DLA-92-P20052

PROCESSING FEE PRICING STRATEGY MARKET BY EXAMPLE

September 1992

OPERATIONS RESEARCH AND ECONOMIC ANALYSIS OFFICE

DEPARTMENT OF DEFENSE
DEFENSE LOGISTICS AGENCY

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FOREWORD

This report documents the results of an analysis that evaluated the impacts of a processing fee pricing strategy on the cost of Defense Logistics Agency (DLA) goods purchased by its customers. The study was initiated as a result of recommendations made in a previous study, Review of Additional Characteristics for Use in Cost Recovery (DLA-92-P00191).

This study provides various cost examples for assessing the impacts of a Processing Fee plus a Reduced Cost Recovery Percentage (PF+RCRP). Specifically, different scenarios of consolidating requisitions for various lengths of time (day and week) across a variety of Department of Defense Activity Address Codes (DoDAACs) were evaluated as to how they affect costs customers pay for DLA goods.

The report recommends that implementation of a Processing Fee plus a Reduced Cost Recovery Percentage should be done only if the DLA goal is fair costing techniques, since service benefits are marginal. Prior to any implementation of a PF+RCRP, a study must be accomplished for assessing the actual DLA savings associated with a reduced number of requisitions. Such a study will aid in setting an objective processing fee. In addition, regardless if a PF+RCRP is instituted, another study should be opened for evaluating the small group of DoDAACs (9 percent) which generated the majority (80 percent) of ccnsolidated requisitions to examine other ways of encouraging rollups.

ROGER C. ROY
Assistant Director
Policy and Plans

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF FIGURES

LIST OF TABLES

SECTION 1
INTRODUCTION

1.1 BACKGROUND

Defense Management Report Decision 901/901C required that DLA move defense supply center and supply depot support costs which were previously funded in operations and maintenance to the stock fund. As a result, the Deputy Director of DLA initiated four separate projects.

The first study, Defense Stock Fund Operations and Maintenance Surcharge (DLA-90-P00109) was completed in June 1990. It studied the basic methodology used by the DLA Comptroller to spread operations and maintenance costs for the FY 91 surcharge (cost recovery percentage) and found it to be basically sound and verifiable. However, there was insufficient time to examine all aspects of operations costs. It was recommended that these aspects be examined prior to FY 92 for possible affects on stock fund pricing. There was also concern about the impact changes in unit price would have on the services. Increased DLA unit prices may make it appear more economical to procure locally if the services do not take into account the processing costs of local procurement.

A second study, Analysis of Local Procurement for Medical Items (DLA-91-P00122) was completed in August 1991. It evaluated alternative purchasing strategies in order to obtain insight into various unit cost structures. The study concluded that a fully centralized purchasing system should continue across DoD and that local purchase should only be permitted under special circumstances.

The third study, Review of the Traditional Stock Fund Surcharge (DLA-91-P00121) was completed in September 1991. This study focused only on the traditional surcharge component of the standard unit price of a DLA item. The study found that existing DoD/DLA guidance for calculating traditional surcharge were current and fairly accurate over the long term.

A fourth study, Review of Additional Characteristics for Use in Cost Recovery (DLA-92-P00191) focused on developing a fair and accurate pricing strategy. The report recommended that a study of pricing strategies be conducted with DoD sponsorship. One of the strategies to be evaluated was a Processing Fee plus a Reduced Cost Recovery Percentage (PF+RCRP).

1.2 PURPOSE

The purpose of this study was to continue pricing policy evaluation by determining the impact of a processing fee on the cost of DLA goods to its customers.

1.3 OBJECTIVE

The objective of this study was to provide various cost examples for assessing the impacts of a processing fee. Specifically, different scenarios of consolidating requisitions for various lengths of time (i.e., days, weeks) across a variety of DoD Activity Address Codes (DoDAACs) were evaluated as to how they affect costs customers pay for DLA goods.

1.4 SCOPE

1.4.1 DLA VIEWPOINT

This study primarily evaluated the impacts of a processing fee from the DLA side of the requisition process. Specifically, the change in the cost of goods purchased by each customer was determined. No evaluation was done of additional costs a customer may incur as a result of consolidating requisitions.

1.4.2 FY 90 REQUISITIONS EXAMINED

A review of all requisitions received by DLA in FY 90 were examined. FY 90 was chosen because the cost data had already been determined during an earlier study (DLA-92-P00191). FY 90 sales were based on all items actually shipped during the year and not the requisition quantity.

1.5 LIMITATIONS

The impact costs developed in this study are only a partial picture of a processing fee pricing strategy. They do not reflect non-DLA costs imposed on a customer. Costs associated with managing consolidated requisitions were not identified. Also, any impacts on military readiness caused by the customers rolling up requisitions were not considered in this study.

SECTION 2
METHODOLOGY

The analysis entailed these major steps:

2.1 COLLECT DATA

Requisition data for FY 90 were extracted from the DLA Integrated Data Bank (DIDB). Six commodities were included: construction, electronics, general, industrial, medical, and textiles.

2.2 BASELINE

The requisitions were categorized by their requisition number which is made up of a DoDAAC, requisition date, and serial number. An annual cost baseline incurred by each DoDAAC was determined using the standard unit price adjusted to include supply center and depot operating costs (to be referred to as FY 90 adjusted sales).

2.3 PROCESSING FEE

The requisitions were consolidated by National Stock Number (NSN) and priority over various lengths of time for each DoDAAC. A processing fee plus a reduced cost recovery percentage was applied to the rolled-up requisitions. An estimated annual sales cost for each DoDAAC was determined.

2.4 COMPARISON

A comparison of baseline costs and processing fee plus a reduced cost recovery percentage was performed to determine the impact costs for each DoDAAC. These costs were then summarized by service.

2.5 SENSITIVITY ANALYSES

Sensitivity analyses were performed by varying the amount of the processing fee, the number of days for rolling up requisitions, and the customer level at which the requisitions were consolidated.

SECTION 3
ANALYSIS OF RESULTS

3.1 CUSTOMER PROFILE

As was discussed earlier, requisition data from FY 90 was used to evaluate the affects of a processing fee on the cost of DLA goods. A profile of DLA's customers and their ordering habits for FY 90 are illustrated in Table 1.

Table 1. Customer Profile

CUSTOMER	NUMBER DoDAACs	NUMBER REQUISITIONS	ADJUSTED SALES ($)	AVERAGE VALUE/REQ
ARMY	22,919	5,961,447	1,532,023,997	$257
NAVY	4,028	4,814,478	1,844,475,313	$383
USAF	776	4,509,481	1,221,406,100	$271
USMC	1,053	524,489	206,710,319	$394
USCG	925	334,063	39,563,691	$118
FMS	1,385	760,368	358,436,089	$471
OTHER	4,770	1,101,576	344,220,465	$312
TOTAL	35,856	18,005,902	5,546,835,971	$308

The three big purchasers of DLA goods are the Army, Navy, and Air Force. Almost two-thirds of the DoDAAC customers are Army. However, the adjusted sales for Army are not much different than the Navy and Air Force. Likewise, the Army, Navy, and Air Force have a similar number of requisitions, even though the Air Force has very few DoDAACs. Our initial understanding is that Army DoDAACs are usually assigned to small maneuverable units, hence generating many DoDAACs. Navy DoDAACs are usually assigned to individual ships, and Air Force DoDAACs are at the installation level making for even fewer DoDAACs. Regardless of the number of DoDAACs, the Army, Navy, and Air Force have equally large requisition appetites.

As for average value per requisition, the DLA average is $308 per requisition. Foreign Military Sales (FMS) has the highest average at $471 per requisition. The US Coast Guard has the lowest average at $118 per requisition. What these numbers don't indicate is that a large portion of the requisitions are small dollar purchases.

3.2 PROCESSING FEE AND COST RECOVERY PERCENTAGES

The processing fees and reduced cost recovery percentages used in this study are based on procedures developed in a previous study (DLA-92-P00191). Basically, the processing fee and reduced cost recovery percentage for each commodity were based on DLA's cost of the goods sold, number of requisitions handled, and the portion of DLA's operating costs associated with each commodity. Processing fees are based on variable depot costs. Processing fees per requisition and cost recovery percentages used in this study are shown in Table 2.

Table 2. Processing Fees and Cost Recovery Percentages (FY 90)

COMMODITY	NO FEE (%)	HALF FEE (%)	HALF FEE ($)	FULL FEE (%)	FULL FEE ($)
CONSTRUCTION	36.0	31.8	8.46	27.5	16.92
ELECTRONICS	47.1	41.4	9.54	35.6	19.08
GENERAL	35.2	32.3	8.03	29.4	16.06
INDUSTRIAL	47.6	40.1	7.93	32.6	15.86
MEDICAL	19.7	17.6	9.67	15.6	19.33
TEXTILES	26.5	24.8	8.63	23.1	17.25
DLA AVERAGE	34.0	30.0	8.52	26.0	17.04

3.3 IMPACT OF PROCESSING FEE WITHOUT ROLLUP

Various scenarios using FY 90 requisition data were evaluated based on a full processing fee (all of the estimated variable depot costs being recovered by the fee) and a half processing fee (see Table 2). The results are shown in Figure 1 which illustrates the impact of implementing a processing fee over the present baseline pricing policy. There was no rolling up of requisitions. The Navy benefits from a processing fee with the cost of DLA goods decreasing; however, the Army would be impacted by having to spend more for the items it acquired from DLA. Another way to view this, is that the Navy has been paying more than it's fair share of DLA operating costs as compared to the other services. These impacts all sum to zero, meaning DLA's revenue would not change without a rollup of requisitions. The overall effect of the processing fee is to shift the cost burden among the services. Incidentally, the magnitude of the processing fee impact to each service is not that significant, less than 2 percent of their yearly cost of DLA supplies, except for the Coast Guard, which would require an 8 percent increase in their DLA budget.

IMPACT OF A PROCESSING FEE
WITH REDUCED COST RECOVERY FACTOR AND NO ROLLUP

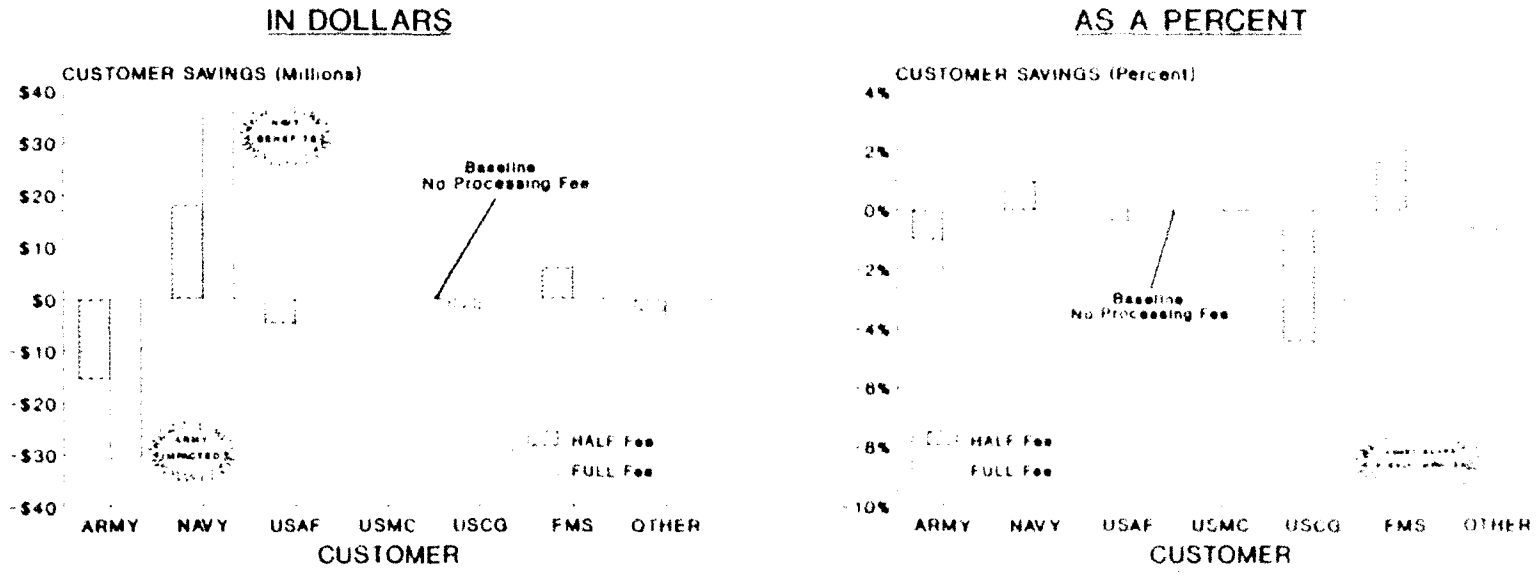


Figure 1. Impact of a processing fee

** SHIFTS COST BURDEN TO APPROPRIATE SERVICE **

3.4 IMPACT OF ROLLING UP REQUISITIONS

The primary reason for using a processing fee pricing strategy would be to encourage customers to consolidate like requisitions so as to reduce operating costs. Requisitions by the same DoDAAC for the same NSN with the same priority were consolidated over two time frames. A one day rollup and a one week rollup were applied to the requisitions to determine the impact (benefit) to each customer. The results of rolling up requisitions are shown in Figure 2.

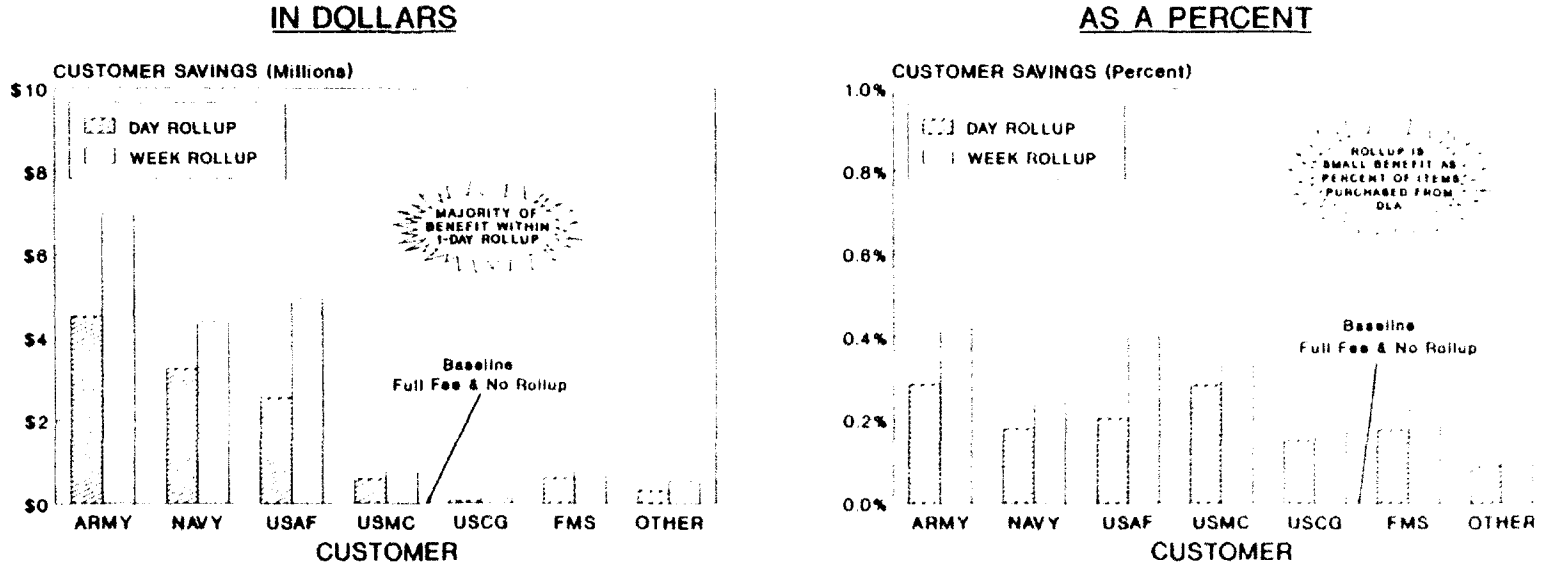
All customers benefit from consolidating requisitions. The impact does not include any additional accounting costs that may be required for requisition consolidation; these costs could offset gains. The percentage of the benefit for each Service (day or week) is less than one-half of 1 percent of their yearly DLA requisition budget. The one week rollup gains are about 50 percent higher than the one day rollup. Considering the marginal improvement of a one week rollup over the one day rollup, only a one day rollup was used during the rest of the study. The magnitude of the rollup benefit to each customer is even less significant than the impact of a processing fee alone, as shown in Figure 3. Remember, only the impact of rolling up requisitions provides real savings whereas the impact of a processing fee only shifts the cost burden.

The rollup benefit seems small because it is completely dependent on the number of requisitions rolled up and the amount of the processing fee charged. With an average processing fee of $17 (refer to Table 2) there is only a small potential for savings (a few million dollars) as compared to the billions in goods being requested. Of course the processing fee could be raised to increase the potential customer savings. However, if the processing fee is set higher than the obtainable savings within DLA then there would be a net loss. For example, if the processing fee were $17 per requisition, but the maximum DLA savings were $15 for every one less requisition, then DLA would be losing $2 for every rolled-up requisition. A much better understanding of the exact effects of rolling up requisitions on DLA is required before a processing fee is set.

NOTE: Understanding the specific impact on DLA of rolling up requisitions is important because every consolidated requisition reduces DLA's net revenue by the amount of the processing fee.

The savings due to consolidating requisitions is not linear and for that reason study DLA-92-P00191 contained varying levels of processing fees and reduced cost recovery percentages. That study did not purport to establish the exact processing fee but to show the general impacts of one possible pricing strategy. If one were to use a processing fee, setting the fee could be very subjective. It would be better to use a reduced processing fee

IMPACT OF ROLLING UP REQUISITIONS WITH REDUCED COST RECOVERY FACTOR

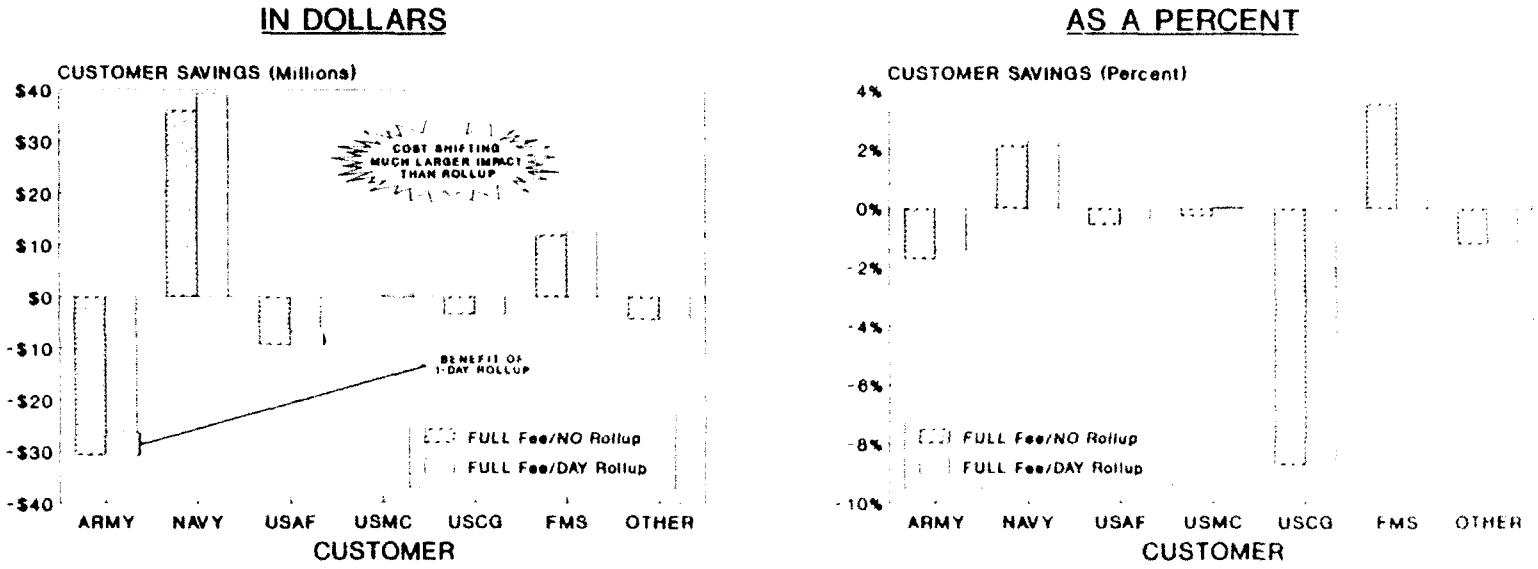


** COMPARATIVELY SMALL ADDITIONAL BENEFIT **

** ROLLUP OF LIKE NSNs, DoDAAC, PRIORITY **

Figure 2. Impact of Rolling Up Requisitions

COMBINED IMPACT OF A PROCESSING FEE
WITH REDUCED COST RECOVERY FACTOR AND 1-DAY ROLLUP



IMPACT DUE TO ROLLING UP REQUISITIONS WITHIN DoDAAC REPRESENTS A MUCH SMALLER PORTION AS COMPARED TO IMPACT OF COST SHIFTING DUE TO PROCESSING FEE

Figure 3. Combined Impact of a Processing Fee with Day Rollup

initially until the actual impacts are observed. Besides, a smaller processing fee may achieve the same results with requisition rollup as a larger one.

3.5 COMPARISON OF IMPACTS ACROSS CUSTOMER LEVELS

An extreme case scenario for illustrating savings due to rolling up requisitions was also pursued. So far sensitivity analyses have only rolled up requisitions at the DoDAAC level. If requisitions could be consolidated at a higher level, such as where several DoDAACs share a common geographical location, then maybe more customer savings could be realized. The main problem was how to determine which DoDAACs to group. An extreme infeasible case would be to group all DoDAACs by Service. This would give an upper bound on maximum savings at any given intermediate level. The results of this Service level consolidation are shown in Figure 4, and are compared against a no rollup (processing fee alone) and a DoDAAC level rollup. There was comparatively little additional benefit at the Service level, especially considering the severity of the rollup.

3.6 MAGNITUDE OF ROLLUPS ACROSS CUSTOMERS

Another analysis was performed to determine which DoDAACs were most responsible for a majority of the consolidation within the Army, Navy, and Air Force. Their cumulative distributions are pictured in Figure 5. A majority of the consolidations are generated by a minority of the customers. A one-day summary of the rolled up requisitions is contained in Table 3. Overall, approximately 80 percent of the rolled-up requisitions are generated by 9 percent of the DoDAACs. In the extreme case, 16.2 percent of Air Force DoDAACs are responsible for 80 percent of their rollups. Obviously, there is a small group of customers (DoDAACs) whose ordering practices are geared toward multiple requisitions for the same items. Moreover, it was this type of requisition habit which prompted this study on the effects of a processing fee pricing strategy.

Table 3. One-Day Consolidation Profile

CUSTOMER	NUMBER DoDAACs	TOTAL # REQs (no rollup)	# of REQs ROLLED UP	DoDAACs RESPONSIBLE FOR 80% of ROLLUP
ARMY	22,919	5,961,447	269,925	2,235 (9.8%)
NAVY	4,028	4,814,478	195,138	143 (3.6%)
USAF	776	4,509,481	149,406	126 (16.2%)
TOTAL	27,723	15,285,406	614,469	2,504 (9.0%)

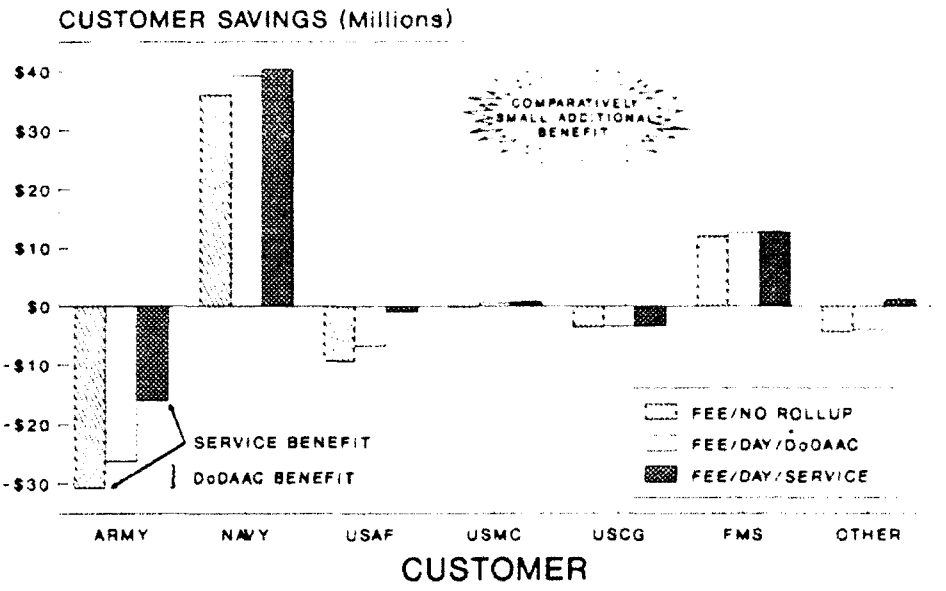


Figure 4. Comparison of Impacts Across Customers

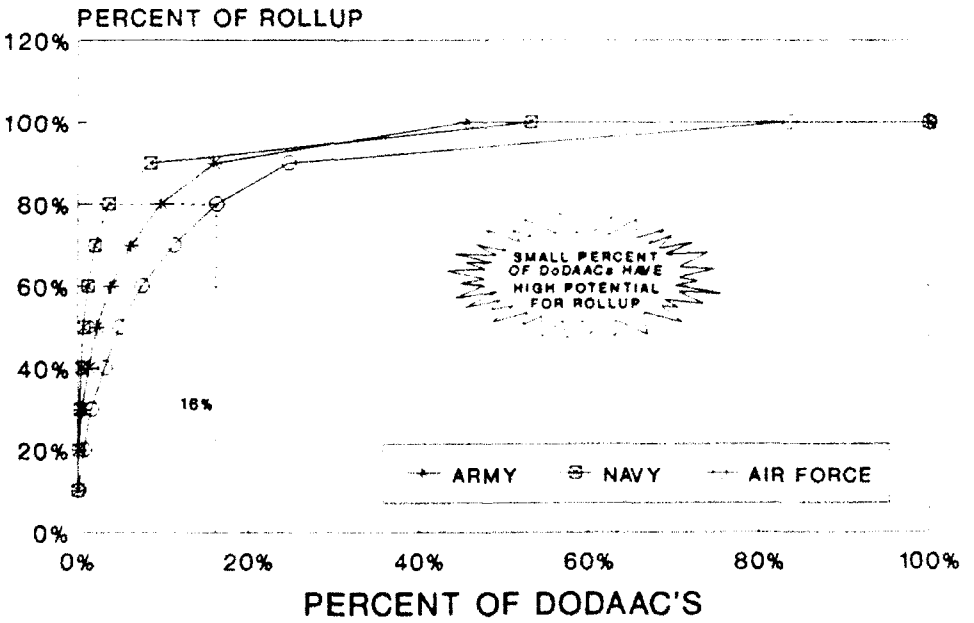


Figure 5. Day Rollup within DoDAAC - Cumulative Frequency

SECTION 4
CONCLUSIONS

We reached the following conclusions:

(1) Processing Fee plus Reduced Cost Recovery Percentage would more fairly shift the cost burden to the appropriate customers.

(2) Rolling up requisitions within a DoDAAC provides a small additional benefit to Services as a percentage of purchases from DLA. Implementation costs could offset this benefit.

(3) One week rollup benefits were 50 percent higher than the one day rollup.

(4) Rollup across Service is not much better than within DoDAAC.

(5) Rollup benefit is directly related to size of processing fee.

(6) No real case was built for selling processing fee to services.

(7) A better understanding of the actual savings within DLA is necessary prior to implementing a Processing Fee plus Reduced Cost Recovery Percentage pricing strategy to ensure adequate reimbursement (i.e., don't set the processing fee too high).

(8) Only 9 percent of the DoDAACs represented 80 percent of the rollup benefit.

(9) Further examination of specific customers may reveal other ways to encourage consolidation of requisitions, such as customer specific discounts.

SECTION 5
RECOMMENDATIONS

We recommend the following actions:

- If service benefits are marginal, do not implement a Processing Fee plus Reduced Cost Recovery Percentage (PF+RCRP) pricing strategy. However, if the DLA goal is fair costing techniques then a PF+RCRP may be of interest. Prior to implementing a PF+RCRP, initiate a study for assessing the actual DLA savings associated with a reduced number of requisitions. Such a study will aid in setting an objective processing fee.

- Initiate a study to evaluate the 9 percent of DoDAACs with large potential for consolidating requisitions to examine other ways of encouraging rollups.

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This report documents the results of an analysis that evaluated the impacts of a processing fee pricing strategy on the cost of DLA goods purchased by its customers. The study provides various cost examples for assessing the impacts of a Processing Fee with a Reduced Cost Recovery Percentage. Specifically, different scenarios of consolidating requisitions for various lengths of time across a variety of DoD Activity Address Codes were evaluated as to how they affect costs customers pay for DLA goods. The report recommends the implementation of a Processing Fee plus a Reduced Cost Recovery Percentage.

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