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RENTAL OF INDUSTRIAL PLANT EQUIPMENT

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13. ABSTRACT

The primary purpose of the task was to investigate the suitability of rental charges for government-owned industrial plant equipment as a means for improving the productivity of these facilities. While the original scope was limited to industrial plant equipment, mostly machine tools, identical considerations apply to all government-owned facilities. The scope of the study was expanded accordingly.

It was found that rent-across-the-board would be an effective means for improving the use and utilization of facilities in contractor-owned plants while reducing government administration, and greatly reducing the pressure on the DoD to furnish facilities. Rent-across-the-board means that rent will be collected for mere possession of facilities, regardless of amount of use and regardless of whether utilized on government or commercial work. To be effective, the rates and terms of rent-across-the-board must be at parity with commercial leasing practice, and must be based upon the fair market value of the facilities. Procedures for estimating fair market value and establishing rental rates are given in the report.

Contractors will be required to select a length of lease. In correspondence with commercial practice, the fair market value of the equipment will be recovered during the lease, plus a surcharge equivalent to the commercial leasing surcharge. Since the basis of rent-across-the-board will be fair market value, it is recommended that contractors be given the option to buy at that price, or at a pro-rated price during the lease period.

To effectively administer rent-across-the-board, we recommend that a DoD working-capital fund, which we have called the Defense Facilities Fund, would be used to manage, rebuild, modernize, preserve, crate, handle, and transport the facilities in the inventory. Inventories of working-capital stock funds have decreased by as much as 50% within seven years from initiation, and we expect similar performance in this case. Rental receipts would be paid into the fund. Excesses from working-capital funds typically have been transferred to supplement DoD appropriations; the rent would be retained within the DoD with one of its uses being to offset the apparently increased procurement costs.

Rent-across-the-board will reduce the cost of government. Rent-across-the-board, set in parity with commercial practice, will result in the government collecting slightly more from contractors who have government-owned facilities than they will be permitted to recover under the Armed Services Procurement Regulation in their negotiated government contracts. In addition, important longer-range savings will be obtained by placing facilities use and utilization on a firm economic foundation, which will lead to lowered production costs of military supplies.

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RENTAL OF
INDUSTRIAL PLANT EQUIPMENT

TASK 72-14

December 1972

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SUMMARY

The primary purpose of the task was to investigate the suitability of rental charges for government-owned industrial plant equipment as a means for improving the productivity of these facilities. While the original scope was limited to industrial plant equipment, mostly machine tools, identical considerations apply to all government-owned facilities. The scope of the study was expanded accordingly.

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To effectively administer rent-across-the-board, we recommend that a DoD working-capital fund be established, paralleling those established under the authority contained in 10 USC 2208. The working-capital fund, which we have called the Defense Facilities Fund, would be used to manage, rebuild, modernize, preserve, crate, handle, and transport the facilities in the inventory. Inventories of working-capital stock funds have decreased by as much as 50% within seven years from initiation, and we expect similar performance in this case. Rental receipts would be paid into the fund. Excesses from working-capital funds typically have been transferred to supplement DoD appropriations; the rent would be retained within the DoD with one of its uses being to offset the apparently increased procurement costs.

Rent-across-the-board will reduce the cost of government. Rent-across-the-board, set in parity with commercial practice, will result in the government collecting slightly more from contractors who have government-owned facilities than they will be permitted to recover under the Armed Services Procurement Regulation in their negotiated government contracts. In addition, important longer-range savings will be obtained by placing facilities use and utilization on a firm economic foundation, which will lead to lowered production costs of military supplies.

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I. INTRODUCTION

A. PRESENT POLICY

> It is the policy of the Department of Defense that contractors will furnish all facilities required for the performance of Government contracts.[1]

Nonetheless, there are circumstances under which the Department of Defense (DoD) must provide contractors with government-owned facilities. Those circumstances arise when contractors are unwilling or unable to acquire facilities, for financial or other reasons, with their own resources; when time constraints initially require use of existing government facilities; or when the DoD wants to establish or retain capacity for mobilization.[2]

Production pressures produced by the material requirements of World War II, the Korean conflict, and Southeast Asia have resulted in government ownership of large numbers of facilities in the possession of private contractors. Although strong pressure exists against furnishing facilities to contractors, it is expected that situations will continue to arise where the government will have no choice but to do so.

In many cases, the original justification for the provision of government facilities has disappeared and the present basis for continued ownership of the facilities is diffuse.

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[1] Armed Services Procurement Regulation 13-301(a).

[2] Ibid.

Contractors may be using some of the facilities for commercial work. Although rent is charged for use of government facilities on commercial work, the DoD has been criticized for its procedures for establishing and controlling rental charges, for apparent under-utilization of the facilities by contractors, and for inequities in the distribution of facilities among contractors. Those aspects of the problem are discussed in greater detail in Section II of this report.

B. DEFINITIONS

DoD definitions of property, facilities, and material are given in Table 1.[1] Property is the most generic term. Property includes facilities, special tooling, special test equipment, government material, and military property.

For the purpose of this study, special tooling, special test equipment, government material, and military property are not further considered. Those classes of property have characteristics that make unnecessary the consideration of application of rental. This study is limited to the classes of property called real property, utility distribution systems, plant equipment, industrial plant equipment, and minor plant equipment. The generic term for those five classes is facilities and that term is used throughout the report to cover all five classes for which it is believed rental is appropriate.[2]

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[1] The definitions are abstracted from the Armed Services Procurement Regulation, Appendix B, "Control of Government Property in Possession of Contractors."

[2] This is a broader application of rental than was anticipated in the Task Order. See page 4 for an explanation of why the scope was broadened.

Table 1

DEFINITIONS

B-102.2 Government Property means all property owned by or leased to the Government or acquired by the Government under the terms of a contract. Government property includes both Government-furnished property and contractor-acquired property as defined below:

(i) Government-furnished property is property in the possession of, or acquired directly by, the Government and subsequently delivered or otherwise made available to the contractor; and

(ii) Contractor-acquired property is property procured or otherwise provided by the contractor for the performance of a contract, title to which is vested in the Government (but see B-201(e)).

B-102.7 Facilities means industrial property (other than material, special tooling, military property, and special test equipment) for production, maintenance, research, development, or test, including real property and rights therein, buildings, structures, improvements, and plant equipment.

B-102.8 Real Property, for purposes of accounting classification, means (i) land and rights therein, (ii) ground improvements, (iii) utility distribution systems, (iv) buildings, and (v) structures. It excludes foundations and other work necessary for the installation of special tooling, special test equipment and plant equipment.

B-102.9 Utility Distribution System means a system (including distribution and transmission lines, substations, and installed equipment forming an integral part of the system) by which gas, water, steam, electricity, sewerage, or other utility services are transmitted between (i) the outside of the building or structure in which the services are used, and (ii) the point of origin or disposal, or the connection with some other system. For the purpose of this Appendix, it does not include communication services.

B-102.10 Plant Equipment means personal property of a capital nature (consisting of equipment, machine tools, test equipment, furniture, vehicles, and accessory and auxiliary items, but excluding special tooling and special test equipment) used or capable of use in the manufacture of supplies or in the performance of services or for any administrative or general plant purpose.

B-102.11 Industrial Plant Equipment (IPE) is that part of plant equipment with an acquisition cost of $1,000 or more; used for the purpose of cutting, abrading, grinding, shaping, forming, joining, testing, measuring, heating, treating, or otherwise altering the physical, electrical or chemical properties of materials, components or end items, entailed in manufacturing, maintenance, supply, processing, assembly, or research and development operations; and IPE is further identified by noun name in Joint DoD Handbooks as listed in 13-312.

B-102.12 Minor Plant Equipment means an item of plant equipment having an acquisition cost of less than $200, and other plant equipment regardless of cost when so designated by the Government.

B-102.5 Special Tooling means all jigs, dies, fixtures, molds, patterns, taps, gauges, other equipment and manufacturing aids, and replacements thereof, which are of such a specialized nature that, without substantial modification or alteration, their use is limited to the development or production of particular supplies or parts thereof, or the performance of particular services. The term includes all components of such items, but does not include:

- (i) consumable property;
- (ii) special test equipment; or
- (iii) buildings, nonseverable structures (except foundations and similar improvements necessary for the installation of special tooling), general or special machine tools, or similar capital items.

B-102.6 Special Test Equipment means electrical, electronic, hydraulic, pneumatic, mechanical or other items or assemblies of equipment, which are of such a specialized nature that, without modification or alteration, the use of such items (if they are to be used separately) or assemblies is limited to testing in the development or production of particular supplies or parts thereof, or in the performance of particular services. The term "special test equipment" includes all components of any assemblies of such equipment but does not include:

- (i) consumable property;
- (ii) Special tooling; or
- (iii) buildings, nonseverable structures (except foundations and similar improvements necessary for the installation of special test equipment), general or special machine tools, or similar capital items.

B-102.4 Government Material means Government property which may be incorporated into or attached to an end item to be delivered under a contract or which may be consumed in the performance of a contract. It includes, but is not limited to, raw and processed material, parts, components, assemblies, and small tools and supplies.

B-102.21 Military Property means personal property peculiar to military operations which is under the cognizance of a military inventory control point. It includes weapons systems, components thereof, and related support equipment, but does not include items which are consumed in the performance of a procurement contract or incorporated in the end items produced under a contract (see "material" in 13-101.4).

Source: Armed Services Procurement Regulations, Appendix B.

C. SCOPE OF THE STUDY

This study was undertaken at the request of the Assistant Secretary of Defense (Installations and Logistics).[1] The purpose was to investigate the suitability of charging rental for government-owned industrial plant equipment in possession of DoD contractors, and to develop mechanisms for establishing rental rates and the recoupment of rental charges by the DoD.

While the Task Order states that the study should investigate rental of industrial plant equipment (IPE), it is clear that application of rental to only IPE would continue some of the inequities and administrative burden which rental is intended to eliminate. A large part of the administrative burden of the Defense Contract Administration Services (DCAS) and Defense Contract Audit Agency (DCAA) is the control of other plant equipment (OPE). Other plant equipment includes:

Minor plant equipment (plant equipment less than $200 in cost),

Plant equipment between $200 and $1,000 in cost, and

Plant equipment over $1,000 in cost not otherwise designated as IPE.

OPE represents property whose total acquisition cost exceeds that of the IPE ($1,933M for IPE, $2,348M for OPE, 30 June 1972).[2]

While few contractors, other than those operating government-owned, contractor-operated (GOCO) plants, have possession of government-furnished land and buildings, we believe that as long as

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[1] A copy of the Task Order is included as Appendix A.

[2] Financial Report of Government Property, Summary of DoD Contractors, 30 June 1972, Job No. 3400625, DSA Administrative Support Center, Alexandria, Virginia. The figures shown are for plant equipment in contractor-owned, contractor-operated plants and in government-owned, contractor-operated plants.

those facilities are potentially useful for commercial work they should be included in rent-across-the-board. Therefore, the study of rental has been extended to other plant equipment, real property, and utility distribution systems.

The acquisition cost and distribution of government-owned facilities in the possession of DoD contractors is shown in Table 2.

Table 2

DISTRIBUTION OF GOVERNMENT FACILITIES IN CONTRACTOR-OPERATED PLANTS
(Millions of Dollars)
30 June 1972

	LAND AND RIGHTS	OTHER REAL PROPERTY	OTHER PLANT EQUIPMENT	INDUSTRIAL PLANT EQUIPMENT
CONTRACTOR-OWNED PLANTS (COCO)	$ 82	$1,292	$1,806	$1,137
GOVERNMENT-OWNED PLANTS (GOCO)	126	1,717	542	796
TOTAL	$ 208	$3,009	$2,348	$1,933[1]

[1]INCLUDES MOBILIZATION PACKAGES ($439M), IDLE EQUIPMENT ($15M), AND DISPOSAL-IN-PROCESS ($81M). VITAL STATISTICS, DIPEC (30 JUNE 1972).

SOURCE: DSA REPORT JOB NO. 3400625, FINANCIAL REPORT OF GOVERNMENT PROPERTY - SUMMARY OF DOD CONTRACTORS, 30 JUNE 1972.

D. THE PRESENT SYSTEM

Present policies for use of government facilities in connection with procurements by Military Departments are described in the Armed Services Procurement Regulation (ASPR), Section XIII. Contractors may be authorized to use government facilities in the performance of contracts without charge if the contract authorizes it or if the contracting officer having cognizance of the equipment authorizes it. In noncompetitive bidding, where use is authorized, the contract price should take such use into consideration.

Where competitive bidding is involved, the advantage of having government-furnished facilities is intended to be eliminated through the procedures of Part 5 of Section XIII of the ASPR. Those procedures provide for the inclusion of a rental equivalent cost in evaluating bids. Other costs may also be considered in the evaluation, such as avoidance of idle equipment storage costs.

Where rent-free use is not authorized or commercial use is made of the facilities, rent is to be charged.

1. Rental Rates

Rental rates presently are set as follows:[1]

Land and buildings	"fair and reasonable rental--based on sound commercial practice"
Machine tools and secondary metalforming and cutting machines (Federal Supply Class 3405, 3408, 3410, 3411-3419, 3441-3449)	rental as a function of age from 3% to 0.75% of acquisition cost a month[2]

[1]ASPR 7-702.12, Use and Charges.

[2]

Age of Equipment	Monthly Rental Rate
0 to 2 years	3%
Over 2 to 3 years.	2%
Over 3 to 6 years.	1.5%
Over 6 to 10 years	1.0%
Over 10 years.	0.75%

All other equipment and personal property	"not less than the prevailing commercial rate" or, if no commercial rate exists:
Electronic test equipment and automotive equipment	2% of acquisition cost per month
All other property and equipment	1% of acquisition cost per month

Acquisition cost is defined as the total cost of the facilities, including installation and transportation, if the government has borne those costs.

Rental rates on land and buildings are set on a local basis, although there are only a few cases where those plants are used on commercial or non-rent-free work. The monthly rental rates listed above are used for machine tools and secondary metalforming and cutting machines. For rent of all other property, the general practice is to apply the 2% and 1% rates contained in the ASPR.

2. Rental Terms

Where the use of facilities on a rent-free basis is not authorized, the contractor may use all or part of the facilities as authorized by the contracting officer or in the contract. The measurement unit for determining apportionment of use for facilities designated by the contractor in any rental period will be "direct labor hours, sales, hours of use, or any other measurement unit which will result in an equitable apportionment of the rental charge, as may be mutually agreed to."[1] Rental periods must be greater than one month but not more than six months. The government reserves the right to terminate the use of any or all of the facilities.

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[1]ASPR 7-702.12, op. cit.

E. SCOPE OF THE REPORT

This study is directed toward finding a feasible way of charging rent-across-the-board for facilities in the possession of DoD contractors. Rent-across-the-board has been studied in depth and generally is accepted within the DoD as helping to solve the many problems incurred in the management of such facilities. Nevertheless, a brief review of the problems, and how rent-across-the-board will solve them, is included in this report as Section II.

LMI recommends that a working capital fund be established as the vehicle for administering rent-across-the-board and for retaining rental revenues within the DoD. That recommendation is presented in Section III.

Section IV provides our recommendations with respect to certain key issues that must be addressed under the rent-across-the-board concept.

Proposed methodology for establishing rental rates is given in Section V.

II. ADVANTAGES OF RENT-ACROSS-THE-BOARD

Rent-across-the-board is not a new subject and has been studied formally and extensively. There have been two ASPR cases in which this issue was investigated: one which began in December of 1954 and ended four years later in December of 1958 (Case.54-94), and the second one, which began in January of 1965 and ended in March of 1969 (Case 65-19). Both cases resulted in a number of meetings involving the Military Departments and other government agencies in addition to studies, surveys, and attempts to revise the ASPR.

In both cases it was agreed unanimously, during the early stages, that rent-across-the-board was the simplest and most desirable procedure for accomplishing the objectives of the ASPR committee which were to reduce the competitive advantage of those companies having government-owned facilities, to obtain better utilization of the facilities in the field, and to reduce the administrative burden of equipment accountability.

Several procedures were proposed during consideration of the ASPR cases, none of which seemed to fully answer the big question of competitive advantages for those companies having government facilities. No action was taken as a result of the cases.

Together with the detailed review of the ASPR cases, LMI discussed the major problems inherent in the present system with many persons both within and outside the DoD. Those problems and the expected effect of rent-across-the-board are discussed in the following pages.

A. COMPETITIVE ADVANTAGE

Companies holding government facilities have an advantage in bidding on government work. The government attempts to eliminate "the competitive advantage that might otherwise arise from the acquisition or use of government production and research property. This is accomplished by charging rental or by use of rental equivalents in evaluating bids and proposals . . ."[1]

The intent is to raise the bids of competitors who propose to use government-furnished facilities by an amount equivalent to costs incurred by a competitor who bids on the basis of furnishing his own facilities.

The projection of amount of use of government-furnished facilities is an engineering evaluation which requires a detailed engineering and cost audit to verify. The projection is easy to understate, especially since it depends in part upon the future mix of business in the contractor's plant. Therefore, a contractor may underbid his competitors. Even if the projected use were estimated exactly, the present rate structure would result in a too small dollar amount of rent compared with commercial leasing.

Present government rental rates for new machine tools are lower than commercial lease rates for lease lengths up to eight years. In Table 3 the total payment by a contractor under a commercial lease for new equipment is compared with total rental charge by the government (assuming no rent-free use) using the present system.

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[1]ASPR 13-501. Policy /on Competitive Advantage/.

TABLE 3

COMPARISON OF TOTAL PAYMENT FOR NEW COMMERCIAL AND GOVERNMENT-OWNED MACHINE TOOLS
(Sales Price = 100)

LENGTH OF COMMERCIAL LEASE - YEARS	TYPICAL COMMERCIAL	GOVERNMENT
2	114	72
3	121	96
4	132	108
5	135	120
6	140	132
7	151	144
8	158	156

For lease periods over eight years the advantage shifts to commercial leasing. However, present practice provides another incentive for use of government-owned tools. Since rent may be paid for individual facilities in rental periods (which may be as short as one month), the contractor has the option of using equipment for short periods, paying rent for only those periods and not using the equipment for commercial work in the intervening intervals. The result is to lower the effective annual rental rate. In this way the government receives less rent than would a commercial firm leasing the same facilities over the same total duration. It is expected, therefore, that if government rates and terms for rent-across-the-board are made equivalent to commercial rates and terms, the advantage would be eliminated.[1]

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[1]The report on LMI Project 66-12, Weighted Guideline Changes and Other Proposals for Incentives for Contractor Acquisition of Facilities, September 1967, also recommended the objective of government rent "approximately equal to commercial rates" (p. 6-8). That report proposed rental rate schedules based on facility life. LMI now recommends the more flexible procedures described in this report.

B. POOR UTILIZATION

Both GAO and DoD auditors have cited cases where equipment is under-utilized.[1] Some contractors refuse to use government-furnished facilities unless rent-free use is authorized. Under these circumstances facilities always will be under-utilized. Under-utilization extends facility physical life, and can result in higher costs to the government through use of obsolescent, inefficient facilities.

Some contractors are holding idle equipment which could be gainfully employed on other government production. Rent-across-the-board would place an economic penalty on under-utilization and encourage better utilization of the entire inventory of facilities.

C. LOSS OF REVENUE

Even under the current rental rate structure, there are situations in which the government should receive more rent than it does. One of these situations, cited by auditors, results from a failure to collect rent for commercial use of facilities. Contractors, knowingly or unknowingly, use government facilities for commercial production without paying rent, and the current DoD controls are inadequate to prevent such use.

Rent-across-the-board would avoid nearly all of the monitoring, auditing, and dispute arising from commercial use of

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[1] GAO Report B-140389, "Further Improvements Needed in Controls Over Government-Owned Plant Equipment in the Custody of Contractors," 29 August 1972, Washington, D. C.

government facilities by imposing a rental charge regardless of amount or mix of use.

D. REDUCTION OF RENT

Rental charges may be further reduced under the present system if the contractor is holding facilities required for mobilization. The rent is reduced by the ratio of current sales to the sales that would exist if the total mobilization base were being utilized. In one case, 30% of the rent was lost in FY 1971 for this reason.

E. COMMERCIAL ADVANTAGE

In the present system government-furnished facilities are available only to those holding government contracts. Other contractors have complained that those having government-furnished facilities may use them on commercial contracts. Even though rent is charged, the rates and terms of the rent are such that the commercial use of government-furnished facilities appears to be subsidized.

As noted in Paragraph II. A., the contractor has the option of specifying which government-owned facilities he plans to use in any rental period, and may load the facilities heavily during a period and not pay rent in other periods of the year. Since the rental period may be as short as one month, he may obtain an effective rental rate as low as one-twelfth of the annual rate. That situation has been cited as contributing to loss of rent to the government, but it also provides low cost facilities for commercial work. We believe that these rental terms are far more important to the contractor in minimizing commercial rent than the selection of a basis of allocation of rent which has been subject to criticism by the GAO.

If rent-across-the-board were charged and the rates and terms of the rents were, in fact, comparable to commercial rates, that inequity would be eliminated.

F. PHASE-OUT PROGRAM

A five-year program to cut back on the amount of IPE held by contractors has been instituted by the DoD.[1] The result has been to force contractors to invest their own capital in equipment to replace that withdrawn by the government. This has been most difficult for small contractors who have been doubly hit by withdrawal of the equipment and retrenchment of subcontract work to prime contractors' plants because of reductions in defense expenditures. The major contractors also have been better able to take advantage of mobilization requirements to retain government facilities presently partially or totally idle.

Rent-across-the-board would provide breathing room for the smaller contractor. If the rates and terms were comparable to commercial rates and terms, they would provide an incentive for phase-out of government facilities while not forcing the contractor to undertake large capital investment.

G. CUMBERSOME ADMINISTRATION

The control of facilities by the government requires surveillance and auditing of the contractor's plant, equipment, and records. Reductions in the amount of work required by property administrators, cost auditors, industrial specialists, administrative contract officers, and counsel are expected by virtue of avoiding estimations, audit and disputes over amount of use, prorations of use, and utilization of the facilities. In the present system, inspectors must determine whether adequate use is being made of facilities and how much of that use is commercial.

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[1] Defense Procurement Circular No. 80, 22 June 1970.

Rent-across-the-board would make it unnecessary to control utilization or use on commercial work. Facilities declared excess or idle could be sealed. If not sealed, rent would be charged. Allocations of rent would be made through the well-established and audited contractor overhead procedures.

H. SUMMARY

Under the concept of rent-across-the-board, DoD would charge contractors rent for the possession of government facilities, whether or not in use and whether used on government or commercial work. Rental rates equivalent to commercial rates would be established. Rent would start upon receipt of the property and cease when the contractor declared it surplus to his need. The DoD would then either pay the contractor for storage and maintenance of the idle equipment or remove it from the contractor's plant.

Rent-across-the-board would place use of government-owned facilities on a par with commercial leasing of the same equipment. There would be no advantage to the contractor in using government-furnished facilities when equivalent commercial facilities are available. Furthermore, the rent for possession of government-owned facilities would be reflected in a contractor's overhead rates, thus providing no competitive advantage in either government bidding or commercial production.

Although some contractors have much of their government business in cost reimbursement contracts, still there are advantages to charging rent-across-the-board. In the long run those contractors must be competitive in price with other contractors. To the extent that contractors compete against each other, either for commercial or government business, this competition in costs will provide pressure to improve the utilization of government-furnished property on their cost reimbursement contracts. This is so because rent will become an overhead item.

We believe that contractors want to be efficient, even when there is no price competition. In the present system, government facility costs are not visible. Rent-across-the-board will make these costs visible and will permit trade-off of facility costs against labor costs. It will also aid in making contractors' internal manufacturing cost comparisons with subcontracting costs. This latter point responds to a complaint of the smaller contractor.

Rent-across-the-board would avoid nearly all of the monitoring and auditing associated with present efforts to control and determine the amount of commercial use of facilities. Furthermore, since equipment would be leased at commercial rates over the full period that it is committed to a contractor, the government would receive revenue reflecting the full application of its facilities to commercial work.

In Section III, it is recommended that a Defense Facilities Fund be established to manage rent-across-the-board. Rent-across-the-board could be applied without the creation of the Defense Facilities Fund, but the advantages of the intensive management characteristic of a revolving fund would be lost. Intensive management is required for control of facility inventories and for orderly replacement and modernization of the facilities in the industrial and mobilization base.

III. DEFENSE FACILITIES FUND

It is clear from our review of prior studies and ASPR cases that a major impediment to charging rent-across-the-board is a concern that contractor rental costs would increase procurement appropriations, while the rent paid by the contractors would be returned to the Treasury as miscellaneous receipts, and thus lost to the DoD.

LMI recommends that a working-capital fund be established to provide an effective means for administering rent-across-the-board and for retaining rental revenues within the DoD. In this report, the recommended fund is referred to as the Defense Facilities Fund.

A proposed charter for the Defense Facilities Fund is presented in Appendix C.

A. AUTHORITY FOR THE FUND

No specific authority exists for the establishment of a Defense Facilities Fund, nor has specific authority been sought by the DoD. It appears to LMI that 10 USC 2208 might be interpreted as authority for the Secretary of Defense to establish such a fund. 10 USC 2208 states:

> . . . the Secretary of Defense may require the establishment of working-capital funds in the Department of Defense to--
>
> (1) finance inventories of such supplies as he may designate; and
>
> (2) provide working capital for such industrial-type activities, and such commercial-type activities that provide common services within or among departments and agencies of the Department of Defense, as he may designate.

> . . . The regulations may, if the needs of the Department of Defense require it and it is otherwise authorized by law, authorize supplies to be sold to, or services to be rendered or work performed for, persons outside the Department of Defense. Working-capital funds shall be reimbursed for supplies so sold, services so rendered, or work so performed by charges to applicable appropriations or payments received in cash.

LMI cannot determine whether 10 USC 2208 is a legal basis for the establishment of the Defense Facilities Fund. Therefore, it is recommended that: (1) the OSD seek such a ruling and, if the advice is adverse, (2) the OSD pursue legislation required to permit the Secretary of Defense to establish such a fund. Such action is justified, in our opinion, in view of the need for improved management of government-owned facilities in the possession of DoD contractors.

B. SCOPE AND OPERATION OF THE FUND

The Task Order limited the scope of this study to rental of IPE. However, restricting rental to IPE would continue the inequities and administrative burden with respect to other types of property that rent-across-the-board could eliminate. It also could create pressures to increase the use of other types of facilities where trade-offs could be made with IPE. Thus, we recommend that the Defense Facilities Fund be extended to all members of the government property class entitled "facilities."

The Defense Industrial Plant Equipment Center (DIPEC) maintains inventory records of industrial plant equipment. Inventory records of land and plant could be consolidated with the industrial plant equipment records. Records of land and buildings and property records for other plant equipment are maintained at contractors' plants. It is not recommended that records for other plant equipment be transferred to the Defense Facilities Fund because relatively low value items are involved and the cost of mechanizing the records would be substantial.[1] Therefore, the Defense Facilities Fund manager would execute control in two ways: item accountability for industrial plant equipment, buildings, and land; and dollar accountability for other plant equipment, using procedures similar to those of the Air Force and Navy Stock Funds.[2]

The working-capital fund should be established at the Defense Supply Agency (DSA) level. DCAS records show that the facilities held by contractors were acquired in connection with programs spread among the Military Departments and a number of DoD agencies. In addition, a contractor may possess facilities acquired on behalf of several non-DoD agencies; in fact, he may be using facilities acquired for one agency to fulfill a contract with another. This combination of multiple program use and production unrelated to funding source suggests that the administration of facilities and rent-across-the-board should be handled through a single DoD fund.

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[1]At one contractor's plant, OPE consisted of about 75,000 items with a value of $7.4M. Extrapolated to the OPE total ($1,806M), this would be about 18 million items.

[2]The charter of the Defense Facilities Fund, Appendix D, specifically limits the authority for acquisition of real property to the provisions of DoD Directive 4165.6, <u>Real Property; Acquisition, Management and Disposal</u>.

Existing inventories of facilities held by DoD contractors belonging to the government would be capitalized into the Defense Facilities Fund, based on existing property administration records. During initial years of operation, physical inventories may be required at some locations to insure complete property accountability. Also, monies now provided DIPEC for transportation, maintenance, and rebuilding of facilities would be transferred to the fund. The fund would finance acquisition of new facilities and storage of idle facilities. Revenues received from rental and sale of facilities would be retained within the fund.

C. IMPACT ON DoD APPROPRIATIONS

Experience with existing DoD working-capital funds (industrial funds and stock funds) indicates that the creation of a Defense Facilities Fund should not increase DoD appropriations.

The industrial funds have stabilized. Costs are estimated quarterly and charges to customers adjusted correspondingly. No transfer of funds from the industrial funds to other appropriations or Congressional withdrawal of funds (recisions) has taken place since 1965.[1]

In the stock funds, on the other hand, the Congress, since 1963, has rescinded $263M and permitted transfer of $3,428M to other appropriations while appropriating $2,637M to the funds.

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[1]The annual Department of Defense Appropriations Act usually permits the Secretary of Defense, with the approval of the Office of Management and Budget, to transfer funds among the working-capital funds and from the working-capital funds to other appropriations. See Sections 736 and 739, Department of Defense Appropriations Act, 1972.

In other words, the funds have generated a net surplus which has been used to either reduce stock fund appropriations or supplement other appropriations. The trend is expected to continue in FY 1972 with transfers out of the stock funds of about $500M. A history of transfers and recisions is given in Table 4.

TABLE 4

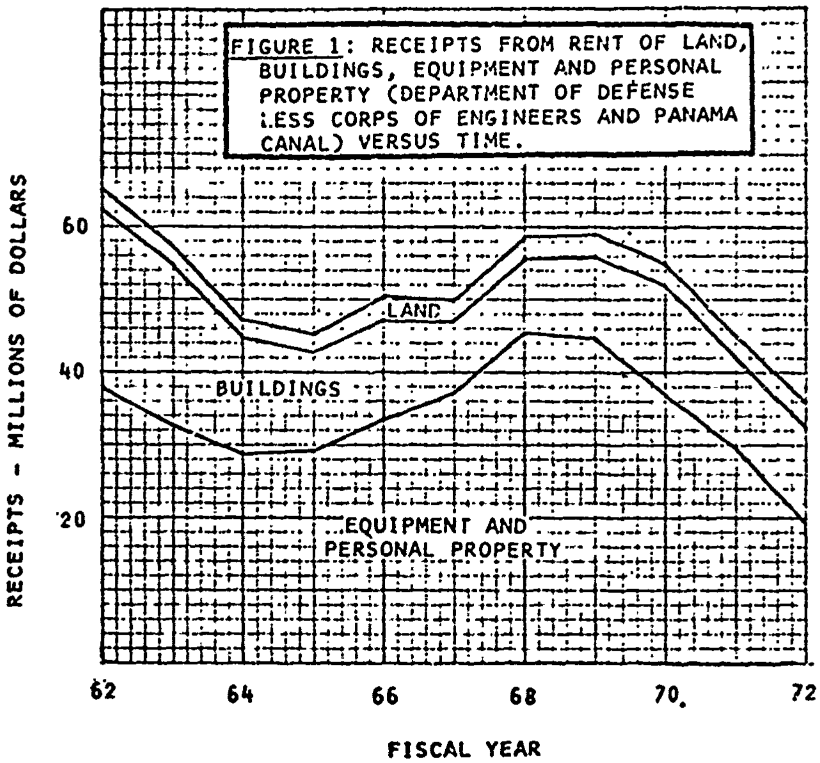
APPROPRIATIONS, RECISIONS, AND TRANSFERS OF THE DEFENSE STOCK FUNDS, FY 1950-1971
(Millions of Dollars)

FISCAL YEAR	CONGRESSIONAL APPROPRIATIONS	CONGRESSIONAL RECISIONS	TRANSFERS FROM OTHER APPROPRIATIONS	TRANSFERS TO OTHER APPROPRIATIONS
1950-1963	663	3,049	1,420	2,899
1964	0	0	0	171
1965	0	0	0	193
1966	0	0	0	30
1967	535	0	0	0
1968	178	0	0	0
1969	0	0	0	1,510
1970	1,924	263	0	1,198
1971	0	0	0	326

SOURCE:
WORKING CAPITAL FUNDS OF THE DEPARTMENT OF DEFENSE (SEC 405, PL 216 (10 USC 2208))
OASD (COMPTROLLER), WASHINGTON, D. C., ANNUAL

Under present practice, rent is received for commercial use of government facilities. While it appears that some rent has been lost because of limited surveillance of contractor use, through reductions in rent permitted by questionable bases of allocation and through reductions in rent allowed to preserve mobilization capabilities, the amount of rent collected has been significant. These rents have been returned to the Treasury as Miscellaneous Receipts. The rent has averaged about $55M per year, over the last ten years, but in FY 1972 has fallen below $40M, as shown in Figure 1.

FIGURE 1: RECEIPTS FROM RENT OF LAND, BUILDINGS, EQUIPMENT AND PERSONAL PROPERTY (DEPARTMENT OF DEFENSE LESS CORPS OF ENGINEERS AND PANAMA CANAL) VERSUS TIME.



SOURCE:

RECEIPTS, EXPENDITURES AND BALANCES OF THE U. S. GOVERNMENT, DEPARTMENT OF THE TREASURY, WASHINGTON, D. C., ANNUAL

If the Defense Facilities Fund is chartered, these rental receipts would be retained in the fund.

D. IMPACT ON INVENTORY OF FACILITIES

LMI believes that the inventory of facilities comprising the Defense Facilities Fund will decline rapidly once the fund is established. That conclusion is based upon an examination of the history of a number of DoD stock funds.

LMI examined the performance of inventories of a number of stock fund divisions. The fund divisions were selected on the basis of the following criteria:

- Operation began and continued in a period not affected by the Korean or Southeast Asia operations (generally between 1954 and 1962).
- The character of the division did not change during the period.

Performance was measured using dollar value of inventories (including peacetime operating, economic retention, mobilization reserve, contingency retention, and excess and surplus). No adjustment was made for inflation or for items subsequently capitalized into the fund division; both of those factors result in an understatement of performance.[1] The performance of those divisions is displayed in Figure 2, which gives inventory levels as a percent of the peak division inventory value against time measured in years from the start of the division. Figure 2 shows that the inventory reached a peak within three years from the start, and then declined to a value of from 25% to 70% of the peak (on the average about 50% of the peak) within five years.

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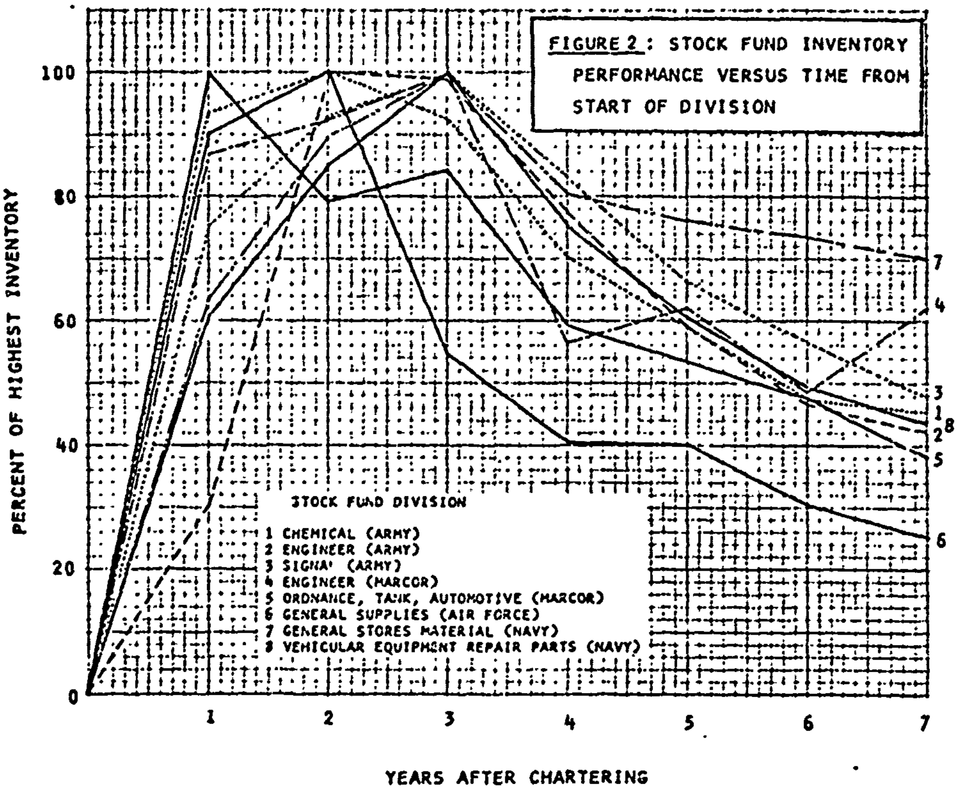
[1]Every fund division examined experienced some capital additions for the years examined.



SOURCE:
WORKING CAPITAL FUNDS OF THE DEPARTMENT OF DEFENSE (SEC. 405, PL 216 (10 USC 2208)) OASD (COMPTROLLER), WASHINGTON, D. C., ANNUAL

While facilities are not directly comparable to the consumable items that make up the inventory of stock funds, the forces affecting the level of inventory in the proposed Defense Facilities Fund are expected to be identical to those of stock funds. Those forces include:

- Centralized management
- Increased visibility of performance of management of fund inventories
- Customer cost consciousness

IV. KEY POLICY CONSIDERATIONS FOR USE OF RENT-ACROSS-THE-BOARD

Use of rent-across-the-board, under the Defense Facilities Fund, will require that a number of issues be resolved. LMI has not attempted to suggest resolutions of all such matters; however, there are several key issues on which explicit policy must be stated. They are:

- Percentage of Commercial Work Allowed
- Mobilization Facilities and the Contractor
- Mobilization Facilities and the Military Departments
- Allowability of Government Rental Charges and Application of General and Administrative Expense and Fee
- Reservation of Priority for Government Work
- Special Equipment Programs (Elephant Tools)
- Government-Owned Plants
- Sales of Facilities
- Replacement of Faciliites
- Risk

A. PERCENTAGE OF COMMERCIAL WORK ALLOWED

Government facilities are furnished because they are needed for the execution of proposed contracts and the contractor is unwilling or unable to furnish the facilities. There may be many reasons for that unwillingness, including speculation that the production run will be short and that no commercial or additional government work can be foreseen beyond the impending contract. If the facilities are provided, it is typical that, as time passes, some commercial work is done in the plant.

Current regulations permit the use of government-furnished facilities for commercial work of up to 25%.[1] Exceptions are routinely granted to the 25% limit. Rental is charged for use of the government facilities on commercial work. As has been stated earlier, there are advantages to the contractor in using the facilities under the government's rates.

It is possible that the contractor's mix of business may change to such an extent that it may be all or nearly all commercial. However, under the rent-across-the-board concept, where the government's rates would be set at parity with commercial rates, there would be no reason to impose any limitation on the amount of commercial business, even up to 100%, and LMI recommends that 100% use on commercial work be permitted.

B. MOBILIZATION FACILITIES AND THE CONTRACTOR

Government facilities held by a contractor and required for mobilization require special consideration. If in full use, no problem will arise. If partial use is proposed, under rent-across-the-board, the government must either reduce the rent correspondingly or require the service with the mobilization requirement to execute a special agreement with the contractor to pay the difference in rent. In either case a determination of percentage of use must be made, which is the very situation which should be avoided.

We recommend that the contractor be required to choose between use and no-use. That is no more difficult than the decision to declare a presently held equipment idle. If in use,

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[1] ASPR 13-405. Non-Government Use of Industrial Plant Equipment. Defense Mobilization Order (DMO) 8555.1A.

rent would be charged. If not in use, but held for mobilization, the contractor would be paid for storage and maintenance. We believe that this recommendation, while permitting a diseconomy from the national viewpoint by prohibiting partial use of the government equipment held for mobilization, is the only practicable method for considering mobilization reserves.

C. MOBILIZATION FACILITIES AND THE MILITARY DEPARTMENTS

Mobilization facilities which are in use will occasion rent as part of an economic system which should be self-regulating. No comparable system can be found for control of mobilization facilities which are idle.

There are two classes of mobilization facility: those dedicated to the manufacture of an identified product and those in unassigned reserves. Examples of the former are Package Plants, Standby Lines, and Active Base Packages.[1] Methods have been developed for analysis of alternative designs of facilities dedicated to production of a product, including whether it pays to have them at all.[2] The methods are based upon comparing the cost to maintain a production line with the cost of stockpiles to satisfy immediate post-D-Day requirements. The methods require cost input data and estimation of the peacetime and wartime durations. Thus, a decision-aiding mechanism exists for facilities dedicated to manufacture of a product.

No such aid exists for facilities which are not associated with a product. If the onset of an emergency is rapid, the leadtime required for the production of plant equipment may not

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[1] DoDI 4215.1, "Production Equipment Retention and Maintenance," 25 February 1959.

[2] LMI Report, "Condition and Operation of DoD Ammunition Production Facilities," Task 68-19, Phase II, July 1970.

be sufficient. In those cases--the Korean build-up, for example--the general machine tool reserve has been put to use.

Since management of both of these classes of mobilization facility can only be an administrative process, we see little value in applying rent-across-the-board to idle assigned or unassigned facilities.

D. <u>ALLOWABILITY OF GOVERNMENT RENTAL CHARGES AND APPLICATION OF GENERAL AND ADMINISTRATIVE EXPENSE AND FEE</u>

If rent-across-the-board were instituted, and the rates and terms made comparable to commercial practice, we believe that equity demands that the government rental charges be allowable to the same extent as commercial leasing charges.[1] Similarly, general and administrative expense and fee would be applicable, consistent with the contractor's accepted accounting practice.

E. <u>RESERVATION OF PRIORITY FOR GOVERNMENT WORK</u>

It usually is assumed that if the government rents or leases facilities to contractors, the government must reserve the right of first priority to manufacturing operations carried out using those facilities.

The reservation of first priority and the consideration that must be given if the reservation is demanded by the government makes the setting of rental rates difficult because the consideration to be given is difficult to define. Furthermore, under law, the government can demand priority of manufacture of defense material in cases of national

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[1]ASPR 15-205.34, <u>Rental Costs (Including Sale and Lease-back of Property)</u>.

emergency.[1] Also, where facilities are in fact required as a mobilization reserve, they may be so designated.

Therefore, it is recommended that no priority for government use be included in rental agreements, and that the basis for the setting of rental rates and terms be strict comparability to commercial practice.

F. SPECIAL EQUIPMENT PROGRAMS (ELEPHANT TOOLS)

There are some heavy equipments--forging presses, extrusion presses, etc.--that are unique in that the installation or removal costs are substantial fractions of the cost of the equipments. Under peacetime conditions, such equipments are only partially utilized. Therefore, if the government were to insist upon rent-across-the-board, the contractor might not be able to foresee adequate volume of business to absorb the full rent, and elect not to keep the equipment. In these special cases, that may not be to the benefit of the government.

In some of these cases, present arrangements are to execute special leases with contractors.[2] Examples are the Air Force heavy press program and Navy lease of dry docks.

In the Air Force heavy press program, new arrangements for special leases are planned. These arrangements will be aimed at assuring contractors a fair rate of return on the investment they have in facilities commingled with Air Force equipment. The rental rates to be charged by the Air Force will be based upon the volume of business anticipated for the combined facilities. In the Air Force plan the allocation of rent to individual contracts is by hours of use.

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[1] 50 USC 468.

[2] 10 USC 2667.

It is recommended, in those special cases now covered by leases under 10 USC 2667, the Contract Administration Service responsible for that plant be authorized by the fund manager to negotiate rental rates for the equipment on an annual basis to apply for the succeeding year. The field administrator is in the best position to examine usage trends and to evaluate the contractor's estimates of future business. It is recommended that the basis for rental sharing be fixed upon hours of use. That is, the government's share of rent be hours of use for government work divided by hours of use for both government and commercial use. This recommendation is consistent with the GAO position.[1] This facility class is the only one for which we recommend utilization records be kept.

G. <u>GOVERNMENT-OWNED PLANTS</u>

Rent-across-the-board should be applied to all situations where the management organization has the freedom to make capital-labor trade-offs. We see little point in extending rent-across-the-board to situations where that freedom does not exist--as in the case of government-owned, contractor-operated plants.

It is recommended that the initial application of rent-across-the-board be limited to contractor-owned plants. The management of government-owned plants should be examined to determine whether authority to make adequate capital-labor trade-offs at the operating level can be delegated to the plant managers. If so, both GOGO and GOCO plants should be included in the Defense Facilities Fund.

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[1]GAO Report B-140389, <u>op. cit</u>., p. 40.

H. SALES OF FACILITIES

Since the basis of the rent to be collected by the Defense Facilities Fund will be fair market value, it should be acceptable to sell the equipment at the fair market value. During the lease the contractor should be allowed to buy the facilities at any time at a price equal to the unrecovered fair market value.

A typical provision of commercial leases is that the lessee may buy the equipment at the end of the lease at a value not to exceed 10% of the initial value. It is suggested that the fund be authorized to sell the equipment at the end of the rental period at some small percentage of the initial value. If it is found that the fund cannot be given the authority to sell, it is recommended that after the end of the agreed-upon lease period rental continue to be charged at a rate which covers the costs of administration of the facilities by the fund.

I. REPLACEMENT OF FACILITIES

While the establishment of a Defense Facilities Fund will provide centralized management of facilities, guidelines must be set for the replacement of facilities.

Table 5 gives historical replacement ratios for selected Standard Industrial Classification (SIC) coded industries. The table presents ratio of expenditures for new machinery and equipment to the gross book value at year's end. Gross book value corresponds to the acquisition cost of all fixed depreciable assets, plus transportation and installation costs. Non-depreciable assets, such as inventories and intangible assets, are excluded. The data source states that the 1967 gross book values may be understated, which would make the presented ratios high in that year.

TABLE 5

RATIO OF ANNUAL EXPENDITURES FOR NEW MACHINERY AND EQUIPMENT TO ACQUISITION COST OF MACHINERY AND EQUIPMENT FOR SELECTED SIC CODE INDUSTRIES IN PERCENT

SIC CODE	INDUSTRY	1967	1968	1969	1970
1925	COMPLETE GUIDED MISSILES[1]	14.0	12.3	11.9	7.8
1929	AMMUNITION, EXCEPT FOR SMALL ARMS, N.E.C[1]	17.3	11.6	9.7	8.2
1931	TANKS AND TANK COMPONENTS[1]	9.2	7.5	3.8	3.2
1951	SMALL ARMS[1]	11.0	12.5	8.7	7.2
1961	SMALL ARMS AMMUNITION[1]	5.0	8.6	7.0	6.3
1911	GUNS, HOWITZERS, AND MORTARS[1]				
1941	SIGHTING AND FIRE CONTROL EQUIPMENT[1]	15.6	12.5	9.8	7.6
1999	ORDNANCE AND ACCESSORIES, N.E.C.				
3573	ELECTRONIC COMPUTING EQUIPMENT	18.7	18.2	27.8	19.9
3611	ELECTRIC MEASURING INSTRUMENTS	14.5	15.8	16.0	17.0
3621	MOTORS AND GENERATORS	13.5	10.7	11.8	11.8
3661	TELEPHONE AND TELEGRAPH APPARATUS	[illegible]	11.9	15.2	19.4
3662	RADIO AND TV COMMUNICATION EQUIPMENT[2]	15.1	16.0	13.6	11.6
3711	MOTOR VEHICLES	7.7	8.2	9.3	7.4
3712	PASSENGER CAR BODIES				
3721	AIRCRAFT	25.4	17.1	18.4	8.6
3722	AIRCRAFT ENGINES AND ENGINE PARTS	19.0	14.3	9.7	7.2
3723	AIRCRAFT PROPELLERS AND PARTS	18.6	14.8	13.6	6.4
3729	AIRCRAFT EQUIPMENT, N.E.C				
3731	SHIP BUILDING AND REPAIRING	8.9	8.5	8.5	9.1
3811	ENGINEERING AND SCIENTIFIC INSTRUMENTS	11.4	10.3	10.1	(S)

NOTES:

[1]INCLUDES DATA ONLY FOR PRIVATELY OWNED AND/OR OPERATED ESTABLISHMENTS. GOVERNMENT OWNED AND OPERATED ESTABLISHMENTS ARE EXCLUDED.

[2]EXCLUDES RADIO AND TV RECEIVING SETS.

N.E.C. = NOT ELSEWHERE CLASSIFIED.
(S) = DATA NOT GIVEN

SOURCE:

U.S. BUREAU OF THE CENSUS, ANNUAL SURVEY OF MANUFACTURES: BOOK VALUE OF FIXED ASSETS, RENTAL PAYMENTS FOR BUILDINGS AND EQUIPMENT, AND LABOR COSTS, U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C., (ANNUAL)

U.S. BUREAU OF THE CENSUS, ANNUAL SURVEY OF MANUFACTURES; EXPENDITURES FOR PLANT AND EQUIPMENT, U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C., (ANNUAL)

It may be seen from Table 5 that the new acquisition rate ranges from a low of 3% to a high of 28%, depending on the industry involved. The ratio for all industries in SIC codes

19 and 35 through 39 was 13.1% in 1967, 11.1% in 1968, 12.0% in 1969, and 10.2% in 1970.[1] Since the defense industry should be in the forefront of technology of production, an average of from 15 to 20% seems appropriate. Also, since these are industry averages, higher individual company acquisition rates may be justified. Individual cases in the 30 to 40% range may be justifiable. While such rates may appear high, it should be remembered that rent-across-the-board will be charged to recover the full cost of facilities, and that contractors will consider the proposed acquisition of facilities on an economic basis comparable to that used if they were acquiring the facilities themselves.

Replacement should be encouraged under this program, especially since the rules of cost type contracting support cost incurrence and the present lack of recognition of the cost of investment in capital assets means that cost type contracting will tend to be labor intensive.[2] The inclusion of

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[1]Industry groups are:
35 - Machinery, except electrical
36 - Electrical equipment and supplies
37 - Transportation equipment
38 - Instruments and related products
39 - Miscellaneous manufacturing industries
19 - Ordnance and accessories

[2]It is understood that recognition of contractor capital in computation of negotiated profit is planned in a forthcoming revision of the Weighted Guidelines (ASPR 3-808.2). However, contractor capital cannot be the sole determinant of profit, and to the extent it is not, cost type contracting will continue to tend to be labor intensive.

rent in the cost elements will aid in restoring the appropriate capital-labor balance. Replacement should also be encouraged because the average age of government-owned industrial plant equipment is greater than 19 years.

> The ownership of the plants and plant equipment encourages the unwarranted belief that the Department [of Defense] has a viable industrial mobilization base that can increase production of vital war materiel on short notice. Experience in the Korean War and the Vietnam War indicates that the continuing rapid advance of technology is changing both production techniques and the items which must be produced at a rate that renders much of the equipment currently owned by the Department so outmoded that it has no utility or is hopelessly inefficient.[1]

J. RISK

Cases will arise where contractors will say that they do not wish to enter into fixed term rental agreements with the government because of the risk of being unable to maintain a contract base large enough to sustain the rental payments. Their bargaining position arises from the government's need to have the product that they manufacture.[2]

If many exceptions are granted rent-across-the-board will fail. The present inequities will be exacerbated because contractors not powerful enough to challenge the DoD will be paying higher rents. If rent-across-the-board is adopted by

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[1] "Report to the President and the Secretary of Defense on the Department of Defense," Blue Ribbon Defense Panel, 1 July 1970, p. 96.

[2] In many cases, subcontracting of the work requiring facilities will resolve the issue. However, it is expected that some contractors will still refuse to enter into rent-across-the-board agreements.

the DoD, the DoD must be willing to withdraw or withhold facilities from contractors who will not enter into rental agreements.

A secondary risk may occur where contractors enter into agreements with the government to pay rent for a stated period and later decide to break the agreement. Here again, the government must face the issue and be willing to bring suit to enforce the agreement. If that form of default is allowed, then the contractors will view government rental as less risky than a commercial lease and opt for it, thus, continuing the pressure for the DoD to furnish facilities.

V. PROPOSED PROCEDURES

A. RENTAL RATES AND TERMS

The principle for setting rental rates and terms is parity with commercial rental practices. To the extent that the rental rates and terms depart from parity, the inequities discussed earlier will continue.

While there are a few rental companies, the equipments rented are ones which are readily disposable in the used equipment market, and the rates charged by rental companies are higher than the principals in this field, the finance leasing companies.[1] In general, the finance leasing companies are not much concerned with what is leased; they only supply the money with which to lease the equipment and the lease is merely a form of purchase agreement. Typically, the lease provides for an option to purchase at a small percentage of the acquisition cost at the end of the lease. A direct purchase agreement would be subject to less favorable tax treatment by the Internal Revenue Service.

We have examined the leasing rates and conditions of a number of leasing companies. They are remarkably similar in structure. Typical payment schedules are given in Table 6. In general, the lessee also pays for transportation, installation, insurance, taxes, and maintenance.

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[1] Henry G. Hamel, "Leasing in Industry," Studies in Business Policy, No. 127, The National Industrial Conference Board, Inc., New York, N. Y., 1968.

TABLE 6

MONTHLY RENTAL RATES OF LEASING COMPANIES
(Percent of Equipment Costs)

LIFE OF LEASE - MONTHS	EASTERN INDUS-TRIAL LEASING CORP.	GENERAL ELECTRIC CREDIT CORP.	NATIONAL LEASING CO.[1]	C.I.T. LEASING CORP.	EQUILEASE CORP.[2]	MACHINE TOOL LEASING CO.	CONTINENTAL LEASING CORP.	CINCINNATI MILACRON[3]
12							8.85	8.79
24	4.70						4.75	4.63
36	3.35	3.27	3.36	3.32		3.35	3.35	3.24
48	2.65		2.67				2.75	2.54
60	2.25	2.17	2.22	2.22	2.20		2.25	2.13
72							1.95	
84					1.70		1.80	
96							1.65	
120				1.44				

[1]RATES IN EFFECT WITH THIS COMPANY ON JANUARY 1961.

[2]ADVERTISED AS "SPECIAL RATES" AT THE INTERNATIONAL MACHINE TOOL SHOW, 1972 (FOR EQUIPMENT COSTING BETWEEN $10,000 AND $20,000).

[3]MACHINE TOOL BUILDER.

The nominal surcharge rate per annum corresponding to the monthly payment schedules given in Table 6 is a high rate of approximately 12.5% (CLC), and a low rate of about 10% (Cincinnati Milacron). Note that the low rate is offered by an equipment manufacturer. LMI recommends that a nominal surcharge rate per annum of 12% be used.

To increase his return on capital, the lessor is able to take advantage of the 7% investment credit, shortened life schedules, and accelerated depreciation permitted by the Internal Revenue Service.

B. DEPRECIATION LIFE VERSUS ACTUAL LIFE

In comparisons of government-owned facilities with privately-owned facilities, the distinctions between depreciation life and facility life, and between net book value and market value are important.

For purposes of regularizing business expense calculations for depreciation, the Internal Revenue Service published, in 1942, tables of average facility lives.[1] The tables contained best estimates of the lives of classes of equipment. The lives could be used to compute depreciation expense for income tax purposes by one of several allowable methods (straight-line, sum-of-the-year digits, or double-declining balance). In 1962, to encourage investment in facilities, the regulations were revised to reduce facility lives by 30%.[2] Again, in 1971, the regulations were revised to permit an additional plus or minus 20% change in facility life.[3] Those revisions, as well as others, contained provisions which liberalized other facets of facility expense, such as salvage value limitations.

It is clear that the life used in depreciation calculations and, consequently, the value of equipment as carried in corporate books may be unrelated to the actual value of the equipment.

It would be most desirable, then, for DoD to base rental rates upon the actual value of the facilities subject to rent-across-the-board. One representation of that value is fair market value.

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[1]"Income Tax, Depreciation and Obsolescence, Estimated Useful Lives and Depreciation Rates," Bulletin F, U. S. Treasury Department, Internal Revenue Service, 1942.

[2]"Depreciation Guidelines and Rules," Publication No. 456, U. S. Treasury Department, Internal Revenue Service, July 1962 (Rev. August 1964).

[3]"Asset Depreciation Range (ADR) System," U. S. Treasury Department, June 1971.

DoD policy supports that viewpoint:

> Lease or Sale. Where federally-owned resources are leased or sold, a fair market value shall be obtained. Fair market value will be determined by the application of sound business management principles and, so far as practicable and feasible, in accordance with comparable commercial practices. Charges based on fair market value need not be limited to the recovery of costs; they may produce net revenues to the Government.[1]

C. FAIR MARKET VALUE

We have recommended that rental rates of used equipment in place be based on fair market value. There are many definitions of fair market value including, in descending order of size:

- Insurance valuation
- Price paid to a used-machinery dealer
- Price obtained at a well-advertised auction or through well-advertised, sealed bidding
- Price paid by a used-machinery dealer
- Price obtained at a forced liquidation sale

Fair market value is dependent upon the condition of the equipment, as well as upon market conditions, that is, demand for equipment, order lead time for new equipment, availability of used equipment, etc. Fair market value may also include costs of transportation and installation.

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[1] DoD Instruction 7230.7, User Charges.

LMI recommends that the fair market value be the sum of two items. The first item is the price for the equipment that would be obtained at a well-advertised auction. The second item is shipping and installation charges, which average about 5% of new equipment cost. Shipping and installation costs should be brought to current dollars but reduced by the ratio of the price of the equipment described above to the price of a new equivalent equipment. The principle here is that fair market value should be the cost of the equipment, in operating status, to a knowledgeable buyer. Original installation and transportation may be reduced by the corresponding equipment's decline from original cost because those are commonly capitalized costs.

The logic for the selection of this definition of fair market value rests on the following. The fair market value not installed is the price for which it could be sold to a knowledgeable buyer by a knowledgeable seller with no undue pressure to buy or sell. If a buyer other than the possessor bought it, he would incur transportation and installation costs. Since the possessor has it installed already, he has some advantage. It is suggested that that advantage should be represented by the original installation and transportation costs expressed in current dollars, but reduced by the ratio of fair market value to the present replacement cost, since at the end of the life of the equipment the installation and transportation have no value.

Appraisal companies keep files of prices of used equipment as a means of establishing fair market value. (A number of the DCASR also keep records of prices obtained at government auctions for use in setting floors for later auctions.) The appraisal companies classify equipment in 50 to 100 categories. Since establishing rental fair market value will usually involve many equipments in a plant, classification can be much broader--individual equipment variables will average out.

D. COST OF APPRAISAL

We recommend that DoD establish a general method for estimating fair market value of facilities, similar to the one presented in Appendix D, but expressed in more categories of equipment. Nevertheless, the facilities in any given plant, either individually or collectively, may be in much better or worse condition. To resolve those cases we recommend that the contractor or contract administrator be permitted to ask for an appraisal. (We do not recommend appraisal in every case because of the limited number of appraisal companies.) The General Services Administration contracts about half its appraisal load and has experienced costs of less than 0.3% of fair market value.[1] At that same rate, the cost of appraisal of all facilities in COCO plants would be less than $7M.

E. REFURBISHMENT, MODERNIZATION, REPLACEMENT, AND EXPANSION

Refurbishment, modernization, and expansion are considered together because they are regions along a continuum rather than separable items. For example, the rebuilding of a machine tool may include the substitution of a higher horsepower motor which provides for greater depth of cut and,

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[1]Appraisal costs for machinery equipment and real estate:

		FY 1969		
Acquisition:	Fair market value	$559M	Appraiser's fee	$0.153M
Disposal:	Fair market value	$418M	Appraiser's fee	$0.600M
		FY 1970		
Acquisition:	Fair market value	$105M	Appraiser's fee	$0.167M
Disposal:	Fair market value	$227M	Appraiser's fee	$0.500M

therefore, output. The modernization of a machine tool may involve the addition of a numerical control capability, increasing both quantity and quality of output. The replacement of several conventional tools with a numerical control tool may provide substantially greater output than the sum of that produced by the tool, replaced, although the replacement costs are equivalent. The distinction between any of the above and expansion of capacity is impossible to delineate.

The criterion for replacement, modernization, or refurbishment and facilities expansion should be based upon the analysis used to justify the expenditure. Economic analysis of the alternatives using the identical production requirement will lead to selection of the best alternatives. The list of best alternatives may then be ranked in priority by the Military Departments whether the alternatives are refurbishment, modernization, or replacement.

The present system of initiating equipment changes--the proposal by the contractor, the approval of the Military Department and the approval by the Office of the Secretary of Defense--is a good one. The system should be continued. However, under the Defense Facilities Fund we recommend that a dollar amount be established each year for the total of refurbishment, replacement, and modernization of facilities, at a rate of from 15 to 20% of the projected inventory in the year. That dollar amount should then be allocated among the Military Departments, which will continue to have the authority to assign priorities within that amount. Under the present system dollar ceilings are set for individual plant locations, above which the plan must be reviewed and approved by the

ASD(I&L), or DDR&E.[1] Under the Defense Facilities Fund the same procedure would apply but Departmental approval would be authorization for the fund manager to proceed with acquisition of the facilities.

F. CENTRALIZED PROCUREMENT OF FACILITIES

Many facilities are unique to production of individual products, and are best purchased for the government by the contractor who will employ the facility. Nevertheless, there are many general purpose machines purchased by the Military Departments and DoD agencies and contractors under widely varying specification and contracting methods.[2]

To distinguish between those two classes of equipment, Form DD 1419, DoD Industrial Plant Equipment Requisition, could be modified to indicate DIPEC approval of local purchase, where that exception is appropriate. The Defense Facilities Fund Manager should direct what items, by Federal Stock Class, should be required to be centrally procured.

G. ESTIMATED RENTAL RECEIPTS

While few data are available to describe the makeup of other plant equipment, the DCAS has stated that it is distributed in type much like the industrial plant equipment. Therefore, the overall rate obtained for industrial plant equipment could be used to compute the rent for other plant equipment.

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[1] DoD Directive 4275.5, 3 December 1971, requires ASD(I&L) approval for projects exceeding $5M, and DDR&E approval for research and development facilities exceeding $1M.

[2] "Study on Feasibility of Central Procurement of IPE," Defense Supply Agency, Defense Industrial Plant Equipment Center, Memphis, Tennessee, August 1965.

The distribution of industrial plant equipment is concentrated in a relatively small number of Federal Stock Classes (FSC). Table 7 gives the value of classes exceeding one percent of the total. In order to estimate the rent that would be collected, we have placed these classes in groups which reflect the differing diminutions of value with age. Those groups of Industrial Plant Equipment are:

- Metal Forming Machines (3441-3444)
- Metal Cutting Machines (3408, and 3411-3419, except Numerical Control)
- Numerical Control (in 3411-3419, and 3408)
- Special Purpose Equipment (all others)

TABLE 7

COMPOSITION OF ACTIVE INDUSTRIAL PLANT EQUIPMENT IN CONTRACTORS' POSSESSION (COCO AND GOCO PLANTS)

30 April 1972

FSC	TITLE	NO. ITEMS	ACQUISITION COST ($M)	PERCENT COST
3408	MACHINING CENTERS	642	65	4.36
3411	BORING MACHINES	3,148	165	11.07
3413	DRILLING MACHINES	4,026	37	2.50
3414	GEAR CUTTING MACHINES	863	21	1.39
3415	GRINDING MACHINES	5,994	81	5.43
3416	LATHES	8,264	147	9.88
3417	MILLING MACHINES	6,649	226	15.18
3424	HEAT TREATING EQUIP.	2,471	59	3.95
3441	BEND & FORM MACHINES	1,496	30	2.00
3442	HYD & PNEU PRESSES	1,153	121	8.10
3443	MECHANICAL PRESSES	2,902	48	3.23
3690	SPEC ORDNANCE MACHINES	4,311	57	3.83
6625	ETE	38,426	113	7.58
6635	PHY PROP TEST EQUIP	6,470	51	3.43
6636	ENVIRONMENTAL CHAMBERS	2,351	46	3.11
6650	OPTICAL INSTRUMENTS	2,542	15	1.00
	SUBTOTAL (16 CLASSES)	91,708	1,283	86.07
	ALL OTHER (49 CLASSES)	24,600	208	13.93
	TOTAL (65 CLASSES)	116,308	1,491	100.00

SOURCE: DIPEC - AGE DISTRIBUTION, REPORT CONTROL SYMBOL VBAO 7452, 30 APRIL 1972. DEFENSE INDUSTRIAL PLANT EQUIPMENT CENTER, MEMPHIS, TENNESSEE.

The decrease in value with age (expressed as a percentage of replacement cost) is given in Figure 3. These data are a composite of appraisal company personnel opinion, opinions of used-equipment dealers and data from reports of prices obtained at auction. The curves are generalizations, but LMI believes they do reflect the relative value of categories of equipment with age. The condition of equipment is assumed as good. The value of any individual piece of equipment may vary from the figures given down to zero as a function of condition. However, both appaisers and used-equipment dealers have stated that government equipment is generally in at least as good condition as contractor-owned equipment. The curves require refinement prior to their use for establishing rental rates for rent-across-the-board.

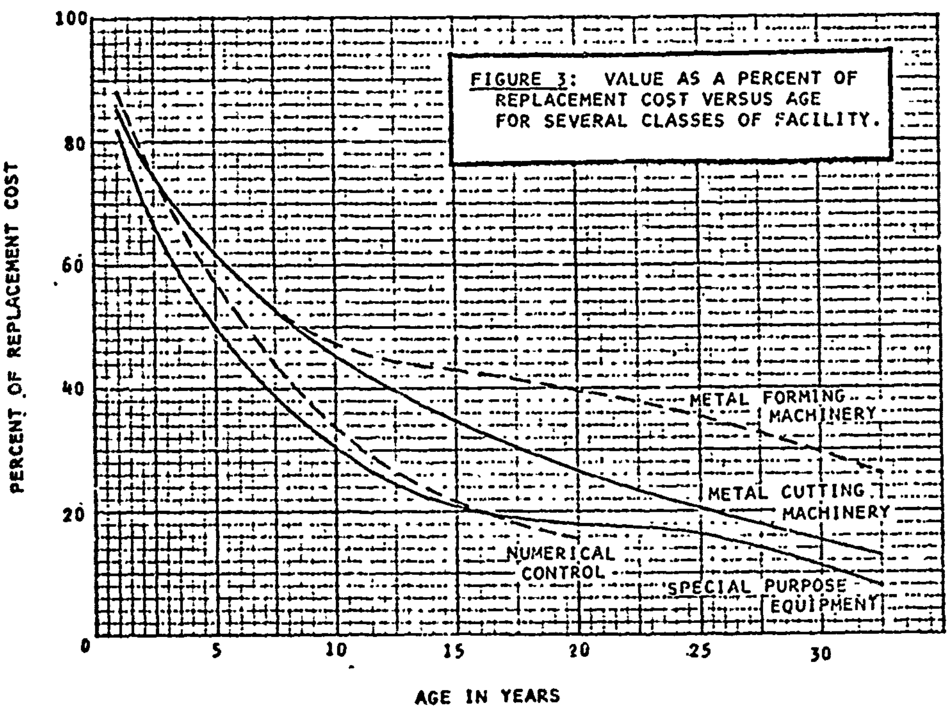

FIGURE 3: VALUE AS A PERCENT OF REPLACEMENT COST VERSUS AGE FOR SEVERAL CLASSES OF FACILITY.

SOURCE: LMI SURVEY

The refined curves would then be combined with factors which reflect the translation of acquisition costs to replacement costs. We have used the Gross National Product (GNP) Implicit Price Deflator to do so.[1] The details of the computations are given in Appendix D.

The compositi . and distribution of other plant equipment is assumed comparable to that of industrial plant equipment. Rent for land and buildings should be determined based on fair market value determined by appraisal to incorporate local area variation.

We may reexamine the distribution of facilities in contractor-operated plants (Table 2, page 5), separating the acquisition cost of facilities covered by special leases (10 USC 2667). The results are presented in Table 8.

TABLE 8

ESTIMATED DISTRIBUTION OF GOVERNMENT-OWNED FACILITIES IN CONTRACTOR-OWNED PLANTS
(Millions of Dollars)

30 June 1972

	LAND AND RIGHTS	OTHER REAL PROPERTY	OTHER PLANT EQUIPMENT	INDUSTRIAL PLANT EQUIPMENT
CONVENTIONAL	$ 77	$ 1,125	$ 1,753	$ 852
SPECIAL LEASES[1]	5	169	53	180
TOTAL	$ 82	$ 1,292	$ 1,806	$ 1,032[2]

[1] 10 USC 2667.

[2] EXCLUDES IDLE ($15M), DISPOSAL-IN-PROCESS ($81M), AND MOBILIZATION PACKAGES ($9M) FROM TOTAL OF $1,137M.

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[1] The staffs of both the Council of Economic Advisors and the National Science Foundation recommend the most aggregated index that can be accepted. In this case the GNP Implicit Price Deflator is close to the Metal Working Machinery Price Deflator although it changes at a somewhat slower rate. See Appendix D.

We estimated the rent that would be received into the Fund. The procedure for tne estimation given is given in Appendix D. While the actual rent would depend on the mix of the lengths of leases chosen by the contractors, we have chosen average lease lengths of 3, 5, and 7 years. The results are presented in Table 9. Those results include rent for other plant equipment and land and buildings, and no reduction has been made for decreases in inventory.

We believe that the special leases should also be transferred to Fund management; however, they were not included in the estimate because of the special nature of the plants.

TABLE 9

ESTIMATED ANNUAL RENT FOR FACILITIES IN CONTRACTOR-OWNED CONTRACTOR-OPERATED PLANTS BASED ON JUNE 1972 INVENTORY
(Millions of Dollars)

	AVERAGE LENGTH OF LEASE-YEARS		
	3	5	7
ANNUAL RENT	\$769	\$573	\$491

H. EFFECT ON CONTRACTOR PROFIT

The cost principles of ASPR 14-205.34 limit allowable costs under long-term leases to the costs that would be associated with ownership. Rental charges for government-owned equipment under rent-across-the-board will exceed the cost of ownership. The amount by which rent exceeds cost of ownership is dependent upon the lengths of lease chosen; however, in every case, the non-allowable costs will be greater than the profit the contractor would receive on the part of the rent that is allowable.

Under present ASPR policy, the variability of application of the source of resources factor in the Weighted Guidelines (ASPR 3-808.2) and the disallowance of cost-of-capital in ASPR Section XV results in the situation that a contractor who owns facilities may have little or no profit advantage over a contractor using government-furnished facilities. Rent-across-the-board would decrease the profit of contractors using government-furnished facilities and thereby improve the relative profit position of contractors who own their own facilities.

The DoD has under consideration a proposed revision to the Weighted Guidelines. That revision provides for application of profit to capital employed by the contractor. Under the proposed revision the difference in profit between contractors who own facilities and those who use rent-free government-furnished facilities would be increased, but not by an amount sufficient to fully recognize the difference in capital investment. As with the present Weighted Guidelines case, rent-across-the-board would decrease the profit of contractors using government-furnished facilities and thereby improve the relative profit position of contractors who own their own facilities.

I. TRANSITION PROCEDURES

LMI recommends that rent-across-the-board be initiated as soon as necessary procedures can be established. Rent-across-the-board should be applied to all new contracts, and to existing contracts at any time they are subjected to repricing actions. Existing contracts that provide for rent-free use of government facilities should be allowed to run out; the burden of renegotiating and repricing those contracts solely to incorporate rent-across-the-board would not be worthwhile. Therefore, there would be a period of time during which a contractor could be using government-owned facilities under contracts providing for both rent-free use and rent-across-the-board. Two special problems peculiar to the transition period are:

- The amount of the rent-across-the-board payments.
- The recovery of fair market value.

1. Determination of Rent Due The Fund

During the transition period contractors will have contracts which authorize rent-free use of facilities and contracts which were issued under rent-across-the-board. The following procedure is recommended for determining the amount of rent due under rent-across-the-board.

a. At the time of initiating rent-across-the-board, proceed to establish the fair market value of the government-owned facilities that the contractor wishes to retain, and execute a lease agreement establishing what the monthly rent would be if there were no rent-free use.

b. In each rental period, determine the allowable portion of the rent, and allocate it to each indirect cost pool using normal contract administration and auditing procedures.

c. Prepare a schedule of allocation of the allowable rent to all contracts, including rent-free use contracts, based upon the allocation of indirect costs.

d. Sum the allowable rent which is allocated to contracts subject to rent-across-the-board and form a ratio with total allowable rental costs. Multiply that ratio by the rent-across-the-board to be paid under the lease. The result is the amount of rent to be paid to the fund.

2. Recovery of Fair Market Value

A principle of the proposed rent-across-the-board plan is the recovery of the fair market value of the facilities during the period of the lease. During the transition period to rent-across-the-board, rent can be collected only on those contracts consummated after the start of rent-across-the-board. Therefore, some restrictions must be imposed on the lease period to be selected by the contractor.

We propose that the contractor be required to select a lease period with the understanding that, because no rent will be paid under existing rent-free use contracts, the fair market value of the facilities will not be recovered under the rent-across-the-board agreement. The fair market value not recovered by the government through rent must be recovered by extending the lease period or by making some other compensating arrangement.

Since the projection of use may not be accurate, at the end of the transition period lease there may be some unrecovered fair market value. The options at that point include removal of the facilities by the government, sale to the contractor at unrecovered fair market value, or execution of a new lease which will recover the then unrecovered fair market value.

A contractor who refuses to enter into a rent-across-the-board arrangement will normally be allowed to retain the facilities until his present contracts run out. He should not be permitted to use the facilities on any new contracts unless rent-across-the-board is accepted.

J. EFFECT ON GOVERNMENT COST

Rent-across-the-board has been questioned on the basis that contract prices will be increased, over and above rental charges, by increased general and administrative expense and profit.

That position is not valid with respect to general and administrative expense. Contractors allocate general and administrative expense to their total business by means of a rate, using the expense as the numerator and some base, such as cost of goods manufactured, as the denominator. Inclusion of rental costs in the base increases the base but has no effect on the total dollar amount of general and administrative expense to be allocated. The same expense is spread over the larger base, resulting in a lower allocation rate. It may be assumed that inclusion of rent in the base will not change the mix of government and commercial business in the base from what it would have been without the rental charge. In short, application of general and administrative expense to rental costs will have very little or no effect on total general and administrative dollars allocated to DoD contracts.

As stated in paragraph H. above, the rental charges will exceed the dollar amount, including profit, that the contractor may recover from the DoD. Under the proposed revision to the Weighted Guidelines, profit is keyed to ownership or leasing of facilities. Even in that case, there are circumstances where the DoD will collect more than it pays out, and it appears that in the aggregate the increased cost of procurement will not exceed the rent collected.

To the extent that rents now are not collected for commercial use, the government will receive additional revenue. In addition, the rental rate for commercial use will be somewhat higher than present ASPR rates.

The major benefits of rent-across-the-board are expected to be in the long run. The benefits include a reduction in facility inventory over time, and a reduction in administrative costs within the DoD.

The most important long-range benefit will be the placing of facilities on an economic self-regulating basis. The present system encourages under-utilization of government-owned facilities. From the national viewpoint, that under-utilization represents waste, which should be eliminated. Rent-across-the-board will force contractors to evaluate the productivity of equipment, eliminating that which is not needed, and replacing that which is inefficient. Rent-across-the-board and its effective administration through a Defense Facilities Fund will result in a decrease in the cost of military supplies.

ASSISTANT SECRETARY OF DEFENSE
Washington, D. C.

Installations and Logistics DATE: 9 March 1972

TASK ORDER SD-271-170
(TASK 72-14)

1. Pursuant to Articles I and III of the Department of Defense Contract SD-271 with the Logistics Management Institute, the Institute is requested to undertake the following task.

A. TITLE: Rental of Industrial Plant Equipment

B. BACKGROUND: Industrial Plant Equipment in the custody of government contractors may be subject to under or inefficient utilization. While few incentives for effective use of these equipments exist, several incentives for retention of this equipment, even if under-utilized, do exist. These include better competitive position, because the Government has a vested interest in the contractor's plant, and because the contractor's costs are lowered through use of government plant equipment. Under-utilization of government plant equipment results in increased plant space charges, duplicate purchase of equipment, and increased cont.ol costs. Although revisions to the ASPR have been proposed to recognize contractor's costs for IPE that he owns, these revisions will do little to help the utilization problem. It has been proposed that a government charge for possession of this equipment, equivalent to commercial rental rates, would do much to solve the problem.

C. SCOPE OF WORK: LMI will investigate the suitability of rental charges for Government Industrial Plant Equipment in contractor plants, as well as in government installations. Mechanisms for control and establishing of rental rates and for recouping charges will be examined. Recommendations in each of these areas will be made.

2. SCHEDULE: A final report will be submitted by 31 August 1972.

/s/ Barry J. Shillito

ACCEPTED /s/ William F. Finan

DATE 9 March 1972

APPENDIX B

IPE SCOPE (FSC) AND NOMENCLATURE

The following list of Federal Supply Classes (FSCs), which is for reference purposes only, contains IPE reportable to DIPEC.

FSC	*NOMENCLATURE*
3220	Woodworking Machines
3405	Saws and Filing Machines
3408	Machining Centers and Way Type Machines
3410	Electrical and Ultrasonic Erosion Machines
3411	Boring Machines
3412	Broaching Machines
3413	Drilling and Tapping Machines
3414	Gear Cutting and Finishing Machines
3415	Grinding Machines
3416	Lathes
3417	Milling Machines
3418	Planers and Shapers
3419	Miscellaneous Machine Tools
3422	Rolling Mills and Drawing Machines
3424	Metal Heat Treating and Nonthermal Treating Equipment
3426	Metal Finishing Equipment
3431	Electric Arc Welding Equipment
3432	Electric Resistance Welding Equipment
3433	Gas Welding, Heat Cutting, and Metalizing Equipment
3436	Welding Positioners and Manipulators
3438	Miscellaneous Welding Equipment
3441	Bending and Forming Machines
3442	Hydraulic and Pneumatic Presses, Power Driven
3443	Mechanical Presses, Power Driven
3444	Manual Presses
3445	Punching and Shearing Machines
3446	Forging Machinery and Hammers
3447	Wire and Metal Ribbon Forming Machinery
3448	Riveting Machines
3449	Miscellaneous Secondary Metal Forming and Cutting Machines
3450	Machine Tools, Portable
3460	Machine Tool Accessories
3461	Accessories for Secondary Metalworking Machinery
3530	Industrial Sewing Machines and Mobile Textile Repair Shops
3611	Industrial Marking Machines
3615	Pulp and Paper Industries Machinery
3620	Rubber and Plastics Working Machinery
3625	Textile Industries Machinery
3635	Crystal and Glass Industries Machinery
3650	Chemical and Pharmaceutical Products Manufacturing Machinery
3660	Industrial Size Reduction Machinery
3680	Foundry Machinery, Related Equipment and Supplies
3685	Specialized Metal Container Manufacturing Machinery and Related Equipment
3690	Specialized Ammunition and Ordnance Machinery and Related Equipment
3693	Industrial Assembly Machines
3694	Clean Work Stations, Controlled Environment, and Related Equipment
3695	Miscellaneous Special Industry Machinery
4330	Centrifugals, Separators, and Pressure and Vacuum Filters
4430	Industrial Furnaces, Kilns, Lehrs, and Ovens
4440	Driers, Dehydrators, and Anhydrators
4910	Motor Vehicle Maintenance and Repair Shop Specialized Equipment
4920	Aircraft Maintenance and Repair Shop Specialized Equipment
4925	Ammunition Maintenance and Repair Shop Specialized Equipment
4940	Miscellaneous Maintenance and Repair Shop Specialized Equipment
5220	Inspection Gages and Precision Layout Tools
5860	Stimulated Coherent Radiation Devices, Components, and Accessories
6625	Electrical and Electronic Properties Measuring and Testing Instruments
6630	Chemical Analysis Instruments
6635	Physical Properties Testing Equipment
6636	Environmental Chambers and Related Equipment
6640	Laboratory Equipment and Supplies
6650	Optical Instruments
6670	Scales and Balances
6680	Liquid and Gas Flow, Liquid Level, and Mechanical Motion Measuring Instruments
6685	Pressure, Temperature, and Humidity Measuring and Controlling Instruments
6695	Combination and Miscellaneous Instruments

DEPARTMENT OF DEFENSE
CHARTER FOR DEFENSE FACILITIES FUND

I. AUTHORITY

Under the authority contained in the Defense Facilities Fund is established as a working-capital fund.

II. PURPOSE

The fund is established (1) to achieve economic utilization of Government facilities through charging a cash rental for the use of facilities in possession of contractors, and (2) to finance acquisition, replacement, rebuild, maintenance, transportation, storage, and accounting and control of facilities through proceeds from rentals, sales, exchanges, and dispositions as excess or surplus.

III. MANAGEMENT

Under the direction, authority, and control of the Secretary of Defense, and the Assistant Secretary of Defense (Installations and Logistics), the Director of the Defense Supply Agency (DSA) is assigned the responsibility to administer and manage the Defense Facilities Fund in conformance with the provisions of the Armed Services Procurement Regulation (ASPR) and appropriate Department of Defense policy, regulations, and instructions.

IV. INVENTORIES

The inventories in the fund will consist of:

- All items of facilities, including plant equipment, industrial plant equipment (IPE), and minor plant equipment as defined in ASPR B-102.7, B-102.10, B-102.11, and B-102.12, in possession of contractors, except those in Government Owned Contractor Operated Plants.
- All facilities loaned, leased, or furnished to non-defense agencies and other authorized users.
- Facilities held in storage, either in Government storage locations or in contractors' plants, which are designated as Defense Industrial Equipment Reserve or National Industrial Equipment Reserve items.
- Facilities on procurement for or by contractors and in transit to or from contractors' plants.

V. RENTALS

Facilities in contractors' possession will be subject to rental when not declared idle by the contractor. Rental charges will be not less than the average commercial rental rates for like items.

Facilities on loan or lease to other Government agencies or authorized non-defense users will be rented in accordance with agreements negotiated between the Assistant Secretary of Defense (Installations and Logistics) and the agency or user.

VI. SALES

The manager of the fund is authorized to: (a) negotiate sales of plant equipment, including minor plant equipment, in-place to contractors at fair market value; (b) conduct foreign military sales of plant equipment including the acquisition for sales; (c) sell plant equipment under exchange procedures; and (d) sell or transfer excess or surplus facilities pursuant to established defense procedures.

VII. FACILITIES ALLOCATIONS

Facilities held or acquired by the fund directly or through reimbursement for contractor acquisition for the government will be allocated in accordance with the priorities established for performance of approved DoD program elements or projects.

In the case of conflicting requests for allocation of facilities the Assistant Secretary of De . .se (Installations and Logistics) will determine the acquisiti . distribution of equipment.

VIII. PROCEEDS FROM SALES AND RENTALS

All proceeds from sales and rentals described above will be deposited in the fund and be available for the purposes stated hereafter.

IX. FACILITIES ACQUISITION

The fund is authorized to acquire facilities for specific use by contractors to modernize or replace such items as have been determined essential to be provided by the Department of Defense to perform defense contracts. It is also authorized to acquire facilities required for performance of new approved program elements, projects, or production processes. Acquisition of facilities is authorized only in accordance with the provisions of DoD Directive 4165.6 and 4275.5.

X. REBUILD AND MAINTENANCE COSTS

The manager of the fund is authorized to finance rebuild of plant equipment specifically required by item determination to perform production or services at a contractor's plant and where acquisition has been determined to be impractical, more expensive, or uneconomical after considering installation, transportation, and other costs. Rebuild of plant equipment which is less than $1,000 in value will only be accomplished on a cost reimbursable basis from an authorized user.

Cost of maintenance and insurance of active facilities in contractors' possession will be borne by the contractor under the provisions of ASPR as part of his cost and authority to use the equipment.

The fund will finance costs of maintenance and storage of idle facilities.

XI. TRANSPORTATION COSTS

The fund will finance all packing, preservation, and transportation costs of plant equipment on acquisition to the contractor's plant, from one contractor's plant to another or to storage, between storage sites, to and from rebuild sites, and from storage to contractors.

XII. RESEARCH AND STANDARDIZATION

The fund will finance technical research, development, and standardization of plant equipment required for defense production at contractors' plants in coordination with the military departments.

XIII. CENTRALIZED ACCOUNTING

One centralized automatic data processing system will be maintained. The system will account for facilities either by item or by dollar value; provide the required management information to screen availability and potential dispositions, determine requirements, distribution, and allocations; provide a basis in conjunction with reports from contractors for computing rentals; and prepare management statements, reports, and analyses.

XIV. WORKING CAPITAL

Cash working capital in addition to inventories capitalized under the provisions of Section IV will be provided as required pursuant to appropriate authorizations and approval of the Assistant Secretary of Defense (Comptroller)

ESTIMATION OF RENT

We have recommended that rent be collected for all facilities, land, buildings, utilities, other plant equipment, and industrial plant equipment in contractor owned contractor operated plants.

An important question to the decision of whether to impose rent-across-the-board is what method will be used to compute the rent and what will the magnitude of the rent collection be, assuming the present inventory of facilities.

Since other plant equipment appears to be distributed as industrial plant equipment, we have assumed that the rent derived for industrial plant equipment will apply in the same ratio to other plant equipment.

Industrial plant equipment may be considered in several broad categories. Those are:

- Metal Forming Machines
- Metal Cutting Machines
- Numerical Control Machine Tools
- Special Purpose Equipment

The relationship between age and value as a percentage of replacement cost has been given in Figure 3 of the text.

We had available distributions of industrial plant equipment by Federal Supply Class and ages as of 30 April 1972.

Grouping into the categories given above, we obtain Table D-1. Dollar figures have been adjusted to yield the total of active IPE in COCO plants as of 30 June 1972 ($1,032M).

Table D-1

ESTIMATED DISTRIBUTION OF ACQUISITION COST BY AGE AND GROUP OF ACTIVE IPE IN COCO PLANTS, 30 JUNE 1972
($ in Millions)

	AGE IN YEARS					
	LESS THAN 5	5-10	11-15	16-20	21-30	MORE THAN 30
METAL FORMING MACHINES	1.8	6.7	6.3	3.8	32.3	5.6
METAL CUTTING MACHINES	20.7	84.1	34.5	164.9	140.4	12.5
NUMERICAL CONTROL	0.1	35.0	29.7	115.8	2.6	0.4
SPECIAL PURPOSE EQUIPMENT	27.5	100.5	88.3	79.0	50.3	12.5

SOURCE: DIPEC-AGE DISTRIBUTION, REPORT CONTROL SYMBOL VBAO 7452, 30 APRIL 1972. DEFENSE INDUSTRIAL PLANT EQUIPMENT CENTER, MEMPHIS, TENNESSEE.

Table D-2 gives various price deflators. In accordance with the recommendations of the staffs of the Council of Economic Advisors and the National Science Foundation, we selected the Total GNP deflator to bring the acquisition cost of the equipment to 1973 dollars. The deflators by age group are given in Table D-3.

To obtain present market value we queried a number of used machine tool dealers and one large appraisal firm. In the trade, value is expressed as a percentage of acquisition cost The machine tool dealers and the appraiser selected categories of facilities that had similar rates of decline in value with age. The machine tool dealers estimated the shapes of the curves. Their estimates were averaged and composite curves drawn.

Table D-2

IMPLICIT PRICE DEFLATORS FOR GROSS NATIONAL PRODUCT, 1929-1971
(Index Numbers, 1958=100)

YEAR OR QUARTER	TOTAL GROSS NATIONAL PRODUCT	PERSONAL CONSUMPTION EXPENDITURES				GROSS PRIVATE DOMESTIC INVESTMENT				
						FIXED INVESTMENT				
							NONRESIDENTIAL			
		TOTAL	DURABLE GOODS	NON-DURABLE GOODS	SERV-ICES	TOTAL	TOTAL	STRUC-TURES	PRO-DUCERS' DURABLE EQUIP-MENT	METAL WORKING MACHINERY
1929	50.64	55.3	56.4	54.5	56.1	39.4	39.9	35.7	44.6	
1930	49.26	53.6	55.3	51.6	55.7	37.9	38.1	34.0	43.0	
1931	44.78	47.9	49.1	44.1	52.7	35.2	35.8	31.1	41.1	
1932	40.25	42.3	43.2	37.7	48.3	31.6	32.9	27.6	39.1	
1933	39.79	40.6	41.9	38.0	43.6	30.6	31.6	27.9	34.5	
1934	42.16	43.5	44.7	42.7	44.3	33.7	34.9	28.9	38.8	
1935	42.62	44.4	43.7	44.5	44.4	34.3	35.9	30.6	38.7	
1936	42.73	44.7	43.6	44.8	45.0	34.6	35.6	30.2	38.5	
1937	44.50	46.5	45.8	46.4	46.8	37.8	38.8	34.4	41.4	
1938	43.88	45.6	46.7	44.0	47.7	38.2	39.3	33.9	43.0	46.4
1939	43.23	45.1	46.0	43.2	47.7	37.7	38.7	33.1	42.2	46.7
1940	43.87	45.5	46.5	43.8	47.9	39.0	40.0	33.9	43.4	50.0
1941	47.22	48.7	50.4	47.7	49.8	42.0	42.7	36.4	46.3	53.3
1942	53.03	54.8	59.3	55.6	52.7	46.5	47.8	41.3	51.5	54.4
1943	55.83	59.9	64.2	62.5	55.3	49.3	49.9	46.8	51.1	54.6
1944	58.16	63.2	71.5	66.2	57.5	51.1	51.0	48.6	51.9	54.8
1945	59.66	65.4	75.9	68.7	58.7	51.5	51.0	49.2	51.7	55.1
1946	66.70	70.5	76.8	74.3	62.7	58.5	56.3	54.4	57.5	59.8
1947	74.64	77.9	82.7	83.6	67.9	66.7	64.5	64.4	64.6	50.5
1948	79.57	82.3	86.3	88.5	72.1	73.9	70.7	71.5	70.3	55.8
1949	79.12	81.7	86.8	85.6	74.3	74.7	72.8	71.2	73.6	59.3
1950	80.16	82.9	87.8	86.0	76.3	77.5	74.4	72.9	75.2	64.5
1951	85.64	88.6	94.2	93.3	80.0	83.1	80.4	79.3	80.9	72.8
1952	87.45	90.5	95.4	94.3	83.6	85.3	82.6	83.2	82.2	76.0
1953	88.33	91.7	94.3	93.9	87.7	86.6	84.0	84.9	83.5	77.6
1954	89.63	92.5	92.9	94.2	90.0	86.8	84.8	86.0	84.0	78.4
1955	90.86	92.8	91.9	93.6	92.0	89.0	86.7	82.1	85.9	82.9
1956	93.99	94.3	94.9	94.9	94.6	94.0	92.4	93.4	91.8	93.5
1957	97.49	97.7	98.4	97.7	97.3	98.5	97.9	98.6	97.5	98.6
1958	99.97	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1959	101.66	101.3	101.4	99.9	103.0	102.6	102.2	102.7	102.0	102.2
1960	103.29	102.9	100.9	101.2	105.8	103.4	102.9	104.0	102.2	104.6
1961	104.62	103.9	100.6	101.9	107.6	103.9	103.4	105.6	102.1	106.2
1962	105.78	104.9	100.8	102.8	109.0	104.9	104.1	107.1	102.3	108.0
1963	107.17	106.1	100.4	104.0	110.9	106.0	104.5	108.9	102.3	107.6
1964	108.85	107.4	100.4	104.9	113.1	107.6	105.7	111.1	103.0	110.3
1965	110.86	108.8	99.6	106.9	115.1	109.3	107.5	114.7	103.9	114.7
1966	113.94	111.5	98.7	110.7	118.3	111.8	110.2	118.9	106.0	119.7
1967	117.59	114.4	100.3	113.0	122.2	115.9	113.8	124.0	109.3	124.4
1968	122.30	118.4	103.4	117.1	126.9	120.4	117.5	129.8	112.0	129.7
1969	128.21	123.5	106.0	122.1	133.2	126.4	123.0	141.1	115.1	134.2
1970	135.29	129.4	108.9	127.7	140.2	132.6	130.0	152.0	120.1	141.6
1971	141.56	134.6	112.4	131.7	148.2	140.5	137.2	170.4	124.1	145.3

SOURCE: DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS.

Table D-3

PRICE DEFLATOR FOR GOVERNMENT-OWNED EQUIPMENT
(In Percent)

AGE IN YEARS					
LESS THAN 5	5-10	11-15	16-20	21-30	MORE THAN 30
110	131	143	161	236	326

We also obtained a large collection of reports on auctions of equipments. With these data and the aid of equipment manufacturers we were able to draw curves similar to those described above. These latter curves turned out to be similar in shape but below those suggested by the machine tool dealers. We attribute the difference to the dealers' quotation of prices to the sales prices that they expect. The dealers concurred in our evaluation of the difference. Therefore, we have adopted a curve which represents the auction price. The curves of Figure 3 of the text are presented in tabular form as Table D-4. When the Fund is established, the operations described above should be redone in much greater detail and kept current thereafter by the Fund management.

Multiplying the acquisition costs (Table D-1), the deflators (Table D-3), and the value ratios (Table D-4), we obtain an estimate of the fair market value of IPE. The results are given as Table D-5. The total fair market value should also include installation and transportation costs multiplied by the deflators and value ratios. To represent these costs we have added 5% to the fair market value ($523M) for a total of $549M for IPE.

Table D-4

FACTORS RELATING REPLACEMENT COST TO AGE FOR IPE

	AGE IN YEARS					
	LESS THAN 5	5-10	11-15	16-20	21-30	MORE THAN 30
METAL CUTTING MACHINES	0.75	0.53	0.40	0.31	0.20	0.13
NUMERICAL CONTROL	0.74	0.44	0.27	0.18	--	--
SPECIAL PURPOSE EQUIPMENT	0.66	0.39	0.25	0.19	0.16	0.07
SOURCE: LMI SURVEY.						

Table D-5

FAIR MARKET VALUE OF ACTIVE IPE IN COCO PLANTS
(Excludes Installation)
(Millions of Dollars)

	AGE IN YEARS					
	LESS THAN 5	5-10	11-15	16-20	21-30	MORE THAN 30
METAL FORMING MACHINES	1.5	4.7	4.0	2.5	26.7	4.7
METAL CUTTING MACHINES	17.1	58.4	19.7	82.3	66.2	5.3
NUMERICAL CONTROL	0.1	20.2	11.5	49.2	0.0	0.0
SPECIAL PURPOSE EQUIPMENT	20.0	51.3	31.6	24.2	19.0	2.9

If we adjust the acquisition cost of OPE ($1,753M, excluding special leases) by the same ratio, we obtain a net fair market value for other plant equipment of $934M. The total for all plant equipment is $1,483M.

The monthly payment schedule for a nominal surcharge rate per annum of 12% is given in Table D-6.[1]

TABLE D-6

MONTHLY PAYMENT SCHEDULE FOR 12% NOMINAL ANNUAL SURCHARGE RATE

(Percent of Facilities Cost)

Lease Length -Months	Monthly Payment
24	4.70735
36	3.32143
48	2.63338
60	2.22444
72	1.95502
84	1.76527
96	1.62528
108	1.51842
120	1.43471

From Table D-6 we may obtain the annual rental rates for three, five, and seven year rental arrangements. Those are 39.9, 26.7 and 21.2 percent, respectively. Multiplying the plant equipment fair market value ($1,483M) by these figures, we obtain either $592M, $396M, or $314M for the annual return to the Fund.

[1] For the selection of this number, see p. 37.

Finally, for the relatively small amount of land and buildings we have assumed an annual rent of 12 and 15 percent, respectively, for an annual return to the Fund of \$177M. The total estimated rental returns depending upon the selection of the average rental periods are then either \$769M, \$573M, or \$491M.