval Sea Systems Command instruction which was in effect at the time of our review cautioned against retaining IPE merely because it could be needed in the future, other statements in the instruction negated this caution. For example:

> "* * * also keep in mind that, if your mission states you are an aircraft carrier overhaul yard, for example, and your long range workload shows no aircraft carrier overhauls in the next ten years, you may retain IPE required for such overhauls as 'mission support IPE' regardless of your workload.
>
> "Further keep in mind that, if you have equipment which you strongly feel to be 'mission support IPE' but are concerned that retention as such could cause a controversy, you can report this equipment to DIPEC as idle IPE under Status Code 3H * * *. This insures that the idle IPE will not be taken from you without your concurrence but also avoids the possibility of criticism that another activity may be unnecessarily buying identical equipment without full knowledge that you have idle equipment which may become available for redistribution through DIPEC. If in doubt * * *, report it to DIPEC under Status Code 3H." 1/

As a final example, although ship construction was no longer included in the long-range forecast for Mare Island, the command's instruction stated that Mare Island should retain IPE which is needed solely for ship construction. As pointed out in our February 1975 report on the Government support of the shipbuilding industrial base (PSAD-75-44, Feb. 12, 1975) for more than 20 years most Navy ships have been built by private yards, and since 1968 all Navy ship orders have been placed with private yards.

In commenting on this report, the Navy said that although all naval shipyards have new ship construction

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1/IPE in a Government-owned and operated installation or activity which is subject to intermittent use and is required to remain in place to support the current assigned mission of the installation or activity is assigned Status Code 3H.

capability included in their mission statements, only four shipyards are authorized to retain key industrial plant equipment essential for ship construction. The Navy said that the equipment is retained "in anticipation of growing support for heavy Navy shipbuilding programs which can lead to some new ship construction work for naval shipyards."

We believe that the time required to convert to new construction--such as reorganization of plant facilities, assimilation of critical labor skills, and acquisition of needed parts and raw materials--could allow sufficient leadtime to obtain the required equipment from other sources, such as DIPEC's general reserve, if the need should arise.

RETENTION OF MORE IPE THAN NEEDED TO MEET MOBILIZATION REQUIREMENTS

The services do not have a good basis for determining mobilization needs and consequently they may have more or less IPE than is needed to meet mobilization requirements. The impact of understating available machine hours on the number of machines justified for retention can be seen in the table below. The table is based on Rock Island Arsenal's total mobilization workload of 396,948 machine hours.

Number of shifts assumed	Total available hours per machine per month	Number of machines needed
3-8-6	624	636
2-10-6	520	763
2-8-5	347	1,144
2-8-5 (as adjusted by Rock Island)	182	2,181

It should be noted that the example above illustrates the computation of IPE needs in general terms only; it does not take into account the various types of machines that may be needed, the capacity available at other activities or at contractor plants. However, one can readily see that planning to run machines 182 hours rather than 624 hours(or 347 hours) greatly increases the number of machines that appear to be needed for mobilization production.

DOD could reduce costs and better use its IPE if activities recomputed their equipment needs on the basis of more relistic mobilization capacities. Items determined to be excess to mobilization requirements should then be reported to DIPEC so that they could be redistributed to

activities which needed them. Such redistribution, however, can take place only if DIPEC has full visibility of Government-owned IPE. In other words if the Center does not know that activity A has an unneeded idle item and if activity B requests such an item, the Center will tell activity B that the item is not available by issuing a certificate of nonavailability. Thus, while activity A is retaining an idle machine, activity B will have to purchase a similar item or do without.

Activities engage in many practices which impair DIPEC's ability to properly manage idle IPE. For example:

--Oklahoma City Air Logistics Center failed to report 248 items of IPE with an acquisition value of over $3 million. These items were not used and were held in storage. DIPEC's records showed that the Air Logistics Center had only 58 items valued at $1.2 million. Consequently, DIPEC was not aware of the status of idle equipment costing $1.8 million.

--Watervliet Arsenal has no single procedure to identify IPE excess to its needs. Consequently, idle equipment can remain at the arsenal and not be reported in a timely manner. Reliance is primarily on individual shop foremen to contact production planners when a machine has fallen into disuse. What constitutes disuse is an interpretation that generally varies from shop foreman to shop foreman.

We questioned 166 items at Watervliet Arsenal which were used from 1 to 5 percent of the time available. We were told that, after considerable examination, 121 items of IPE were required for mobilization purposes and use of 41 others was scheduled for short periods in a subsequent month. Two could not be justified either for mobilization or current production. None of the 43 items was reported to DIPEC.

As discussed on page 7 and 8, Navy shipyards are permitted to retain IPE which they consider essential to mission support. The shipyards, however, are required to report to DIPEC the idle equipment which they have retained. A review by the Naval Sea Systems Command, made at about the same time as our review, showed that Mare Island Shipyard had neither classified idle equipment as needed for mission support now repored it to the Center.

We reviewed 57 items of IPE which cost over $10,000 each and had recorded use of less than 1 percent in the fiscal

year preceding over review. Shipyard officials told us that these items had been retained for mission support. Certificates of Nonavailability had recently been issued by DIPEC for 11 of the 57 items. Therefore, other activities may have purchased new items although the items at the shipyard had little or no use. Concerning these items, the Navy said:

--Three units were required for new ship construction and must be retained even though the shipyard's long-range workload did not include ship construction.

--Two units were used to work contaminated material and should be retained to support this mission.

--Two units were considered as excess and were processed for disposal.

--Two units were needed for overhauling ships and should be retained as mission support regardless of how often they were used.

--One unit was evidently expected to be used more because two similar items had recently been disposed of.

--One unit was transferred to the industrial laboratory, and no further justification for its retention was provided.

In our opinion, idle and underused IPE should be retained for mission support only if there is a reasonable basis for concluding that it may later be needed. The Navy could not demonstrate that the 11 items would be needed later. In addition, since the shipyards have unrealistic long-range workload requirements for peacetime and no clear mobilization requirements, it appears that they have no reasonable basis for retaining any of the 57 items of IPE. The shipyard later said it was taking corrective action and planned to reclassify the equipment as mission support.

CONCLUSIONS

The military services do not have practical systems for translating mobilization end-item requirements into IPE needs and seem to lack confidence in the validity of the stated end-item requirements. Navy activities are not even told what their mobilization requirements are. In addition, the guidance activities receive concerning mobilization capacities is not adequate and is understated.

Activities have therefore retained equipment not only to meet unforeseen mobilization requirements but also for other possible situations, such as plant inefficiencies or changes in the types of work that will be required of them, even in peacetime.

The services' retention of IPE above mobilization requirements creates, in effect, a general reserve. Since DIPEC maintains a general reserve to meet unforeseen requirements, the amount of IPE being held Defense-wide may be more than is needed during wartime.

IPE not currently needed should be retained only for mobilization purposes and should be limited to those items which are not expected to become available from other sources, such as DIPEC's general reserve. Also, in deciding what items to retain, activities should consider such factors as (1) how long it would take to replace the items if they were disposed of and a need for them later developed and (2) whether the items retained will be at the appropriate state of the art by the time they are needed. But most importantly, equipment should be retained on the basis of a realistic, maximum production capacity. We believe the 3-8-5, 3-8-6, 2-10-6, or 2-10-7 operations are viable options for planning equipment needs and for reducing costs and improving productivity.

DOD should provide the military services with a more explicit planning assumption for determining IPE needs for mobilization requirements, as a basis for identifying excesses or shortages of equipment at military activities. Activities should be required to report excess IPE accurately so that DIPEC can redistribute it for maximum use. The reports which DIPEC presently receives have not provided enough visibility to insure maximum reuse of idle equipment.

RECOMMENDATIONS

We recommend that the Secretary of Defense establish standardized criteria, such as those cited above, for planning IPE needs and for reducing costs and improving productivity. The new standardized instructions should help the services establish more valid IPE requirements to meet their mobilization production needs. These instructions should (1) clarify the Navy's retention of IPE, which is based on criteria which do not reflect activities' current workload and mobilization requirements, (2) provide the Army a basis for consistent application of the instructions, and (3) state what adjustments, if any, are allowed for any downtime or inefficiency in determining mobilization needs.

AGENCY COMMENTS AND OUR EVALUATION

DOD agreed with our recommendation and advised us of actions being taken to provide standardized criteria for similar commodity areas. (See app. II.) DOD stated that normally it expects industrial equipment to be available for use around the clock in support of surge or wartime requirements, but it does not plan for around the clock operations so as to provide some reserve capacity for unexpected workload that exceed projections.

With respect to the Army's 2-8-5 criteria, DOD stated that the Army has developed facility capacity and efficiency factors for all commodities, the factors are in the process of being incorporated in the Army Planning and Programming Guidance, and the new guidance will rescind the 2-8-5 guidance. DOD stated that it will reassess the existing criteria for Navy shipyards and Air Force maintenance centers to determine the need for publication of criteria in other planning guidance documents.

We believe that the actions indicated by DOD, if adequately implemented, should improve the criteria for determining its IPE needs.

CHAPTER 3

ACQUISITION OF ADDITIONAL EQUIPMENT

To insure sufficient industrial production capacity to support the United States and certain Allied forces in a national emergency, the Secretary of Defense has authorized the military services to replace, modernize, and expand their production equipment. The services have not bought much IPE to expand their capabilities in recent years, but they have replaced some older equipment.

Replacements at Government-owned and operated facilities are generally justified on an economic basis by comparing the cost of using an existing machine or machines versus the capital and operating costs of its replacement. Items can be replaced either by new procurement or reuse of idle equipment in the inventory, where the replacement is justified by the results of an economic analysis.

DOD requires IPE replacements at contractor plants to be justified on the basis that the cost of the new equipment will be amortized within 5 years, but does not require application of this criteria for replacements at Government-owned and operated facilities. Although not required by DOD, the Army also applies the 5-year criteria to replacements at Government-owned and operated facilities.

The method used by the military services to project the use of new IPE does not provide a reasonable basis for assuming that the replacement is warranted. Projections have been inaccurate, as evidenced by the fact that in many instance new machines have been used less than projected and, as a result, some older equipment may have been replaced prematurely or unnecessarily.

ARMY

Army activities are to decide whether an IPE item should be replaced on the basis of the estimated workload, the item's age and condition, and estimated replacement and rehabilitation costs. When the estimated rehabilitation costs exceed 25 percent of the acquisition cost, the activity is to screen DIPEC for the item. If the Center cannot provide the item, the activity may request funds to purchase a new item. As discussed in chapter 4, however, the Center does not have full visibility of what items are available. As a result, activities may have purchased new items when similar items were available at other activities.

In deciding whether to request funds to purchase an item, activities should consider such factors as the criticality of the operation for which the item is needed and the time it would take for purchase versus rehabilitation. Once an activity decides to request the funds, it must prepare a justification showing the costs for the existing and proposed machines for 1 year and the expected productivity increase ratio. 1/ Although a new machine's cost is generally required to amortize in 5 years, exceptions can be made for contract or mission essentiality. A year after a new machine is installed, the activity is required to prepare a postanalysis report which compares the machine's use as projected in the justification with its actual use and which shows the increased productivity and savings.

In their justifications, activities projected full use of new machines even though they did not know what the machines' workloads would be by the time they were installed. Since much less than full use of machines was generally achieved, their costs often did not amortize within the required 5 years. For example, we reviewed 21 of the 27 postanalysis reports submitted by Rock Island Arsenal in fiscal years 1973 and 1974. The reports showed that the machines' first-year use was only 54 percent of that projected on the justifications. Because several of the reports cited equipment breakdowns as a reason for the low use, we reviewed the utilization data 2/ for the machines since they were installed; i.e., 26 to 47 months before. We found that, since they were installed, the machines had been used only about 47 percent of the projected time. Rock Island officials said it was extremely difficult to project the use of new machines because there is about a 3-year difference between a machine's justification and installation.

On January 20, 1975, we issued a report on Rock Island's modernization program which pointed out that the arsenal had overstated the IPE it needed to buy because it had used retention level, not investment level, requirements. The Army replied that current guidance to the arsenal had reemphasized the need to use the investment level as a basis for modernization. The Army also said it was reviewing the use of a 2-8-5 shift basis.

1/A measure of the increased production capacity of a new machine.

2/Utilization data represents the number of hours an employee charges against a machine, which may not reflect actual machine use.

Watervliet Arsenal also had problems in accurately projecting the future use and productivity of new machines. In examining the 20 most recent postanalysis reports and the related justifications, we found:

--Fourteen of the postanalysis reports were developed late, so the initial productive months were excluded.

--Total actual savings averaged only 38.3 percent of the savings estimated on the justifications, and in seven cases the equipment was no longer expected to amortize within 5 years.

--Actual productivity increase ratios exceeded those estimated in 4 cases and failed to meet those estimated in 10 cases. In the remaining six cases, the ratios had not been developed or records were not sufficient to make a comparison.

For Watervliet's seven most recent replacement requests, over two-thirds of the original machines were not actually replaced. Other machines were substituted and excessed. For example, in 1971 the arsenal requested replacement of a milling machine with tag number 10385. Although a new milling machine was installed in 1973, records showed that the machine it replaced had tag number 3792. Thus, although machines were excessed, they were not the same machines that had been used to calculate savings and productivity gains on justifications for new machines. Again, the time lags in the equipment replacement process were cited as a factor in machine substitutions, because machine conditions and production schedules were said to change over the years.

AIR FORCE

In fiscal years 1974 and 1975, Oklahoma City Air Logistics Center bought IPE with a total value of over $7.2 million. Most of the new IPE is numerically controlled equipment and the Air Force has justified the procurement on the basis of increased productivity and long-range modernization.

Our reports, "Numerically Controlled Industrial Equipment: Progress and Problems" (LCD-74-423, Sept. 24, 1974), and "Use of Numerically Controlled Equipment Can Increase Productivity in Defense Plants" (LCD-75-415, June 26, 1975) showed that if properly managed, numerically controlled industrial equipment offers tremendous increases in productivity and savings in industrial operations.

However, we reported that many activities have had little success in achieving cost savings from numerical control. In their justification for buying this equipment, activities frequently cited quick payback periods and high productivity. These justifications were normally based on ideal production systems, were not based on accurate data, and did not show all costs and savings. In our April 1974 report to the Secretary of Defense on the San Antonio Air Logistics Center (see p. 18), we reported that in deciding whether to replace or retain machines, the depot used estimated data which overstated machine use.

NAVY

Although Mare Island Naval Shipyard has acquired very few additional IPE items in recent years, a modernization program study completed in July 1974 recommended a large future investment over a period of years. The study was based on an assumption that the repair and overhaul workload at Mare Island could be expected to continue at the present level throughout fiscal years 1978-87. The study concluded that the shipyard had major deficiencies in facilities and equipment and that an average IPE investment of about $1.8 million a year over an 11-year period would be required to upgrade efficiency, balance shop capacities, support projected workloads, upgrade capabilities, and acquire new capabilities to service new ships and shipboard weapons.

We reviewed the IPE procurement justifications submitted by Mare Island for funding in fiscal year 1976. The first-year program included 43 projects estimated to cost about $1.9 million. None of the justifications were based on a need for increases in mobilization capability. Each justification included an analysis showing that procurement of the requested equipment would be cost beneficial.

In a related report on the Puget Sound Naval Shipyard, we reported that its shipyard facilities have been greatly underused and that much equipment has been underused or idle. We also reported that justifications for new equipment were based on questionable usage data.

We also found similar problems at Navy aircraft overhaul depots (LCD-75-432, Dec. 23, 1975). We developed a model which projects an approximation of workload and manpower on the basis of the Navy's current mobilization flying-hour scenario. On the basis of this model, we concluded that the current depot-level capacity far exceeds mobilization needs.

CONCLUSIONS

DOD and military service procedures for justifying the replacement of industrial plant equipment need to be revised to insure that the justifications are based on accurate data and that the replacement is economically sound.

Our two recent reports to the Congress on numerically controlled industrial equipment cited on page 16 showed that justification documents and procedures for new procurements of numerically controlled equipment contained inaccurate data.

Our reports, "An Industrial Management Review of the Maintenance Directorate, San Antonio Air Materiel Area, San Antonio, Texas" (B-159896, Apr. 11, 1974) and "Industrial Management Review of Puget Sound Naval Shipyard" (B-118733, Aug. 5, 1974) showed that much equipment has been underused or idle and that justifications for new equipment have overstated the estimated use of the equipment.

We believe that our review, when considered with our earlier work, shows that accurate information is ordinarily not provided for the consideration of those having to decide whether or not to replace existing equipment. There seems to be an inherent tendency to predict greater use of new equipment than the older equipment. As a result, equipment may have been replaced prematurely or unnecessarily.

RECOMMENDATION

We recommend that the Secretary of Defense revise the procedures for justifying the replacement of IPE to insure that the justifications are based on accurate data and that the replacements are economically sound, or are adequately justified for mobilization surge needs.

CHAPTER 4

CAN DOD OPTIMIZE THE BENEFITS FROM IMPROVED MANAGEMENT OF INDUSTRIAL PLANT EQUIPMENT?

The responsibility for managing IPE is divided between the military services and DIPEC. Each of the military services manages the equipment it owns, and DIPEC manages the equipment when it is no longer required by the military departments and is to be stored for future use.

Examples of the separate responsibilities are:

--DIPEC is to (1) maintain a central record of Defense-owned IPE (all in-use and idle IPE in military installations and activities and in contractors plants), (2) manage the DOD general reserve, and (3) obtain optimum reutilization of Defense-owned IPE.

--The military departments determine current and projected IPE requirements and mobilization reserve and modernization requirements. They are also responsible for reporting active and mobilization reserve equipment for inclusion in the central inventory. Military departments are also responsible for control over all active, prepositioned, package and standby equipment. Finally, DOD components are responsible for reporting idle equipment to DIPEC.

Managing the general reserve includes the development and maintenance of an equipment reserve at a level sufficient to provide maximum DOD mobilization capability. This means that DIPEC selects the IPE that is to be maintained and/or rebuilt for the general reserve. On the other hand, the military departments are responsible for selecting those items to be retained in the mobilization packages which have also been established to provide maximum DOD mobilization capability.

The general reserve consists of idle general purpose IPE that can be used for peacetime and mobilization requirements. This general reserve equipment is stored and maintained at a number of facilities throughout the country. Since this reserve is intended as a general reserve, the equipment is not identified with the production of a specific end item. As of Janaury 1976, there were 24,254 pieces of IPE in the general reserve.

DIPEC's selection of items to be retained in the general reserve is based on past experience of the requests it has had for that item and bears no relationship to mobilization production planning requirements.

The military services prepare mobilization plant equipment packages on the basis of the need to produce predetermined quantities of selected critical items. The packages consist of active and idle plant equipment which has been formally approved for retention by the Assistant Secretary of Defense (Installations and Logistics) as a reserve to produce a specific item during mobilization. As of January 1976, there were 265 plant equipment packages consisting of 47,282 pieces of IPE.

The purpose for keeping a central record on idle and active inventory is to provide overall visibility of Defense-owned IPE so that DIPEC can carry out its responsibility of managing the general reserve and optimizing reutilization.

Individual item reutilization efficiency depends on DIPEC's ability to identify idle equipment that will meet a customer's need. As pointed out in this report, the military services continued to manage IPE as active in-use equipment even though the utilization rate did not justify retaining the active in-use category. Unless the equipment is reported as idle, the Center cannot offer it to a service customer that may need the equipment. Although the military services are required to report changes in the status of IPE in their possession, there are no positive incentives to encourage proper reporting. First and foremost, once the equipment is reported as idle it no longer belongs to the military services and the services are reluctant to report as idle a piece of equipment that is marginal with respect to usage. There is a natural tendency to retain the item and wait for an in-service need before declaring it idle.

Conceptually, there is no need for a general reserve if both the private sector and the Governmenmt-owned facilities had their IPE requirements for mobilization purposes completely filled. The industrial preparedness program provides for the military services to determine which parts and end items are critical to our national defense and to insure that the industrial capacity to produce these items is available. This is generally accomplished by retaining the required IPE (beyond that which is already in place in Government-owned and privately owned facilities) in plant equipment packages to produce the item in the quantities required.

If IPE were properly managed, DOD could offer more assurances that the equipment would be properly reutilized and retained in quantities necessary to support the mobilization needs in a national emergency.

--DIPEC's role of maintaining central inventory records should be expanded beyond that of property accounting. Usage data should be made available to a central manager so that a determination can be made through inquiry whether it is in the best interest of the Government to leave the asset in place, furnish it to a new requester, store it for mobilization purposes, or dispose of it.

--A central manager should develop the gross production capacity of all IPE (active and in use, packaged, and stored) to compare against DOD's total mobilization needs and the total production capacity available in the private sector.

--A central manager should also have the capability to review installation needs and compare existing equipment with projected needs. This would permit the manager to suggest additions, deletions, and better equipment balancing to assure not only peacetime economic operations but more importantly assure mobilization surge needs.

CONCLUSION

A strong single manager for plant equipment is necessary to carry out the responsibilities that have been divided between the military services and DIPEC. It is obvious that DIPEC is unable to perform this function within its current role. It seems to us that to manage an adequate reserve and obtain maximum reutilization, it is necessary to have, as a minimum, the answers to the following questions. We believe DOD should consider these questions to determine whether the answers are known to the managers assigned the responsibility of managing equipment for both current and mobilization production purposes.

--How effective is the management of IPE within DOD when the management data is not available to one central manager?

--Can DIPEC effectively manage without total information on the availability of IPE?

--How much redundancy is built in for retention at all levels at each installation?

--Is this redundancy known to the equipment manager?

--Should IPE be managed by the military agency or by a central manager?

--How effectively could it be managed by the Army if Army organizations are all managed under different instructions or policies?

--How can DIPEC manage IPE without any information on how much is needed, how much is being managed by the agency, and how much is available in private industry?

RECOMMENDATION

We recommend that the Secretary of Defense centralize the responsibility for IPE management to insure the soundness of providing a mobilization reserve with the resources available at Government facilities and in the private sector and retain only the IPE needed for peacetime and mobilization needs. In addition, increased support should be provided to DIPEC as the focal point to insure coordination of the current management.

DOD COMMENTS AND OUR EVALUATION

DOD stated that studies of various alternatives to improve the management of plant equipment are currently being planned or underway. (See app. II.) DOD agreed to consider the feasibility of centralizing the responsibility of all or a part of plant equipment management for Government-owned and operated facilities and to provide DIPEC adequate staff to perform its mission; increased support will have to be considered in light of other budgetary constraints.

DOD stated that one of its management by objectives is designed to review the general reserve to insure that only essential equipment is retained. Likewise, the military services have been requested to review all plant equipment packages with the goal of reducing the number to the very minimum and then modernizing the essential items to improve productivity and production readiness. Finally, DOD stated that recent Office of Secretary of Defense and Defense Supply Agency audits and management actions have had an effect on the method of computing requirements for the general

reserve, therefore causing our finding in this area to be outdated.

We believe that the actions indicated by DOD, if adequately implemented, should improve the management of IPE. We plan to evaluate the management improvements during future reviews.

LIST OF GAO REPORTS TO THE CONGRESS AND THE SECRETARY OF DEFENSE ON DOD'S MANAGEMENT OF IPE

Need For Improvements In Controls Over Government-Owned Property In Contractor's Plants (B-140389, Nov. 24, 1967)

Action Taken To Put Inactive Industrial Plant Equipment In Army Arsenals To Use (B-163691, May 23, 1968)

Construction Of Industrial Facilities At Government-Owned Plants Without Disclosure To The Congress (B-140389, Apr. 7, 1970)

Improvements Being Made In The Controls Over Government Test Equipment Acquired By Contractors (B-140389, Apr. 9, 1971)

Further Improvements Needed In Controls Over Government-Owned Plant Equipment In Custody Of Contractors (B-140389, Aug. 29, 1972)

Management of Ship Overhaul and Repair Programs, Fiscal Years 1972 and 1973 (B-133170, June 7, 1973)

An Industrial Management Review of the Maintenance Directorate, San Antonio Air Materiel Area, San Antonio, Texas (B-159896, Apr. 11, 1974)

Industrial Management Review of Puget Sound Naval Shipyard (B-118733, Aug. 5, 1974)

Numerically Controlled Industrial Equipment: Progress and Problems (B-140389, Sept. 24, 1974)

Government Support of the Shipbuilding Industrial Base (PSAD-75-44, Feb. 12, 1975)

Use Of Numerically Controlled Equipment Can Increase Productivity In Defense Plants (LCD-75-415, June 26, 1975)

Navy Aircraft Overhaul Depots Could Be More Productive (LCD-75-432, Dec. 23, 1975)

APPENDIX II

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301

11 JUN 1976

INSTALLATIONS AND LOGISTICS

Mr. Fred J. Shafer
Director, Logistics and
Communications Division
United States General
Accounting Office
Washington, D.C. 20548

Dear Mr. Shafer,

Reference is made to the draft report, "Management of Industrial Plant Equipment Can Be Improved", (OSD Case #4330). It is noted that your report was limited to an assessment of the management of industrial plant equipment (IPE) located at Government-owned and [illegible]rated (GOGO) facilities and did not include a review of the validity of mobilization requirements. However, some of the data in the report relates to other than GOGO facilities.

The basic policy for providing and retaining Government-owned production plants and equipments is the Defense Industrial Reserve Act of 1973 (P.L. 93-155). This Act expresses the intent of Congress to provide an essential nucleus of Government-owned industrial facilities for immediate use to supply the needs of the Armed Forces during a national emergency or in anticipation thereof. The Government sector of the necessary production base is to be held to a minimum and maximum reliance, where practicable, is to be placed on the private sector. The Act also specifies that equipment may be retained in plant equipment packages or in a general reserve to maintain a high state of readiness.

Last December we tasked the Services under our management by objectives program to review the various sectors of industry supporting their missions and determine where it appears essential to retain Government-owned facilities. This initial effort concentrates on Government-owned industrial facilities in the private sectors (GOCO & COCO) in lieu of GOGO. However, it is cited here to portray the amount of management attention given to Government-owned plant equipment. Studies of various alternatives to improve the management of plant equipment are currently being planned or underway. The feasibility of central management for all or part of Government-owned plant equipment will be considered.

Although we share your concern for cost effective management of industrial plant equipment we do not, in general, concur with your draft report since the rationale utilized does not fully support the general impression that DoD has provided and retained more equipment

APPENDIX II

than necessary. Specific comments for each of your three recommendations are presented at Attachment 1. You will note that we only non-concur with recommendation two.

[See GAO note 1, p. 31]

Further, we do not concur in the statement, found in several places in the report, that understatement of the number of mobilization hours that machines can be loaded has resulted in retention of more equipment than is needed. We normally expect industrial equipment to be available for use around the clock in support of surge or wartime requirements. Since depot maintenance facilities are normally configured to repair specific types of equipment, even reserve capacity is needed in each one to accommodate unexpected workloads that exceed projections. For this reason, we do not plan around the clock operations. In fact, however, we do expect that around the clock operations will be able to accommodate the workload when the wartime requirements exceed the projections.

[See GAO note 1, p. 31]

As indicated in the draft report, we do not expect all work shifts to be equally productive. As with many other industries, our day shifts are normally the most productive. This fact, coupled with increased labor costs for second and third shifts, has generally supported the trend to operate only one shift in peacetime except where specific operations are capital intensive. Both of these factors must be considered in the cost analysis of any proposed investment.

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[See GAO note 1, p. 31]

One of our management by objectives is designed to review the General Reserve to insure that only essential equipment is retained. Likewise the Services have been requested to review all PEPs with the goal of reducing the number to the very minimum and then modernizing the essential items to improve productivity and production readiness. The Army also has a contracted study that is performing an in depth review of ammunition PEPs. Recent OSD and DSA audits and management actions have had an effect on the method of computing requirements for the DIPEC General Reserve and therefore cause your findings in this area to be outdated.

Attachment 2 provides some detailed comments submitted by the Services.

[See GAO note 2, p. 31]

In summary, we have instituted numerous actions that will culminate with changes to various DoD policies, as needed. All policy direction will be with the intent of fulfilling DoD responsibilities as outlined in the Defense Industrial Reserve Act of 1973.

Sincerely,

JOHN J. BENNETT
Principal Deputy Assistant Secretary of Defense
(Installations and Logistics)

Attachments:
1. OSD Position on Recommendations
2. Extracts of Service Inputs

APPENDIX II

COPY

OSD POSITION ON SPECIFIC RECOMMENDATIONS IN GAO DRAFT REPORT, DATED APRIL 1976 "MANAGEMENT OF INDUSTRIAL PLANTEQUIPMENT CAN BE IMPROVED" (OSD CASE #4330)

Summary of GAO Findings and Conclusions; Recommendations and DoD Position Thereon

A. Retention of Equipment

1. Finding. More industrial plant eqiuipment (IPE) has been retained than is necessary, since DoD has understated the number of hours that machines will be run during mobilization. DoD assumes that activities will operate on a 2-8-5 shift basis during mobilization which does not realistically estimate the actual capacity available. In addition, military activities have interpreted this assumption differently and have often overstated their equipment needs even more than envisioned by DoD.

2. Conclusion. The military services do not have workable systems for translating mobilization end-item requirements into IPE needs. IPE not currently needed should be retained only for mobilization purposes and should be limited to those items which are not expected to become available from other sources, such as DIPEC's general reserve. If DoD were to adopt more realistic planning assumptions and if mobilization requirements were more accurately determined, the excess IPE now at military activities would be quite evident.

3. GAO Recommendation. Recommend the Secretary of Defense reassess the validity of the existing criteria for planning IPE needs and develop new standardized instructions, which will help the Services establish more valid plant equipment requirements to meet their mobilization production needs.

4. OSD Position. Agree with standardized instructions for areas that are similar. The OSD planning guidance provides criteria.

The GAO data does not fully support this recommendation since DoD does not have a 2/8/5 criteria. One Army regulation mentioned that consideration should be given to 2/8/5.

Attachment #1

That Army criteria has been undergoing change since 1973. First by the Joint Conventional Ammunition Production Coordinating Group (SCAP/CG) for munitions and then:

a. DARCOM tasked ARMCOM in May 75 to develop uniform facility capacity and efficiency factors for weapon production operations. The results of the ARMCOM study were then provided to the other DARCOM subordinate commands for use as a guide in developing a DARCOM position for facility capacity and efficiency factors for all commodities.

b. As a result of the above DARCOM and JCAP efforts, the following facility capacity and efficiency factors have been developed for all commodities, and are in the process of being incorporated in the Army Planning and Programming Guidance.

(1) 120 hours per week at 70% efficiency for munition load/assemble/pack, metal parts, and small caliber commodities (364 hours per month) as well as all other commodity continuous production processes.

(2) 132 hours per week at 70% efficiency for other non-continuous production munition commodities (400 hours per month).

(3) 100 hours per week at 70% efficiency for all commodities, other than munition items, with a non-continuous production process (303 hours per month).

c. The culmination of these DARCOM efforts will be the publication and promulgation of a DA (ODCSRDA) letter providing Army supplemental guidance to the FY 78-82 Defense Planning and Programming Guidance Memorandum (PPGM), 18 February 76. This guidance, which is in the final stages of staffing at HQARMY will rescind their previous 2-8-5 guidance.

What is good for Army arsenals may not be good for Navy shipyards or Air Force depot maintenance centers. Therefore OSD will re-assess existing criteria to determine the need for publication of criteria in other planning guidance documents.

B. Acquisition of New Equipment

1. Finding. Activities are required to justify the replacement of plant equipment on the basis that the cost of

new equipment will amortize within 5 years. In their justifications, most activities projected full use of new machines, even though they did not know what the machines workloads would be by the time they were installed. Since much less than full use was generally achieved, the machines cost did not amortize wihin the required 5 years.

2. Conclusion. Activities could improve the replacement program by correcting the following problems:

a. Savings shown on justifications were often so far above actual savings that initial projections did not appear reasonable.

b. The post analysis reports were not promptly completed and did not compare actual performance during a machines first productive year with the original estimate.

c. The substitution of machines to be replaced upon installation of new machines makes savings estimates of questionable reliability.

[See GAO note 1, p. 31.]

C. Need for Central Manager

1. Finding. The Defense Industrial Plant Equipment Center lacked the visibility to obtain maximum use of IPE since many activities did not accurately or promptly report their idle equipment. Moreover, in view of the equipment set aside in plant equipment packages and selected to produce certain items, it appears that the general reserve managed by the Center is a duplication and is excess to the production capacity needed for mobilization.

2. Conclusion. A strong single manager is necessary to carry out the responsibilities that have been divided between the military services and DIPEC.

3. GAO Recommendation. Recommend that the Secretary of Defense consider the feasibility of centralizing the responsibility for IPE management to insure the soundness of providing a mobilization reserve with the resources available as Government facilities and in the private sector..

In addition, increased support should be provided to the Defense Industrial Plant Equipment Center (DIPEC) as the focal point to insure coordination of the current management.

4. OSD Position. Concur with considering the feasibility of centralizing the responsibility of all or a part of plant equipment management as relates to GOGOs. We also concur in providing DIPEC adequate staff to perform their mission. The matter of increased support will have to be considered in light of budgetary constraints.

A study of various additional alternatives to improve the management of industrial plant equipment is being planned. The feasibility of central management will be considered in that study.

We requested DSA during April 1976 to determine the feasibility of having DIPEC obtain visibility of other plant equipment as well as industrial plant equipment. The same study effort also was directed toward mechanizing data input into the DIPEC system in lieu of more costly hard copy preparation.

GAO Notes:

1. The deleted comments relate to matters which have been ommitted from this report.

2. Attachment 2 has been ommitted but the comments have been considered in appropriate sections of this report.

APPENDIX III

PRINCIPAL OFFICIALS RESPONSIBLE FOR ACTIVITIES DISCUSSED IN THIS REPORT

	Tenure of office	
	From	To
SECRETARY OF DEFENSE:		
Donald H. Rumsfeld	Nov. 1975	Present
James R. Schlesinger	July 1973	Nov. 1975
William P. Clements, Jr. (acting)	Apr. 1973	July 1973
Elliott L. Richardson	Jan. 1973	Apr. 1973
ASSISTANT SECRETARY OF DEFENSE (INSTALLATIONS AND LOGISTICS):		
Frank A. Schromtz	Feb. 1976	Present
John J. Bennett (acting)	Mar. 1975	Feb. 1976
Arthur I. Mendolia	June 1973	Mar. 1975
Hugh McCullough (acting)	Jan. 1973	June 1973
DIRECTOR, DEFENSE SUPPLY AGENCY:		
Lt. Gen. Woodrow E. Vaughn (USA)	Dec. 1975	Present
Lt. Gen. Wallace H. Robinson, Jr. (USMC)	July 1971	Dec. 1975
SECRETARY OF THE AIR FORCE:		
Thomas C. Reed	Jan. 1976	Present
James W. Plummer (acting)	Nov. 1975	Jan. 1976
Dr. John L. McLucas	June 1973	Nov. 1975
Dr. Robert C. Seamans, Jr.	Jan. 1969	May 1973
SECRETARY OF THE ARMY:		
Martin R. Hoffmann	Aug. 1975	Present
Howard H. Callaway	July 1973	Aug. 1975
Robert F. Froehlke	Jan. 1971	Apr. 1973
SECRETARY OF THE NAVY:		
J. William Middendorf	Apr. 1975	Present
John W. Warner	May 1972	Apr. 1974