

2

FILED



DTIC
SELECTE
NOV 14 1989
S D & D

**ADMINISTRATIVE
AND HOLDING COSTS
RESULTING FROM
PROCESSING
REPORTS OF
NONCONFORMING
SUPPLIES**

Operations Research and Economic Analysis Office

DISTRIBUTION STATEMENT A

Approved for public release
Distribution Unlimited

JULY 1989

89 11 12 001

Administrative and Holding Costs
Resulting from Processing
Reports of Nonconforming Supplies

DLA-89-P81012
July 1989

Approved by	
DATE	
DIST	
By	
Date	
Dist	
A-1	

Major John Bray, USA
Operations Research and Economic Analysis Office
Headquarters Defense Logistics Agency
Cameron Station, Alexandria, VA



DEFENSE LOGISTICS AGENCY
HEADQUARTERS
CAMERON STATION
ALEXANDRIA, VIRGINIA 22304-6100

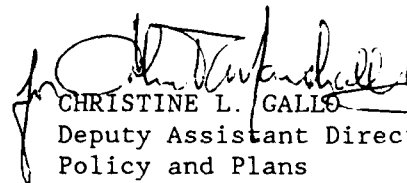
DLA-LO

FOREWORD

The Defense Logistics Agency (DLA) Directorate of Contracting requested DLA's Operations Research and Economic Analysis Office (DLA-LO) to quantify the costs incurred by DLA and other Department of Defense (DoD) activities, as a result of the receipt of nonconforming items from contractors. This report summarizes all efforts involved in the analysis and presents the results in tabular form for use by supply center contracting directorates.

We were able to quantify two costs resulting from the receipt of a nonconforming item - the administrative cost and holding cost. The analysis showed that the average administrative cost for actions that encompass Quality Deficiency Report (QDR) processing, investigation, and resolution is \$501 per complaint for a typical item managed by DLA. The analysis also showed that the "average" holding cost per QDR is 3.55 percent of the contract value for a typical DLA-managed item. The sum of the administrative and holding costs represents a "minimum" total complaint cost. There are many other costs associated with the receipt of nonconforming items that we could not quantify in monetary terms. Administrative and holding costs were calculated for various levels of detail: supply center, Federal Supply Group and Federal Supply Class. The results are presented in a fashion readily adaptable for implementation at each supply center.

The primary recommendation is to test the application of evaluation factors based on these cost estimates during the bid evaluation process at the supply centers.

 , Col, USAF
CHRISTINE L. GALLO
Deputy Assistant Director
Policy and Plans

CONTENTS

<u>Title</u>	<u>Page</u>
Foreword.....	iii
Table of Contents.....	v
List of Tables.....	vii
List of Figures.....	ix
Executive Summary.....	xi
I. Introduction.....	1
A. Background.....	1
B. Problem Statement.....	1
C. Objective.....	2
D. Scope.....	2
1. Lost Opportunity Cost.....	3
2. Pure Supply Cost.....	3
II. Conclusions.....	3
III. Recommendations.....	4
IV. Benefits.....	4
V. Implementation.....	5
VI. Methodology.....	6
A. Administrative Cost.....	6
1. Approach.....	6
2. Development of Data.....	7
B. Holding Costs.....	8
1. Approach.....	8
2. Development of Data.....	8
VII. Analysis.....	8
A. Detailed Computations.....	8
B. Materiel Flow.....	9
C. Cost Calculation Descriptions.....	9
D. Administrative Cost Determination.....	12
E. Holding Cost Determination.....	16
Appendix A. Evaluation Factors Federal Supply Group (By Center and FSG Within Center).....	A-1
Appendix B. Evaluation Factors Federal Supply Class (By Center and FSC Within Center).....	B-1

LIST OF TABLES

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Individual Center Results.....	4
2	Holding Cost Rates.....	16

LIST OF FIGURES

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Evaluation Factor Determination.....	5
2	Flow of Materiel.....	10
3	Complaint Resolution Process.....	13

EXECUTIVE SUMMARY

The Packard Commission has recommended that the government conduct its purchasing operations in a fashion similar to that of the private sector by emphasizing quality and schedule in addition to price. The Defense Logistics Agency's (DLA) Directorate of Contracting is examining the possibility of quantifying the costs associated with poor contractor performance and incorporating these costs into the bid evaluation process. In support of this effort, the DLA Operations Research and Economic Analysis Office (DLA-LO) has been tasked with evaluating the cost associated with nonconforming supplies that are attributable to contractor fault.

This study examines two elements of the cost of nonconforming items, specifically, the administrative cost and the holding cost. The administrative cost arises from actions normally performed at various supply and staff levels (internal and external to DLA) when a nonconforming item is discovered and a Quality Deficiency Report (QDR) is initiated, processed, investigated and resolved. The holding cost results from the storage and handling of nonconforming items and from the lost opportunity of investment for money "tied up" in these discrepant supplies.

The average administrative cost accumulated for a single QDR for a typical DLA item is \$501. The average holding cost per QDR is estimated as 3.55 percent of the contract value for a typical DLA item. The administrative costs (in dollars) and holding costs (expressed as a proportion of the contract value) were derived for various levels of detail, that is, Federal Supply Class, Federal Supply Group and supply center. These sets of results are the products of this study.

Although this study is comprehensive, it is not all-inclusive. As many costs as possible were quantified, although there are many other costs associated with the receipt of nonconforming items that we could not quantify, such as maintenance during equipment downtime and readiness degradation. However, an update will inevitably be needed in the future to account for changes of costs in personnel wages and materiel prices. In conjunction with this update, the possibility of capturing any of these additional costs will be reevaluated.

In the comparison of two or more bids for a particular item, the contracting officer at a center may calculate "evaluation factors" for each potential contractor based on the contractor's quality history and contract data. A "true" cost to the government of doing business with each offeror can be better assessed using these factors. A more prudent choice - a more cost-effective decision - can be made.

It is recommended that the cost estimates developed in this report be tested as bid evaluation factors at one or more of the supply centers.

I. INTRODUCTION

A. Background. The Packard Commission, in a report entitled "QUEST for Excellence" (April 1986), recommended that the government adopt commercial buying practices by taking quality and delivery performance into account, in addition to price, when awarding contracts. The Air Force and some Defense Logistics Agency (DLA) activities have experimented with a "blue ribbon" contractor program. For example, the Defense Electronics, Defense Construction and Defense Industrial Supply Centers have initiated programs to allow for the award of contracts with up to a 20 percent price differential above the low offeror to contractors with a proven track record of timely deliveries and consistently conforming materiel. DLA Operations Research Project Number 81011, Analysis of the Cost of Late Contractor Delivery Update (December 1988), quantified the average additional cost for delinquent contracts to be 6.41 percent of contract value within DLA. At this time, there is no analytically based estimate of the cost (to either the ultimate user or to the DLA system) of the receipt of a nonconforming item, the cost of complaint process actions, or the cost of holding discrepant materiel.

B. Problem Statement

There are several facets to measuring a contractor's quality of performance. The cost of late deliveries is one of these facets. The cost of a receipt of nonconforming items is another. Included in this latter cost are several component subcosts such as the costs incurred for holding nonconforming items in stock at various supply levels, the cost of "money" being suspended in potential nonconforming materiel until resolution occurs, and the cost of equipment downtime and military readiness due to the receipt of defective materiel (particularly those items managed by the DLA hardware centers).

Some "costs of quality" are quantifiable in monetary terms - many are not. For example, although a situation in which a major piece of equipment cannot perform its function because of a nonconforming repair part can be easily envisioned as "costly," "costs" cannot be expressed in monetary terms. Military unit readiness and equipment unavailability are "quantified" within all the services. However, this quantification does not lend itself to "dollars and cents" interpretation - one that can be readily utilized in a bid analysis by a contracting officer.

Two directly measurable costs concerning nonconforming supplies can be captured. One such cost represents the total administration performed at various levels within DLA and the Department of Defense (DoD) agencies when a quality complaint for a nonconforming item is initiated and processed. Another cost is that resulting from holding materiel which was determined to be "nonconforming" and which is awaiting resolution for the initiated complaint. The cost of a complaint becomes the sum of the administrative and supply holding costs incurred between complaint initiation and complaint resolution.

C. Objective

The objective of this study is to provide an estimate of the cost associated with the receipt of a nonconforming item. Specifically, this study determines the cost of the quality deficiency reporting process from its inception (when a nonconforming item is discovered) and its processing through various DoD, DLA and individual service activities. Actions for all activities that normally play a part in the process are quantified in monetary terms. Another goal of this study is to determine the average holding cost per complaint resulting from the receipt of a nonconforming item. The intent was to estimate these costs for individual items identified by Federal Supply Class (FSC), Federal Supply Group (FSG), and the managing DLA Supply Center.

In this study, the single cost generated for a complaint, encompassing both holding and administrative components, may be interpreted as the minimum cost for a quality complaint. The complaint process analyzed in this project encompasses only the essential information transfers, investigative efforts, and resolution actions for a typical complaint - this study measures the cost for all actions that should occur, not necessarily all actions that could occur.

D. Scope

The focus of this analysis is on material classified as "nonconforming." A nonconforming supply item, for one or more reasons, cannot be utilized for what it was designed. Because of deficiencies in the item, its intended purpose is diminished or at least limited. A nonconforming item has defects attributable to material, manufacturing, or workmanship. The Quality Deficiency Report (QDR) is the device utilized by service activities and other DoD agencies to report any defects associated with a nonconforming item. For the purpose of this report the terms QDR and complaint are used interchangeably. Submission of this report occurs at all echelons - the ultimate user, the retail supply activity, or the wholesale supply source (service depots) - depending upon the level that detects the nonconforming item. The DLA depots submit a storage quality control report or, simply, a depot complaint for a quality problem. The analysis concentrates on data applicable to QDRs and DLA depot reports. It should be noted that quality complaints for other than defects in the item itself, for example shipping or packaging discrepancies, are documented by means of a "Report of Discrepancy," or ROD. The cost of RODs is the subject of a separate study, the results of which will be provided in a separate report.

The DLA Supply Centers analyzed include the Defense Construction Supply Center (DCSC), the Defense Electronics Supply Center (DESC), the Defense General Supply Center (DGSC) and the Defense Industrial Supply Center (DISC). The Defense Personnel Support Center (DPSC) is regarded as being comprised of two subcenters for this project - Medical (DPSC (Med)), and Clothing and Textile (DPSC (C&T)). The subsistence mission of DPSC and the entire DLA fuel management mission at the Defense Fuel Supply Center (DFSC) are excluded.

In this study, the total administrative cost associated with the processing of a QDR will include the costs of determination of the deficiency; segregation of stocks; investigation; required coordination with contractor; response to disposition instructions for materiel; legal and financial management involvement; and the general flow of information (both formal and informal). The administrative cost is calculated for all scenarios involving each of six centers and each of four levels of complaint initiation (customer or ultimate user; supporting supply activity or retail supply point; service depot; DLA depot).

There are two types of holding costs associated with material awaiting disposition instructions that are generated by QDR resolution. The first is the cost of lost opportunity for investment. The second cost is called the "pure" supply cost.

1. Lost Opportunity Cost. During the period of time a QDR is being investigated - the time between complaint initiation and complaint closure - the nonconforming supplies are "frozen." Since an item which has a complaint issued against it is in a suspense mode, the money invested in this particular item is also "tied up." If this money were allowed to "grow," a profit (theoretically) would be achieved depending upon the period of time that the money is invested. In the scenario of this project, the time that the complaint is in effect, and the value of the items in suspense, can be combined to form a cost of lost opportunity of investment.

2. Pure Supply Cost. The other type of cost is that associated with the holding of physical inventory within a storage facility. The suspended materiel occupies valuable floor or bin space within a depot or retail supply activity. Materiel handling equipment is utilized to segregate suspended stocks. Facilities and other materiel support efforts are involved when deficient stocks are present. These handling and storage costs are computed in this project. The total of all expenses incurred as a result of the physical presence of discrepant stocks in a storage facility over time is the pure supply cost.

II. CONCLUSIONS

The QDR cost equations are provided in Table 1. In this study, the average QDR cost is termed the "evaluation factor" (E.F.). Each formula represents the sum of the average cost of complaint processing and the average cost for holding materiel for a typical item managed by each center. For any given proposed contract value, the evaluation factor can be generated. The use of these equations will be demonstrated in paragraph V (IMPLEMENTATION).

Table 1

INDIVIDUAL CENTER RESULTS

<u>Center</u>	Evaluation Factor per <u>Complaint</u>	-	Admin. <u>Cost</u>	+	Holding Cost <u>Proportion</u>	x	Proposed Contract <u>Value</u>
DCSC	E.F.	=	\$ 426	+	(.043424	x	\$ _____)
DESC	E.F.	=	\$ 308	+	(.045049	x	\$ _____)
DGSC	E.F.	=	\$ 334	+	(.025767	x	\$ _____)
DISC	E.F.	=	\$ 324	+	(.042815	x	\$ _____)
DPSC (C&T)	E.F.	=	\$1,171	+	(.005549	x	\$ _____)
DPSC (Med)	E.F.	=	\$ 414	+	(.068985	x	\$ _____)

The evaluation factor formula for a typical DLA item (averaging over all commodities and supply centers) was also developed. The DLA-wide formula is:

$$\text{E.F.} = \$501 + (.035496 \times \$ \text{Proposed Contract Value})$$

This E.F. resulted from an appropriate weighting of individual center results based on the relative frequency of discrepant materiel occurrences for each supply center.

More detailed evaluation factor formulas were also produced in this study. Appendix A contains E.F. formulas for FSGs within each DLA supply center. The formulas for FSCs are contained in Appendix B.

III. RECOMMENDATIONS. It is recommended that the evaluation factors based on the cost estimates developed in this study be tested at the contracting directorates of one or more DLA supply centers. A list of items that have had numerous quality problems, and a list of contractors having high rates of materiel nonconformance, should be developed. The resulting lists - for both the problem items and the poorer contractor performers - should be combined to generate occasions for which this process would be a viable and meaningful contract cost evaluation procedure.

IV. BENEFITS. The implementation of these evaluation factors will provide a more accurate estimate of the cost of doing business with contractors who have had a history of quality problems. Hopefully, by using these evaluation factors DLA will be able to buy "best value" and thus make more cost-effective contract award decisions. In addition, from a broader perspective, contractors who have had less than a "perfect" complaint history will be motivated to tender only the highest quality materiel to DLA.

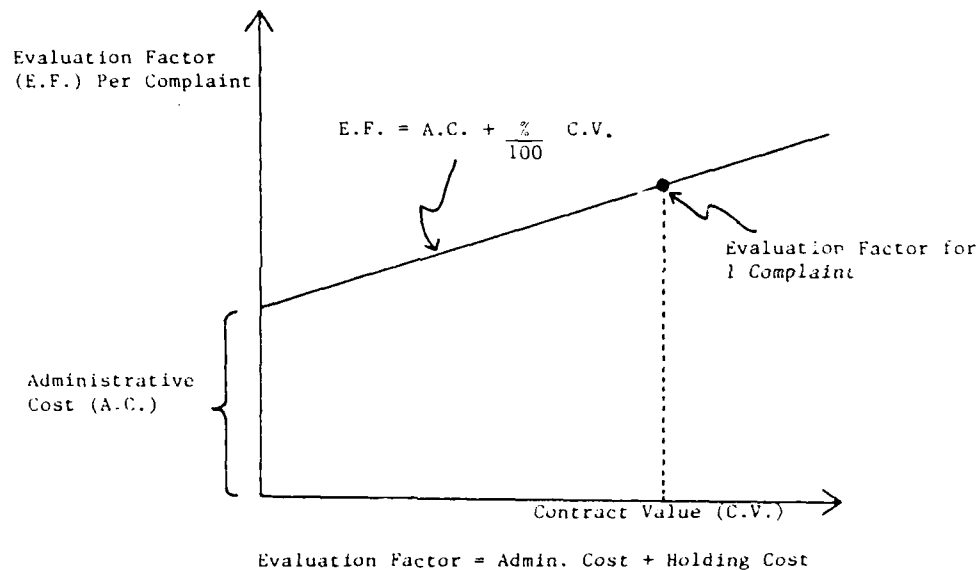
V. IMPLEMENTATION

The evaluation factor tables, attached as the appendices to this report, will be available to the appropriate contracting officers at the DLA supply centers. The evaluation factor - expressed as the sum of two cost components - is graphically displayed in Figure 1; the relationship of both administrative and holding costs to a proposed contract value is evident.

The administrative cost is calculated as a fixed cost for each FSC or FSG. The holding cost, however, is variable. It is represented as a percentage of the proposed contract value for a particular item within an FSC or an FSG. The holding costs percentage is also "rolled up" for each center.

Figure 1

EVALUATION FACTOR DETERMINATION



The key element of information needed to assess the evaluation factor for a contractor is the average number of valid complaints (per contract) experienced for a particular contractor for a specific type of item within an FSC, FSG, or managing center. The number of complaints can be assessed directly from the Customer Depot Complaint System (CDCS) by the Center Contracting Directorate or through coordination with the Center Quality Assurance Directorate. Once this figure is determined, the evaluation factor is readily calculated.

An example will highlight the implementation procedure. References will be made to the appropriate attached appendix for the required figures:

A firm offers \$20,000 for a DISC requirement for items within FSC 5320. This firm has had an average of 3 valid complaints per contract in the past year for FSC 5320 items. Calculate the total evaluation factor and "true" cost of this proposal as follows.

Evaluation Cost Formula:

$$E.F. = \$319 + (.05921 \times \text{Proposed Contract Value})$$

(This formula is taken from Appendix B, p. B-10)

$$\text{Administrative Cost Component} = \$ 319$$

$$\text{Holding Cost Component } (.05921 \times \$20,000) = \$1,184$$

$$\text{Evaluation Factor per Complaint } \$319 + \$1,184 = \$1,503$$

Total Evaluation Factor

(Total Expected Complaint Cost for this Proposal)

= (Average Number of Complaints for FSC 5320 Contracts for this Firm)

x (Evaluation Factor Per Complaint)

$$= 3 \text{ Complaints } \times \$1,503 \text{ per complaint} = \$4,509$$

"True" Cost of Proposal

= (Original Offer) + (Total Evaluation Factor)

$$= \$20,000 + \$4,509 = \$24,509$$

Therefore, for this particular firm, an offer of \$20,000 is expected to cost the government nearly \$25,000 based on this firm's complaint history. This "true" cost may be utilized in comparison with the bids of other competing contractors.

VI. METHODOLOGY

A. Administrative Cost

1. Approach

This portion of the analysis concentrates on the flow of a complaint which is precipitated by the receipt of a nonconforming item(s) by a customer or a retail or wholesale supply activity. The first step in computing the administrative cost identified the materiel flow of items managed by DLA.

purchased from the contractor, and provided to the customer. The main "players" in the supply system were identified and a relative frequency (or probability) was assigned to each of the branches in a diagram representing flow of materiel.

At each of the supply activities which plays a part in the storage and distribution of DLA managed items (DLA depots, service depots, supporting supply activities, and ultimate users), an individual analysis was conducted. This analysis addresses the total administrative costs incurred if a nonconforming item is received by a given activity and if a complaint is subsequently initiated by this activity.

Since each supply activity may initiate a complaint, the entire complaint process beginning with the initiator was analyzed in detail via an expected value procedure. Thus, separate "expected cost" analyses for individual scenarios - defined by complaint initiator and DLA Supply Center - were the analytical tools utilized.

For each unit or activity that initiates a complaint, the costs of all administrative actions performed by all DoD and DLA staff agencies in response to the complaint were captured. The individual costs were based on the time to perform identified tasks, the rank or wage grade of the person performing the tasks, the hourly pay rate (with leave, benefits, fatigue and other factors applied), and the relative frequency of the tasks performed. An expected cost of the total of all administrative actions applicable to a single complaint was the result of the computations.

2. Development of Data. The quantitative information utilized in this analysis was developed from Special Purpose Data (SPD) standards for DLA activities; responses to detailed surveys for agencies that do not have published performance standards (service customer units, retail supply organizations, service depots, and complaint screening points); interviews with and visits to agencies that are involved with materiel and information flow; accumulated performance data submitted by the individual supply centers to the DLA Directorate of Quality Assurance; and historical data from the DLA Integrated Data Bank (DIDB) files and other locally constructed computer data files. Additionally, QDRs currently reflected on the CDCS were utilized to develop a mailing list for surveys to various levels in the wholesale and retail supply chain. The CDCS was also a valuable source of performance and transaction data for complaints processed by supply centers. Information from the accumulated Active Contract Files (ACF) was used in the holding cost portion of the analysis. Lastly, Quality Assurance Management Information System (QAMIS) data was employed to analyze appropriate quality efforts at the Defense Contract Administrative Services (DCAS) level.

B. Holding Costs

1. Approach

The calculation of pure supply costs and lost opportunity costs used certain published factors which were handled as interest or growth rates in the computations. These rates are published in DLAM 7041.1, "Economic Analysis" (May 1985) and in the latest version of "Review of SAMMS Requirements Computations" (August 1985).

Each complaint on the CDCS was individually considered. A value for the pure supply cost, the lost opportunity cost, and the total holding costs was generated for each complaint record. In all cases, a value for each type of cost was computed taking into account the total dollar value of all items on a single complaint, the appropriate rate, and the time period that the complaint was being investigated and resolved.

Averages of all costs were made for each individual FSC, FSG, and DLA supply center. The total holding cost was then expressed as a proportion of the contract value for a given FSC or FSG.

2. Development of Data. The data base utilized was a locally prepared file containing cumulative complaint histories from each DLA supply center. The source of complaint data was the set of CDCS data bases provided to the DLA Operations Research and Economic Analysis Management Support Office (DORO) from the Quality Assurance Directorate at each DLA Supply Center. The source of contract information was the cumulative Active Contract File (ACF) maintained within DORO.

VII. ANALYSIS

A. Detailed Computations

There were many stages of computations which led to the tables attached as appendices. The administrative costs were identified and quantified in a "back-up" analysis to this report, "Cost of Nonconforming Supplies; Part I: Administrative Costs (Detecting Nonconforming Supplies and Processing Complaints)." The development of holding costs was provided in another supplemental report, "Cost of Nonconforming Supplies; Part II: Holding Costs for Materiel Identified as Nonconforming." Hereafter, these reports are referred to as Part I and Part II. Copies of these reports are available through the Senior Study Director, Acquisition Management, DLA-LO. No detailed computations or intermediate results are given in this report - the final results of both back-up analyses were combined to form the tables in the appendices and in paragraph II (CONCLUSIONS).

Explanations of materiel flow quantification, of nonconforming item occurrence measurement, of the complaint reporting process, and of cost calculations are provided in this report.

B. Materiel Flow

The flow of materiel from the contractor through the supply system was the first step in estimating the relative frequencies that were associated with finding and reporting nonconforming materiel found at all levels in the supply chain. The basic flow of materiel is displayed in Figure 2. A contractor may ship DLA items to a DLA depot or to any of the service depots. It may be economically advantageous and more efficient if the contractor ships directly to an appropriate retail supply activity - the source of supply for the ultimate user or requisitioner. This certainly applies in the situation in which items are not normally stocked at DLA depots. These types of supplies are purchased by DLA for direct delivery to customers.

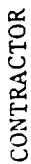
A DLA depot may ship to a service depot or to a retail support activity. A DLA depot may also discover a nonconforming item during inspection by the receiving division. A service depot, receiving supplies directly from a contractor or DLA depot, may ship an item to a supporting supply activity if this item is believed to be conforming. However, a service depot may also discover a nonconforming item and, as a result, prevent shipment to other supply activities. A supporting supply activity or retail supply point may receive items from a DLA depot, a service depot, or directly from a contractor. In any case, it ships to the ultimate user or the requisitioner of the item - this requisitioner will actually use the item for the purpose for which it was designed. Some examples of retail supply activities are Army supply and service companies, Air Force base supply activities, or Navy supply ships. Both the supporting supply activities and the ultimate users have the opportunity to discover a nonconforming item.

The first step of the analysis was the determination of the proportions (probabilities) of conforming and nonconforming items at each level of supply. A complete analysis describing the materiel flow to various supply levels via branch probabilities was provided in Part I of the detailed analysis. Part I provides interim results that were utilized to describe nonconformance at each supply level for each supply center.

C. Cost Calculation Descriptions

Once a nonconforming item is discovered, the reporting processes commence. Costs are accumulated at many and diversified activities as the quality complaint proceeds through the administrative chain. The calculation of the complaint cost depends upon who initiates the complaint as well as which supply center manages a particular item. Costs were captured for each of the following complaint initiators for a typical item at each of the six DLA supply centers.

Figure 2



1. Cost of a complaint initiated by a DLA depot.
2. Cost of a complaint initiated by a service depot.
3. Cost of a complaint initiated by a supporting supply activity or retail supply point.
4. Cost of a complaint initiated by the customer or the ultimate user of the item.

For example, the computed value of the retail supply point complaint cost is the expected cost of all common administrative actions performed by all organizations when a nonconforming item is detected at this supply level - it is not solely the cost experienced by the retail supply point.

Any complaint process beginning at any supply level may involve many other staff activities. The number of participants in the complaint flow depends upon the complexity of the problem, impact on customers, dollar value of the deficient items, and other factors. These staff activities may involve screening points, focal points, action points, testing laboratories, contract administrative representatives, and many other organizations and individuals. Costs associated with all of these staff elements were developed.

The "expected cost" value of a particular supply level's involvement is simply the product of the calculated probability (representing the participant's involvement) and the administrative cost experienced when that supply level is involved. The expected cost of the administration performed in the initiation of and response to a complaint was computed by evaluating the expected cost of each activity of a decision or probability tree that represents the complaint process, and subsequently summing these costs.

Similar actions take place at each supply center when a complaint surfaces to that level. The procedures followed were assumed to be defined in the appropriate SPD standards. However, since each center is oriented to major commodity groupings, some variability in expended complaint processing time may be inherent. For example, the administrative and investigative efforts required for certain repair parts may be substantially greater than those necessary to resolve complaints for a commercial, "off-the-shelf", item. As a result, each center's activities were individually analyzed.

For each item (identified by FSC and FSG), the total expected administrative cost was analyzed (and reported) by component costs. Individual cost estimates, each of which represents the administrative cost for one complaint for a particular center, were developed. Lastly, a single value that represents the costs of a typical complaint for a DLA item - averaging over all complaint initiators and all supply centers - was derived through appropriate weighting of each center cost with nonconforming item occurrence probabilities.

D. Administrative Cost Determination

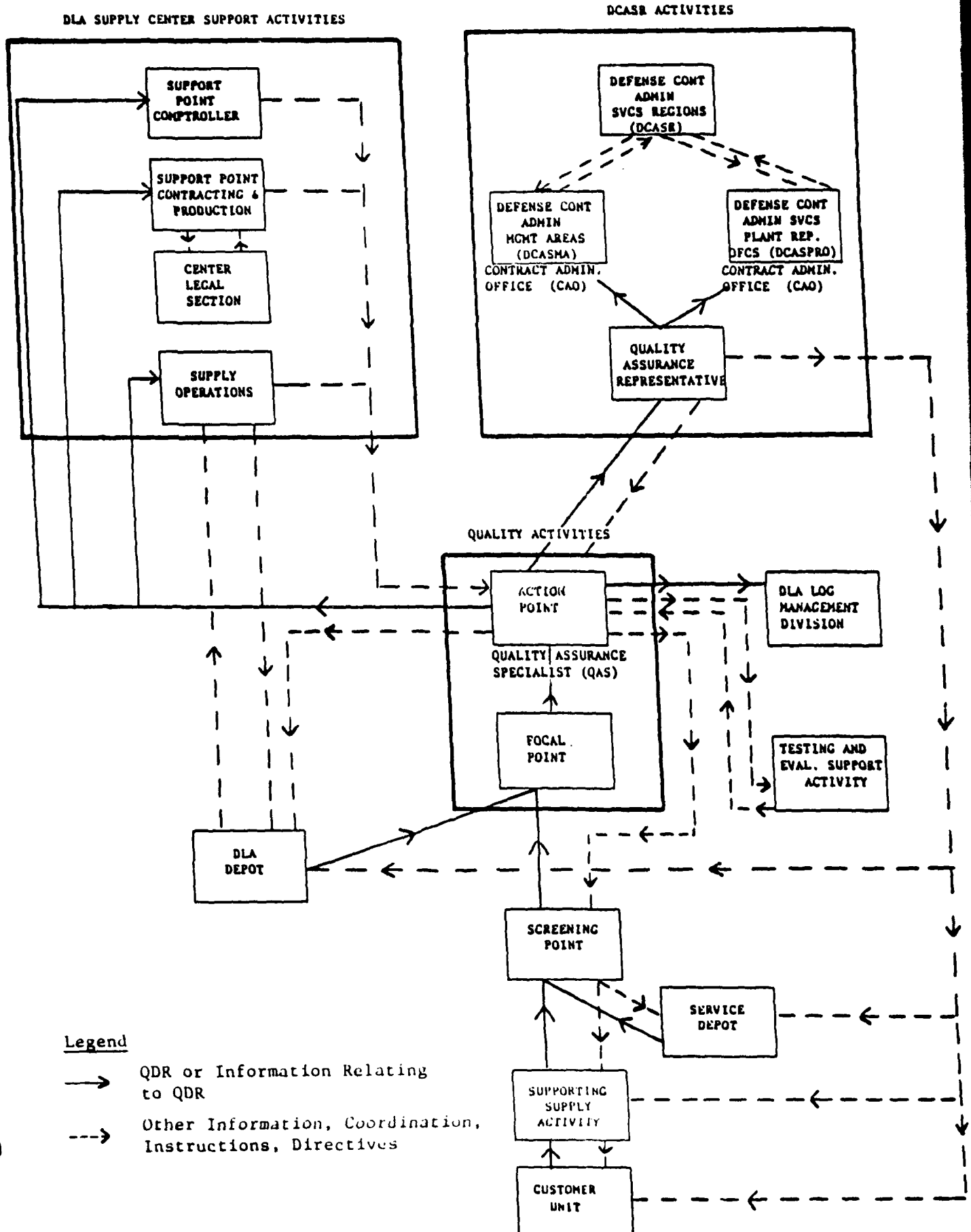
Tracing the complaint flow was the first step in accumulating individual activity costs. The reporting and resolution process is extremely complicated. This complexity arises from the attempt to ensure that the complaint resolution occurs at the lowest level possible, that complete and correct information is always transferred from one activity to another, and that the complaint initiator is satisfied in the most expeditious fashion. The flow of the complaint and other management information is depicted in Figure 3. This is a very streamlined process as depicted. In reality, there are many other lines of information transfer that commonly occur in the resolution of a complaint.

The process may begin with a customer activity. This is the ultimate user of the item - the unit or organization that directly feels the effects of a receipt of a nonconforming item - since this customer's need for the item had placed a demand on the supply system. Upon receipt of a nonconforming item, the customer performs tasks that were detailed in one of the four surveys utilized to solicit information. The cost estimates developed for every function performed by a customer included appropriate consideration of leave and fringe benefit costs and factors such as personal fatigue and work delay. In all cases where information was derived from survey results, the median cost - not the average or mean cost - was utilized. Using the median of all individual survey results provides a better cost estimate by eliminating the risk of a few extremely high or low costs affecting the entire sample.

The costs associated with customer units involve two "phases" or two groups of transactions. The first phase involves the discovery of the nonconforming materiel and the construction and submission of the quality complaint. The second phase involves responding to instructions regarding the disposition of the materiel in conjunction with the resolution of the quality problem. This situation also applies for supporting supply activities, service depots and screening points. The instructions may come from the Quality Assurance Representative (QAR) at Defense Contract Administration Services (DCAS) or the center action point. Instructions are then funneled through the screening point to the customer, retail supply point or service depot. It will be assumed that if an activity initiates a complaint, that activity will eventually be instructed to dispose of the discrepant materiel.

The supporting supply activity or retail supply point may receive the complaint from a customer unit or it may initiate its own report if a nonconforming item is detected upon receipt. The supporting supply activity receives, stores, and issues stock at the retail level directly in support of an intended user. A service depot operating at the wholesale supply level may receive and issue DLA managed items. A service depot, therefore, may detect a nonconforming item and initiate a complaint. Detailed tasks normally performed at a retail supply point and at a service depot were obtained from surveys of these activities. Costs were again calculated based on the time expended and the associated grade of the person performing each task.

Figure 3
COMPLAINT RESOLUTION PROCESS



The screening point acts as a funnel of complaint information from customers, retail supply activities, and service depots. The screening point ensures all the information on a complaint is complete and correct before a submission is made to the appropriate DLA supply center. It acts as the interface between the complaint initiators and the complaint resolvers who are located primarily at the centers. A description of all screening point activities was contained within the fourth and last survey used. Tracing the flow of the complaint as it is initiated, passed and screened, the accumulated non-DLA complaint cost was calculated from survey responses (up to the DLA Supply Center level). This was accomplished for the three possible types of non-DLA complaint initiation (ultimate user, retail supply point, and service depot).

A DLA depot communicates a quality problem directly to a particular supply center depending upon the commodity affected. DLA depots will report a quality problem to DGSC, DCSC, DESC, DISC, and DPSC directly without going through a designated screening point. The actions that a depot normally takes are detailed in SPD standards. In addition to using the SPD standards, the actual flow of information and materiel within Defense Depot Richmond (DDRV) was studied in great detail. In developing the cost estimates, the process at DDRV was considered to be representative of the process at all DLA depots. To calculate the costs accumulated with the receipt of a nonconforming item at a DLA depot, both sources of information were utilized.

The two supply center quality activities involved in complaint processing are the focal point and the action point. DLA SPD standards formed the basis for all computations of costs within the center quality activities. These standards provide a detailed description of all tasks performed by these quality elements. Cost were computed for both QDRs and DLA depot complaints. Relative frequencies or probabilities, reflecting the proportion of time certain actions occurred, were obtained from center performance data provided by DLA-Q as well as SPD standards. These probabilities included the proportion of time a valid complaint action was passed to a servicing QAR at DCAS for resolution; the proportion of time an exhibit was required for investigation; the probability that a technical facility or laboratory was employed; and the proportion of time discrepant materiel was sent to either a disposal activity or returned to the contractor. All probabilities were utilized to calculate expected costs for various activities both within a DLA supply center and at the DCAS level. Due to the anticipated variability in the numbers of transactions passed among supply center activities, and due to the variability of personnel grades among the different centers, each center's focal and action points were individually considered.

The three major supply center support activities are the Contracting and Production Directorate, the Supply Operations Directorate and the Comptroller Office. The degree of participation of these center activities depends upon the decisions made by the action point and the nature of the complaint. SPD standards and calculated transaction probabilities combined to produce the expected cost of involvement for all center support activities. This was accomplished for each individual supply center.

Detailed descriptions for each support activity are available in the set of SPD standards used in this study. A general outline of functions that are commonly performed by center support activities are provided in Part I of this project. Other elements were also analyzed in order to produce a complete estimate of expected costs. These included the legal section at the center, the DLA HQ Quality Assurance Directorate, and technical facilities or laboratories in support of testing and analysis, when and if necessary.

Once costs had been assigned to each activity in the complaint process, with probabilities of event occurrences established to reflect different scenarios, total costs were compiled. A "roll-up" or combined cost included all costs of activities involved with the distribution of both materiel and information. Costs up to and including all supply center elements were then derived.

Costs experienced at the DCAS level were then considered. Elements addressed were the QAR, the Administrative Contracting Officer (ACO), and the regional Product Quality Deficiency Report (PQDR) monitor and the division PQDR monitors. Although SPD standards for the QAR were available, the estimate of costs associated with the QAR was developed in greater detail simply as a result of the wealth of information available on computer files, particularly the Mechanization of Contract Administrative Services (MOCAS) data bases. The expected cost of DCAS involvement became the product of two quantities - the sum total of all individual activity costs at the DCAS level and the probability of DCAS involvement. Each FSC was analyzed separately for the DCAS portion of the analysis. Job descriptions (as they are related to complaint processing) for DCAS elements are found in Part I of the study.

The total complaint administrative cost for each FSC was then developed. An expected cost was obtained through appropriate weighting of complaint occurrences at each of the four possible complaint initiation levels. Results by FSC are shown in Appendix B as the administrative component of the total evaluation factor. FSC results were averaged to produce the FSG results in Appendix A.

The analysis contained in Part I produced a breakdown of administrative costs for each center, FSG and FSC. Costs were stratified by non-DLA activities (ultimate customers, retail supply points, service depots and screening points), DLA activities (all DLA supply center and supply depot elements) and DCAS activities (QAR, monitor and ACO). The total of all administrative costs - experienced by all levels and activities - is that reflected in the appendices to the Part I report. Lastly, to arrive at an overall set of expected costs for non-DLA, DLA and DCAS activities that represent "global" complaint costs (across all centers), each center cost was multiplied by the probability of complaint occurrence at that center. These results are also provided in Part I.

E. Holding Cost Determination

To calculate the holding cost, each record in the CDCS data base that was coded as a QDR or a DLA depot complaint was analyzed. An estimate of the materiel cost on the complaint was derived from the quantity involved in the complaint and the unit price of the particular item. This estimated cost represented the amount of money that was held in suspense awaiting complaint resolution and was utilized as a "principal" from which lost investment opportunity and pure supply costs were generated. Specifics of this analysis are explained in Part II of this project.

The cost rates for holding stock in a suspense mode differ from supply center to supply center. The source of these factors is the latest version of the "Review of SAMMS Requirement Computations," (DLA-LO Project 3040, August 1985). Table 2 displays these rates. No rates were published for DPSC. As an estimate, the average of the other center's rates was used.

Table 2

HOLDING COST RATES

<u>Center</u>	<u>Rate</u>
DCSC	17.0%
DESC	25.0%
DGSC	18.0%
DISC	18.0%
DPSC (C&T)	19.5%
DPSC (Med)	19.5%

The rate used for the cost of lost opportunity in this study is 10 percent. This figure is discussed in DLAM 7041.1, "Economic Analysis" and is referred to as a discount rate for DLA investments. This rate of return is considered to be the most representative overall investment parameter (at the present time). The difference between the total holding cost and the cost of lost opportunity provides the cost of pure supply actions.

In all cases, an estimate of each type of cost for each complaint was computed taking into account the total dollar value of all items on each complaint, the appropriate rate, and the time period that the complaint was being investigated and resolved. Only "closed" complaints - those which have been resolved - were considered in the analysis. Only complaints which were determined to result from "contractor fault" were reviewed. The duration of a complaint was able to be measured to the nearest day; therefore, compounding occurred on each day for the entire period that a complaint was in effect. Given that the total dollar value of items on a complaint is "T," the total worth or "TW" of the money committed to the supplies (if the money could have been invested for a period of "m" days) is:

$$TW = T \left(1 + \frac{r}{365} \right)^m$$

where "r" is the appropriate rate, in decimal form (for example, .10 for lost opportunity or .18 for total holding cost for a DGSC item). The cost experienced, C_E , is the difference between this total worth after a period of "m" days and the initial worth "T":

$$C_E = TW - T$$

An example highlights the computational technique for calculating the total holding costs for materiel reflected on a complaint.

A complaint was reviewed for a DGSC item. The unit price of the item is \$32.50. The number of nonconforming items for this complaint is 50. The complaint was initiated on Julian date 86280 and resolved on Julian date 87025. Determine the total holding cost for materiel on this complaint as follows.

Total Value of Materiel (T)
 \$32.50 per item x 50 items = \$1,625

Total Duration Time of Complaint (m)
 The difference (in days) between
 Julian dates 87025 and 86280 = 111 days

Rate (for DGSC) Expressed as Decimal (r) = .18

Total Worth of Money (TW)

$TW = (\$1625) \left(1 + \frac{.18}{365} \right)^{111 \text{ days}}$ = \$1,716

Total Holding Cost Experienced (C_E)

$C_E = \$1,716 - \$1,625$ = \$91

For this example, the total holding cost experienced by the government for the materiel on this complaint is \$91.

After computing total holding cost values associated with each complaint, all dollar figures were summed to a specific FSC. Average total holding costs per complaint were then calculated for each FSC. The ACF was used to calculate an average contract value for each FSC. The average total holding cost was then expressed as a proportion of average contract value for each FSC in the Part II report. The product of this proportion and the proposed contract value determines the monetary value of the holding cost component of the E.F. formulas reported in this study. This process was repeated to obtain FSG results.

APPENDIX A

Evaluation Factors Federal Supply Group

(By Center and FSG Within Center)

FSG	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION	X CONTRACT	)	PROPOSED VALUE
10	DCSC	E.F.	=	\$426	+	(	0.04148	X \$	)
14	DCSC	E.F.	=	\$426	+	(	0.02304	X \$	)
16	DCSC	E.F.	=	\$504	+	(	0.03118	X \$	)
17	DCSC	E.F.	=	\$504	+	(	0.03047	X \$	)
20	DCSC	E.F.	=	\$426	+	(	0.01920	X \$	)
22	DCSC	E.F.	=	\$426	+	(	0.03287	X \$	)
24	DCSC	E.F.	=	\$426	+	(	0.04342	X \$	)
25	DCSC	E.F.	=	\$399	+	(	0.04874	X \$	)
26	DCSC	E.F.	=	\$426	+	(	0.04342	X \$	)
28	DCSC	E.F.	=	\$456	+	(	0.05517	X \$	)
29	DCSC	E.F.	=	\$456	+	(	0.04723	X \$	)
30	DCSC	E.F.	=	\$447	+	(	0.05019	X \$	)
37	DCSC	E.F.	=	\$426	+	(	0.00697	X \$	)
38	DCSC	E.F.	=	\$426	+	(	0.01751	X \$	)
39	DCSC	E.F.	=	\$426	+	(	0.02233	X \$	)
40	DCSC	E.F.	=	\$426	+	(	0.06096	X \$	)
42	DCSC	E.F.	=	\$456	+	(	0.02599	X \$	)
43	DCSC	E.F.	=	\$456	+	(	0.04180	X \$	)
44	DCSC	E.F.	=	\$426	+	(	0.02509	X \$	)
45	DCSC	E.F.	=	\$402	+	(	0.04339	X \$	)
46	DCSC	E.F.	=	\$426	+	(	0.01950	X \$	)
47	DCSC	E.F.	=	\$402	+	(	0.04706	X \$	)
48	DCSC	E.F.	=	\$415	+	(	0.03289	X \$	)
49	DCSC	E.F.	=	\$415	+	(	0.03714	X \$	)
54	DCSC	E.F.	=	\$426	+	(	0.02289	X \$	)
55	DCSC	E.F.	=	\$420	+	(	0.04026	X \$	)
56	DCSC	E.F.	=	\$426	+	(	0.16648	X \$	)
62	DCSC	E.F.	=	\$426	+	(	0.02349	X \$	)

* There were no historical records reflecting closed complaints for this particular FSG. As a result, a "proportion of average contract value" could not be calculated. The proportion - averaged over all FSG's (within a center) to the center level - was utilized.

FSG	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION	X	PROPOSED CONTRACT VALUE	)
12	DESC	E.F.	=	\$308	+	(	0.05102	X \$	_____)
14	DESC	E.F.	=	\$308	+	(	0.03266	X \$	_____)
16	DESC	E.F.	=	\$308	+	(	0.05917	X \$	_____)
49	DESC	E.F.	=	\$308	+	(	0.06347	X \$	_____)
58	DESC	E.F.	=	\$338	+	(	0.03884	X \$	_____)
59	DESC	E.F.	=	\$312	+	(	0.04589	X \$	_____)
60	DESC	E.F.	=	\$308	+	(	0.04505	X \$	_____)*
61	DESC	E.F.	=	\$308	+	(	0.00183	X \$	_____)
66	DESC	E.F.	=	\$321	+	(	0.03978	X \$	_____)
70	DESC	E.F.	=	\$308	+	(	0.05896	X \$	_____)

* There were no historical records reflecting closed complaints for this particular FSG. As a result, a "proportion of average contract value" could not be calculated. The proportion - averaged over all FSG's (within a center) to the center level - was utilized.

FSG	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION	X CONTRACT	) VALUE
10	DGSC	E.F.	=	\$334	+	(	0.00896	X \$ _____)
18	DGSC	E.F.	=	\$334	+	(	0.02577	X \$ _____)*
20	DGSC	E.F.	=	\$334	+	(	0.02101	X \$ _____)
32	DGSC	E.F.	=	\$334	+	(	0.04869	X \$ _____)
34	DGSC	E.F.	=	\$352	+	(	0.03788	X \$ _____)
35	DGSC	E.F.	=	\$334	+	(	0.04890	X \$ _____)
36	DGSC	E.F.	=	\$334	+	(	0.02693	X \$ _____)
39	DGSC	E.F.	=	\$334	+	(	0.02257	X \$ _____)
41	DGSC	E.F.	=	\$328	+	(	0.03303	X \$ _____)
42	DGSC	E.F.	=	\$316	+	(	0.01684	X \$ _____)
49	DGSC	E.F.	=	\$357	+	(	0.02028	X \$ _____)
52	DGSC	E.F.	=	\$334	+	(	0.01942	X \$ _____)
53	DGSC	E.F.	=	\$334	+	(	0.03142	X \$ _____)
59	DGSC	E.F.	=	\$322	+	(	0.03048	X \$ _____)
61	DGSC	E.F.	=	\$346	+	(	0.02334	X \$ _____)
62	DGSC	E.F.	=	\$321	+	(	0.03284	X \$ _____)
63	DGSC	E.F.	=	\$334	+	(	0.03547	X \$ _____)
66	DGSC	E.F.	=	\$331	+	(	0.02161	X \$ _____)
67	DGSC	E.F.	=	\$331	+	(	0.03275	X \$ _____)
68	DGSC	E.F.	=	\$357	+	(	0.02447	X \$ _____)
69	DGSC	E.F.	=	\$334	+	(	0.01960	X \$ _____)
71	DGSC	E.F.	=	\$334	+	(	0.00882	X \$ _____)
72	DGSC	E.F.	=	\$334	+	(	0.01405	X \$ _____)
73	DGSC	E.F.	=	\$357	+	(	0.05229	X \$ _____)
74	DGSC	E.F.	=	\$334	+	(	0.02577	X \$ _____)*
75	DGSC	E.F.	=	\$334	+	(	0.02414	X \$ _____)
76	DGSC	E.F.	=	\$338	+	(	0.05493	X \$ _____)
81	DGSC	E.F.	=	\$334	+	(	0.02462	X \$ _____)
91	DGSC	E.F.	=	\$357	+	(	0.00881	X \$ _____)
93	DGSC	E.F.	=	\$357	+	(	0.03119	X \$ _____)
94	DGSC	E.F.	=	\$334	+	(	0.02577	X \$ _____)*
99	DGSC	E.F.	=	\$334	+	(	0.01036	X \$ _____)

* There were no historical records reflecting closed complaints for this particular FSG. As a result, a "proportion of average contract value" could not be calculated. The proportion - averaged over all FSG's (within a center) to the center level - was utilized.

FSG	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION	X CONTRACT	)	PROPOSED VALUE
15	DISC	E.F.	=	\$350	+	(	0.02300	X \$	_____)
16	DISC	E.F.	=	\$350	+	(	0.03512	X \$	_____)
20	DISC	E.F.	=	\$324	+	(	0.04826	X \$	_____)
28	DISC	E.F.	=	\$350	+	(	0.03808	X \$	_____)
29	DISC	E.F.	=	\$324	+	(	0.03067	X \$	_____)
31	DISC	E.F.	=	\$326	+	(	0.04198	X \$	_____)
39	DISC	E.F.	=	\$324	+	(	0.03623	X \$	_____)
40	DISC	E.F.	=	\$319	+	(	0.04899	X \$	_____)
53	DISC	E.F.	=	\$319	+	(	0.04458	X \$	_____)
61	DISC	E.F.	=	\$310	+	(	0.03452	X \$	_____)
95	DISC	E.F.	=	\$350	+	(	0.03494	X \$	_____)
96	DISC	E.F.	=	\$324	+	(	0.00354	X \$	_____)

* There were no historical records reflecting closed complaints for this particular FSG. As a result, a "proportion of average contract value" could not be calculated. The proportion - averaged over all FSG's (within a center) to the center level - was utilized.

FSG	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION	X	PROPOSED CONTRACT VALUE	)
72	DPSC-T	E.F.	=	\$1,171	+	(	0.00005	X \$	)
83	DPSC-T	E.F.	=	\$1,171	+	(	0.00413	X \$	)
84	DPSC-T	E.F.	=	\$1,146	+	(	0.00565	X \$	)
94	DPSC-T	E.F.	=	\$1,171	+	(	0.00555	X \$	)*

* There were no historical records reflecting closed complaints for this particular FSG. As a result, a "proportion of average contract value" could not be calculated. The proportion - averaged over all FSG's (within a center) to the center level - was utilized.

FSG	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION	X	PROPOSED CONTRACT VALUE	)
37	DPSC-M	E.F.	=	\$414	+	(	0.23436	X \$	)
42	DPSC-M	E.F.	=	\$414	+	(	0.15741	X \$	)
46	DPSC-M	E.F.	=	\$414	+	(	0.16793	X \$	)
54	DPSC-M	E.F.	=	\$414	+	(	0.15754	X \$	)
61	DPSC-M	E.F.	=	\$414	+	(	0.14516	X \$	)
62	DPSC-M	E.F.	=	\$414	+	(	0.14051	X \$	)
65	DPSC-M	E.F.	=	\$409	+	(	0.06601	X \$	)
66	DPSC-M	E.F.	=	\$413	+	(	0.10246	X \$	)
67	DPSC-M	E.F.	=	\$414	+	(	0.05107	X \$	)
68	DPSC-M	E.F.	=	\$414	+	(	0.14203	X \$	)
69	DPSC-M	E.F.	=	\$414	+	(	0.21463	X \$	)
72	DPSC-M	E.F.	=	\$414	+	(	0.05438	X \$	)
73	DPSC-M	E.F.	=	\$414	+	(	0.00002	X \$	)
75	DPSC-M	E.F.	=	\$414	+	(	0.09592	X \$	)
76	DPSC-M	E.F.	=	\$414	+	(	0.25000	X \$	)
80	DPSC-M	E.F.	=	\$414	+	(	0.05556	X \$	)
81	DPSC-M	E.F.	=	\$414	+	(	0.06447	X \$	)
88	DPSC-M	E.F.	=	\$414	+	(	0.06898	X \$	)
94	DPSC-M	E.F.	=	\$414	+	(	0.06898	X \$	)*

* There were no historical records reflecting closed complaints for this particular FSG. As a result, a "proportion of average contract value" could not be calculated. The proportion - averaged over all FSG's (within a center) to the center level - was utilized.

APPENDIX B

Evaluation Factors Federal Supply Class

(By Center and FSC Within Center)

FSC	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION X	PROPOSED CONTRACT VALUE	)
1005	DCSC	E.F.	=	\$426	+	(0.03758 X	\$	)
1010	DCSC	E.F.	=	\$426	+	(0.00085 X	\$	)
1015	DCSC	E.F.	=	\$426	+	(0.03868 X	\$	)
1020	DCSC	E.F.	=	\$426	+	(0.08172 X	\$	)
1025	DCSC	E.F.	=	\$426	+	(0.03025 X	\$	)
1030	DCSC	E.F.	=	\$426	+	(0.06416 X	\$	)
1095	DCSC	E.F.	=	\$426	+	(0.00322 X	\$	)
1450	DCSC	E.F.	=	\$426	+	(0.02304 X	\$	)
1610	DCSC	E.F.	=	\$504	+	(0.00538 X	\$	)
1615	DCSC	E.F.	=	\$504	+	(0.02216 X	\$	)
1620	DCSC	E.F.	=	\$504	+	(0.01430 X	\$	)
1630	DCSC	E.F.	=	\$504	+	(0.00349 X	\$	)
1650	DCSC	E.F.	=	\$504	+	(0.03533 X	\$	)
1730	DCSC	E.F.	=	\$504	+	(0.02885 X	\$	)
1740	DCSC	E.F.	=	\$504	+	(0.06447 X	\$	)
2010	DCSC	E.F.	=	\$426	+	(0.01920 X	\$	)
2230	DCSC	E.F.	=	\$426	+	(0.03287 X	\$	)*
2240	DCSC	E.F.	=	\$426	+	(0.03287 X	\$	)
2250	DCSC	E.F.	=	\$426	+	(0.03287 X	\$	)*
2410	DCSC	E.F.	=	\$426	+	(0.04342 X	\$	)*
2420	DCSC	E.F.	=	\$426	+	(0.04342 X	\$	)*
2510	DCSC	E.F.	=	\$399	+	(0.04450 X	\$	)
2520	DCSC	E.F.	=	\$399	+	(0.04623 X	\$	)
2530	DCSC	E.F.	=	\$399	+	(0.04789 X	\$	)
2540	DCSC	E.F.	=	\$399	+	(0.05782 X	\$	)
2590	DCSC	E.F.	=	\$399	+	(0.04995 X	\$	)
2620	DCSC	E.F.	=	\$426	+	(0.04342 X	\$	)*
2805	DCSC	E.F.	=	\$456	+	(0.05058 X	\$	)
2815	DCSC	E.F.	=	\$456	+	(0.04837 X	\$	)
2820	DCSC	E.F.	=	\$456	+	(0.05517 X	\$	)*
2825	DCSC	E.F.	=	\$456	+	(0.06692 X	\$	)
2830	DCSC	E.F.	=	\$456	+	(0.10146 X	\$	)
2850	DCSC	E.F.	=	\$456	+	(0.05517 X	\$	)*
2895	DCSC	E.F.	=	\$456	+	(0.00024 X	\$	)
2910	DCSC	E.F.	=	\$456	+	(0.04314 X	\$	)
2920	DCSC	E.F.	=	\$456	+	(0.03779 X	\$	)
2930	DCSC	E.F.	=	\$456	+	(0.04434 X	\$	)
2940	DCSC	E.F.	=	\$456	+	(0.06511 X	\$	)
2990	DCSC	E.F.	=	\$456	+	(0.05836 X	\$	)
3010	DCSC	E.F.	=	\$447	+	(0.05001 X	\$	)
3020	DCSC	E.F.	=	\$447	+	(0.05048 X	\$	)
3030	DCSC	E.F.	=	\$447	+	(0.06845 X	\$	)
3040	DCSC	E.F.	=	\$447	+	(0.04075 X	\$	)
3710	DCSC	E.F.	=	\$426	+	(0.00697 X	\$	)*
3720	DCSC	E.F.	=	\$426	+	(0.00697 X	\$	)*
3730	DCSC	E.F.	=	\$426	+	(0.00697 X	\$	)*
3740	DCSC	E.F.	=	\$426	+	(0.00759 X	\$	)
3760	DCSC	E.F.	=	\$426	+	(0.00697 X	\$	)*
3770	DCSC	E.F.	=	\$426	+	(0.00021 X	\$	)
3805	DCSC	E.F.	=	\$426	+	(0.00613 X	\$	)
3810	DCSC	E.F.	=	\$426	+	(0.00173 X	\$	)
3815	DCSC	E.F.	=	\$426	+	(0.00157 X	\$	)
3820	DCSC	E.F.	=	\$426	+	(0.00812 X	\$	)
3825	DCSC	E.F.	=	\$426	+	(0.02202 X	\$	)
3830	DCSC	E.F.	=	\$426	+	(0.07980 X	\$	)
3835	DCSC	E.F.	=	\$426	+	(0.04135 X	\$	)
3895	DCSC	E.F.	=	\$426	+	(0.00772 X	\$	)
3910	DCSC	E.F.	=	\$426	+	(0.05082 X	\$	)

* There were no historical records reflecting closed complaints for this particular FSC. As a result, a "proportion of average contract value" could not be calculated. The proportion for the particular FSG under which this FSC falls was utilized.

FSC	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION X	PROPOSED CONTRACT VALUE)
3915	DCSC	E.F.	=	\$426	+	(0.02233 X	\$ _____)*
3930	DCSC	E.F.	=	\$426	+	(0.00991 X	\$ _____)
3950	DCSC	E.F.	=	\$426	+	(0.02602 X	\$ _____)
3960	DCSC	E.F.	=	\$426	+	(0.02233 X	\$ _____)*
4010	DCSC	E.F.	=	\$426	+	(0.06096 X	\$ _____)*
4210	DCSC	E.F.	=	\$456	+	(0.02270 X	\$ _____)
4220	DCSC	E.F.	=	\$456	+	(0.03174 X	\$ _____)
4310	DCSC	E.F.	=	\$456	+	(0.03418 X	\$ _____)
4320	DCSC	E.F.	=	\$456	+	(0.04321 X	\$ _____)
4330	DCSC	E.F.	=	\$456	+	(0.03562 X	\$ _____)
4410	DCSC	E.F.	=	\$426	+	(0.03307 X	\$ _____)
4420	DCSC	E.F.	=	\$426	+	(0.02326 X	\$ _____)
4430	DCSC	E.F.	=	\$426	+	(0.08027 X	\$ _____)
4440	DCSC	E.F.	=	\$426	+	(0.01536 X	\$ _____)
4460	DCSC	E.F.	=	\$426	+	(0.02046 X	\$ _____)
4510	DCSC	E.F.	=	\$402	+	(0.05065 X	\$ _____)
4520	DCSC	E.F.	=	\$402	+	(0.04715 X	\$ _____)
4530	DCSC	E.F.	=	\$402	+	(0.05098 X	\$ _____)
4540	DCSC	E.F.	=	\$402	+	(0.03018 X	\$ _____)
4610	DCSC	E.F.	=	\$426	+	(0.02151 X	\$ _____)
4620	DCSC	E.F.	=	\$426	+	(0.00680 X	\$ _____)
4630	DCSC	E.F.	=	\$426	+	(0.01950 X	\$ _____)*
4710	DCSC	E.F.	=	\$402	+	(0.03727 X	\$ _____)
4720	DCSC	E.F.	=	\$402	+	(0.05485 X	\$ _____)
4730	DCSC	E.F.	=	\$402	+	(0.04733 X	\$ _____)
4810	DCSC	E.F.	=	\$415	+	(0.03502 X	\$ _____)
4820	DCSC	E.F.	=	\$415	+	(0.03272 X	\$ _____)
4910	DCSC	E.F.	=	\$415	+	(0.02393 X	\$ _____)
4930	DCSC	E.F.	=	\$415	+	(0.04632 X	\$ _____)
4940	DCSC	E.F.	=	\$415	+	(0.01244 X	\$ _____)
5410	DCSC	E.F.	=	\$426	+	(0.01879 X	\$ _____)
5411	DCSC	E.F.	=	\$426	+	(0.02289 X	\$ _____)*
5420	DCSC	E.F.	=	\$426	+	(0.02669 X	\$ _____)
5430	DCSC	E.F.	=	\$426	+	(0.05849 X	\$ _____)
5440	DCSC	E.F.	=	\$426	+	(0.03445 X	\$ _____)
5445	DCSC	E.F.	=	\$426	+	(0.02289 X	\$ _____)*
5450	DCSC	E.F.	=	\$426	+	(0.00995 X	\$ _____)
5510	DCSC	E.F.	=	\$420	+	(0.03898 X	\$ _____)
5520	DCSC	E.F.	=	\$420	+	(0.04026 X	\$ _____)*
5530	DCSC	E.F.	=	\$420	+	(0.04979 X	\$ _____)
5660	DCSC	E.F.	=	\$426	+	(0.04368 X	\$ _____)
5680	DCSC	E.F.	=	\$426	+	(0.22788 X	\$ _____)
6230	DCSC	E.F.	=	\$426	+	(0.02349 X	\$ _____)

* There were no historical records reflecting closed complaints for this particular FSC. As a result, a "proportion of average contract value" could not be calculated. The proportion for the particular FSG under which this FSC falls was utilized.

FSC	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION X CONTRACT VALUE)
1210	DESC	E.F.	"	\$308	+	(0.00185 X \$)
1220	DESC	E.F.	"	\$308	+	(0.06554 X \$)
1240	DESC	E.F.	"	\$308	+	(0.05869 X \$)
1260	DESC	E.F.	"	\$308	+	(0.16225 X \$)
1265	DESC	E.F.	"	\$308	+	(0.05405 X \$)
1270	DESC	E.F.	"	\$308	+	(0.05670 X \$)
1280	DESC	E.F.	"	\$308	+	(0.04275 X \$)
1285	DESC	E.F.	"	\$308	+	(0.00507 X \$)
1290	DESC	E.F.	"	\$308	+	(0.02008 X \$)
1420	DESC	E.F.	"	\$308	+	(0.06072 X \$)
1430	DESC	E.F.	"	\$308	+	(0.02812 X \$)
1440	DESC	E.F.	"	\$308	+	(0.03574 X \$)
1660	DESC	E.F.	"	\$308	+	(0.05917 X \$)
4931	DESC	E.F.	"	\$308	+	(0.01636 X \$)
4935	DESC	E.F.	"	\$308	+	(0.07834 X \$)
5805	DESC	E.F.	"	\$338	+	(0.04005 X \$)
5815	DESC	E.F.	"	\$338	+	(0.04467 X \$)
5820	DESC	E.F.	"	\$338	+	(0.04605 X \$)
5821	DESC	E.F.	"	\$338	+	(0.03387 X \$)
5825	DESC	E.F.	"	\$338	+	(0.00637 X \$)
5826	DESC	E.F.	"	\$338	+	(0.01779 X \$)
5830	DESC	E.F.	"	\$338	+	(0.05812 X \$)
5831	DESC	E.F.	"	\$338	+	(0.01616 X \$)
5835	DESC	E.F.	"	\$338	+	(0.02920 X \$)
5836	DESC	E.F.	"	\$338	+	(0.02597 X \$)
5840	DESC	E.F.	"	\$338	+	(0.01644 X \$)
5841	DESC	E.F.	"	\$338	+	(0.03511 X \$)
5845	DESC	E.F.	"	\$338	+	(0.00978 X \$)
5850	DESC	E.F.	"	\$338	+	(0.00499 X \$)
5855	DESC	E.F.	"	\$338	+	(0.03629 X \$)
5860	DESC	E.F.	"	\$338	+	(0.10325 X \$)
5865	DESC	E.F.	"	\$338	+	(0.03733 X \$)
5895	DESC	E.F.	"	\$338	+	(0.03667 X \$)
5905	DESC	E.F.	"	\$302	+	(0.06795 X \$)
5910	DESC	E.F.	"	\$302	+	(0.02513 X \$)
5915	DESC	E.F.	"	\$302	+	(0.05055 X \$)
5920	DESC	E.F.	"	\$300	+	(0.04467 X \$)
5925	DESC	E.F.	"	\$300	+	(0.04423 X \$)
5930	DESC	E.F.	"	\$300	+	(0.05371 X \$)
5935	DESC	E.F.	"	\$300	+	(0.04433 X \$)
5945	DESC	E.F.	"	\$300	+	(0.04668 X \$)
5950	DESC	E.F.	"	\$300	+	(0.05768 X \$)
5955	DESC	E.F.	"	\$300	+	(0.04224 X \$)
5960	DESC	E.F.	"	\$321	+	(0.02491 X \$)
5961	DESC	E.F.	"	\$302	+	(0.05069 X \$)
5962	DESC	E.F.	"	\$321	+	(0.05100 X \$)
5963	DESC	E.F.	"	\$312	+	(0.03797 X \$)
5965	DESC	E.F.	"	\$338	+	(0.02135 X \$)
5980	DESC	E.F.	"	\$312	+	(0.00615 X \$)
5985	DESC	E.F.	"	\$338	+	(0.03631 X \$)
5990	DESC	E.F.	"	\$338	+	(0.04293 X \$)
5999	DESC	E.F.	"	\$338	+	(0.05119 X \$)
6010	DESC	E.F.	"	\$308	+	(0.04505 X \$)*
6015	DESC	E.F.	"	\$308	+	(0.04505 X \$)*
6020	DESC	E.F.	"	\$308	+	(0.04505 X \$)*
6030	DESC	E.F.	"	\$308	+	(0.04505 X \$)*
6060	DESC	E.F.	"	\$308	+	(0.04505 X \$)*
6070	DESC	E.F.	"	\$308	+	(0.04505 X \$)*

* There were no historical records reflecting closed complaints for this particular FSC. As a result, a "proportion of average contract value" could not be calculated. The proportion for the particular FSG under which this FSC falls was utilized.

FSC	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION X	PROPOSED CONTRACT VALUE	)
6080	DESC	E.F.	=	\$308	+	(0.04505 X	\$ _____)	*
6625	DESC	E.F.	=	\$321	+	(0.03978 X	\$ _____)	
7010	DESC	E.F.	=	\$308	+	(0.07447 X	\$ _____)	
7020	DESC	E.F.	=	\$308	+	(0.05896 X	\$ _____)	*
7021	DESC	E.F.	=	\$308	+	(0.04165 X	\$ _____)	
7025	DESC	E.F.	=	\$308	+	(0.07055 X	\$ _____)	
7030	DESC	E.F.	=	\$308	+	(0.05896 X	\$ _____)	*
7035	DESC	E.F.	=	\$308	+	(0.04537 X	\$ _____)	
7040	DESC	E.F.	=	\$308	+	(0.00998 X	\$ _____)	
7045	DESC	E.F.	=	\$308	+	(0.05998 X	\$ _____)	
7050	DESC	E.F.	=	\$308	+	(0.03093 X	\$ _____)	

* There were no historical records reflecting closed complaints for this particular FSC. As a result, a "proportion of average contract value" could not be calculated. The proportion for the particular FSG under which this FSC falls was utilized.

FSC	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION X	PROPOSED CONTRACT VALUE	)
1040	DGSC	E.F.	=	\$334	+	(0.00896 X	\$ _____	)*
1045	DGSC	E.F.	=	\$334	+	(0.00896 X	\$ _____	)*
1055	DGSC	E.F.	=	\$334	+	(0.01202 X	\$ _____	)*
1075	DGSC	E.F.	=	\$334	+	(0.00896 X	\$ _____	)*
1080	DGSC	E.F.	=	\$334	+	(0.00622 X	\$ _____	)*
1090	DGSC	E.F.	=	\$334	+	(0.00545 X	\$ _____	)*
1820	DGSC	E.F.	=	\$334	+	(0.02577 X	\$ _____	)*
1830	DGSC	E.F.	=	\$334	+	(0.02577 X	\$ _____	)*
1840	DGSC	E.F.	=	\$334	+	(0.02577 X	\$ _____	)*
1850	DGSC	E.F.	=	\$334	+	(0.02577 X	\$ _____	)*
1860	DGSC	E.F.	=	\$334	+	(0.02577 X	\$ _____	)*
2050	DGSC	E.F.	=	\$334	+	(0.02101 X	\$ _____	)*
2060	DGSC	E.F.	=	\$334	+	(0.02101 X	\$ _____	)*
2090	DGSC	E.F.	=	\$334	+	(0.02101 X	\$ _____	)*
3210	DGSC	E.F.	=	\$334	+	(0.04869 X	\$ _____	)*
3220	DGSC	E.F.	=	\$334	+	(0.02977 X	\$ _____	)*
3230	DGSC	E.F.	=	\$334	+	(0.05416 X	\$ _____	)*
3405	DGSC	E.F.	=	\$352	+	(0.03374 X	\$ _____	)*
3408	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3410	DGSC	E.F.	=	\$352	+	(0.00035 X	\$ _____	)*
3411	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3412	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3413	DGSC	E.F.	=	\$352	+	(0.03654 X	\$ _____	)*
3414	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3415	DGSC	E.F.	=	\$352	+	(0.00358 X	\$ _____	)*
3416	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3417	DGSC	E.F.	=	\$352	+	(0.00124 X	\$ _____	)*
3418	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3419	DGSC	E.F.	=	\$352	+	(0.00127 X	\$ _____	)*
3422	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3424	DGSC	E.F.	=	\$352	+	(0.00115 X	\$ _____	)*
3426	DGSC	E.F.	=	\$352	+	(0.02316 X	\$ _____	)*
3431	DGSC	E.F.	=	\$352	+	(0.03427 X	\$ _____	)*
3432	DGSC	E.F.	=	\$352	+	(0.00163 X	\$ _____	)*
3433	DGSC	E.F.	=	\$352	+	(0.03985 X	\$ _____	)*
3436	DGSC	E.F.	=	\$352	+	(0.01649 X	\$ _____	)*
3438	DGSC	E.F.	=	\$352	+	(0.04380 X	\$ _____	)*
3439	DGSC	E.F.	=	\$352	+	(0.03793 X	\$ _____	)*
3441	DGSC	E.F.	=	\$352	+	(0.02521 X	\$ _____	)*
3442	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3443	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3444	DGSC	E.F.	=	\$352	+	(0.01919 X	\$ _____	)*
3445	DGSC	E.F.	=	\$352	+	(0.00090 X	\$ _____	)*
3446	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3447	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3448	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3449	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3450	DGSC	E.F.	=	\$352	+	(0.00215 X	\$ _____	)*
3455	DGSC	E.F.	=	\$352	+	(0.04479 X	\$ _____	)*
3456	DGSC	E.F.	=	\$352	+	(0.04212 X	\$ _____	)*
3460	DGSC	E.F.	=	\$352	+	(0.03275 X	\$ _____	)*
3461	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3465	DGSC	E.F.	=	\$352	+	(0.13904 X	\$ _____	)*
3470	DGSC	E.F.	=	\$352	+	(0.03788 X	\$ _____	)*
3510	DGSC	E.F.	=	\$334	+	(0.09244 X	\$ _____	)*
3520	DGSC	E.F.	=	\$334	+	(0.04890 X	\$ _____	)*
3530	DGSC	E.F.	=	\$334	+	(0.02832 X	\$ _____	)*
3605	DGSC	E.F.	=	\$334	+	(0.02693 X	\$ _____	)*

* There were no historical records reflecting closed complaints for this particular FSC. As a result, a "proportion of average contract value" could not be calculated. The proportion for the particular FSG under which this FSC falls was utilized.

FSC	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION X CONTRACT VALUE)
3610	DGSC	E.F.	=	\$334	+	(0.03220 X \$)
3611	DGSC	E.F.	=	\$334	+	(0.01450 X \$)
3615	DGSC	E.F.	=	\$334	+	(0.02746 X \$)
3620	DGSC	E.F.	=	\$334	+	(0.02693 X \$)*
3625	DGSC	E.F.	=	\$334	+	(0.02693 X \$)*
3630	DGSC	E.F.	=	\$334	+	(0.02693 X \$)*
3635	DGSC	E.F.	=	\$334	+	(0.08923 X \$)
3640	DGSC	E.F.	=	\$334	+	(0.02693 X \$)*
3645	DGSC	E.F.	=	\$334	+	(0.02693 X \$)*
3650	DGSC	E.F.	=	\$334	+	(0.02693 X \$)*
3655	DGSC	E.F.	=	\$334	+	(0.00831 X \$)
3660	DGSC	E.F.	=	\$334	+	(0.02693 X \$)*
3670	DGSC	E.F.	=	\$334	+	(0.02693 X \$)*
3680	DGSC	E.F.	=	\$334	+	(0.02693 X \$)*
3685	DGSC	E.F.	=	\$334	+	(0.02693 X \$)*
3690	DGSC	E.F.	=	\$334	+	(0.02693 X \$)*
3693	DGSC	E.F.	=	\$334	+	(0.02693 X \$)*
3694	DGSC	E.F.	=	\$334	+	(0.00076 X \$)
3695	DGSC	E.F.	=	\$334	+	(0.00515 X \$)
3920	DGSC	E.F.	=	\$334	+	(0.01936 X \$)
3940	DGSC	E.F.	=	\$334	+	(0.03243 X \$)
3990	DGSC	E.F.	=	\$334	+	(0.02718 X \$)
4110	DGSC	E.F.	=	\$328	+	(0.03462 X \$)
4120	DGSC	E.F.	=	\$328	+	(0.00226 X \$)
4130	DGSC	E.F.	=	\$328	+	(0.03650 X \$)
4140	DGSC	E.F.	=	\$328	+	(0.02515 X \$)
4230	DGSC	E.F.	=	\$316	+	(0.00070 X \$)
4240	DGSC	E.F.	=	\$316	+	(0.01737 X \$)
4920	DGSC	E.F.	=	\$357	+	(0.02136 X \$)
4921	DGSC	E.F.	=	\$357	+	(0.02028 X \$)*
4923	DGSC	E.F.	=	\$357	+	(0.02028 X \$)*
4925	DGSC	E.F.	=	\$357	+	(0.02028 X \$)*
4927	DGSC	E.F.	=	\$357	+	(0.02028 X \$)*
4933	DGSC	E.F.	=	\$357	+	(0.01306 X \$)
4960	DGSC	E.F.	=	\$357	+	(0.02028 X \$)*
5220	DGSC	E.F.	=	\$334	+	(0.01942 X \$)
5280	DGSC	E.F.	=	\$334	+	(0.01942 X \$)*
5355	DGSC	E.F.	=	\$334	+	(0.03142 X \$)
5940	DGSC	E.F.	=	\$321	+	(0.04357 X \$)
5970	DGSC	E.F.	=	\$321	+	(0.04048 X \$)
5975	DGSC	E.F.	=	\$324	+	(0.03558 X \$)
5977	DGSC	E.F.	=	\$324	+	(0.02500 X \$)
5995	DGSC	E.F.	=	\$321	+	(0.01844 X \$)
6105	DGSC	E.F.	=	\$357	+	(0.02554 X \$)
6110	DGSC	E.F.	=	\$324	+	(0.01868 X \$)
6115	DGSC	E.F.	=	\$357	+	(0.02452 X \$)
6116	DGSC	E.F.	=	\$346	+	(0.02334 X \$)*
6120	DGSC	E.F.	=	\$346	+	(0.01881 X \$)
6125	DGSC	E.F.	=	\$346	+	(0.00824 X \$)
6130	DGSC	E.F.	=	\$357	+	(0.02468 X \$)
6135	DGSC	E.F.	=	\$346	+	(0.01052 X \$)
6140	DGSC	E.F.	=	\$357	+	(0.02999 X \$)
6150	DGSC	E.F.	=	\$324	+	(0.01559 X \$)
6210	DGSC	E.F.	=	\$321	+	(0.03257 X \$)
6220	DGSC	E.F.	=	\$321	+	(0.02024 X \$)
6230	DGSC	E.F.	=	\$321	+	(0.02997 X \$)
6240	DGSC	E.F.	=	\$321	+	(0.03962 X \$)
6250	DGSC	E.F.	=	\$321	+	(0.03996 X \$)

* There were no historical records reflecting closed complaints for this particular FSC. As a result, a "proportion of average contract value" could not be calculated. The proportion for the particular FSC under which this FSC falls was utilized.

FSC	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION X	PROPOSED CONTRACT VALUE)
6260	DGSC	E.F.	=	\$321	+	(0.02544 X	\$ _____)
6310	DGSC	E.F.	=	\$334	+	(0.03547 X	\$ _____)*
6320	DGSC	E.F.	=	\$334	+	(0.00069 X	\$ _____)
6330	DGSC	E.F.	=	\$334	+	(0.03547 X	\$ _____)*
6340	DGSC	E.F.	=	\$334	+	(0.03340 X	\$ _____)
6350	DGSC	E.F.	=	\$334	+	(0.03712 X	\$ _____)
6605	DGSC	E.F.	=	\$331	+	(0.05361 X	\$ _____)
6610	DGSC	E.F.	=	\$331	+	(0.01993 X	\$ _____)
6615	DGSC	E.F.	=	\$331	+	(0.00839 X	\$ _____)
6620	DGSC	E.F.	=	\$331	+	(0.02614 X	\$ _____)
6635	DGSC	E.F.	=	\$331	+	(0.02706 X	\$ _____)
6636	DGSC	E.F.	=	\$331	+	(0.02161 X	\$ _____)*
6645	DGSC	E.F.	=	\$331	+	(0.01987 X	\$ _____)
6650	DGSC	E.F.	=	\$331	+	(0.03154 X	\$ _____)
6655	DGSC	E.F.	=	\$331	+	(0.02123 X	\$ _____)
6660	DGSC	E.F.	=	\$331	+	(0.02393 X	\$ _____)
6665	DGSC	E.F.	=	\$331	+	(0.02578 X	\$ _____)
6670	DGSC	E.F.	=	\$331	+	(0.02041 X	\$ _____)
6675	DGSC	E.F.	=	\$331	+	(0.03476 X	\$ _____)
6680	DGSC	E.F.	=	\$331	+	(0.02438 X	\$ _____)
6685	DGSC	E.F.	=	\$331	+	(0.01762 X	\$ _____)
6695	DGSC	E.F.	=	\$331	+	(0.02471 X	\$ _____)
6710	DGSC	E.F.	=	\$331	+	(0.03275 X	\$ _____)*
6720	DGSC	E.F.	=	\$331	+	(0.00195 X	\$ _____)
6730	DGSC	E.F.	=	\$331	+	(0.02606 X	\$ _____)
6740	DGSC	E.F.	=	\$331	+	(0.02393 X	\$ _____)
6750	DGSC	E.F.	=	\$331	+	(0.03305 X	\$ _____)
6760	DGSC	E.F.	=	\$331	+	(0.03445 X	\$ _____)
6770	DGSC	E.F.	=	\$331	+	(0.00077 X	\$ _____)
6780	DGSC	E.F.	=	\$331	+	(0.00235 X	\$ _____)
6810	DGSC	E.F.	=	\$357	+	(0.01958 X	\$ _____)
6820	DGSC	E.F.	=	\$357	+	(0.00318 X	\$ _____)
6830	DGSC	E.F.	=	\$357	+	(0.01722 X	\$ _____)
6840	DGSC	E.F.	=	\$357	+	(0.02558 X	\$ _____)
6850	DGSC	E.F.	=	\$357	+	(0.02916 X	\$ _____)
6910	DGSC	E.F.	=	\$334	+	(0.01960 X	\$ _____)*
6920	DGSC	E.F.	=	\$334	+	(0.02012 X	\$ _____)
6930	DGSC	E.F.	=	\$334	+	(0.01611 X	\$ _____)
6940	DGSC	E.F.	=	\$334	+	(0.01960 X	\$ _____)*
7105	DGSC	E.F.	=	\$334	+	(0.01265 X	\$ _____)
7110	DGSC	E.F.	=	\$334	+	(0.00632 X	\$ _____)
7125	DGSC	E.F.	=	\$334	+	(0.00754 X	\$ _____)
7195	DGSC	E.F.	=	\$334	+	(0.01220 X	\$ _____)
7240	DGSC	E.F.	=	\$334	+	(0.01405 X	\$ _____)
7310	DGSC	E.F.	=	\$357	+	(0.05063 X	\$ _____)
7320	DGSC	E.F.	=	\$357	+	(0.05492 X	\$ _____)
7330	DGSC	E.F.	=	\$357	+	(0.01445 X	\$ _____)
7340	DGSC	E.F.	=	\$357	+	(0.01317 X	\$ _____)
7360	DGSC	E.F.	=	\$357	+	(0.06282 X	\$ _____)
7450	DGSC	E.F.	=	\$334	+	(0.02577 X	\$ _____)*
7530	DGSC	E.F.	=	\$334	+	(0.02414 X	\$ _____)
7610	DGSC	E.F.	=	\$338	+	(0.08361 X	\$ _____)
7630	DGSC	E.F.	=	\$338	+	(0.05493 X	\$ _____)*
7640	DGSC	E.F.	=	\$338	+	(0.00052 X	\$ _____)
7650	DGSC	E.F.	=	\$338	+	(0.05493 X	\$ _____)*
7660	DGSC	E.F.	=	\$338	+	(0.05493 X	\$ _____)*
7670	DGSC	E.F.	=	\$338	+	(0.05493 X	\$ _____)*
7690	DGSC	E.F.	=	\$338	+	(0.05347 X	\$ _____)

* There were no historical records reflecting closed complaints for this particular FSC. As a result, a "proportion of average contract value" could not be calculated. The proportion for the particular FSG under which this FSC falls was utilized.

FSC	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION X	PROPOSED CONTRACT VALUE	)
8110	DGSC	E.F.	=	\$334	+	(0.02148 X	\$ _____	)
8115	DGSC	E.F.	=	\$334	+	(0.00475 X	\$ _____	)
8120	DGSC	E.F.	=	\$334	+	(0.02177 X	\$ _____	)
8125	DGSC	E.F.	=	\$334	+	(0.03975 X	\$ _____	)
8130	DGSC	E.F.	=	\$334	+	(0.12503 X	\$ _____	)
8140	DGSC	E.F.	=	\$334	+	(0.07456 X	\$ _____	)
8145	DGSC	E.F.	=	\$334	+	(0.02462 X	\$ _____	)*
9110	DGSC	E.F.	=	\$334	+	(0.00994 X	\$ _____	)
9150	DGSC	E.F.	=	\$334	+	(0.00880 X	\$ _____	)
9160	DGSC	E.F.	=	\$334	+	(0.00869 X	\$ _____	)
9310	DGSC	E.F.	=	\$357	+	(0.02119 X	\$ _____	)
9320	DGSC	E.F.	=	\$357	+	(0.02554 X	\$ _____	)
9330	DGSC	E.F.	=	\$357	+	(0.03200 X	\$ _____	)
9340	DGSC	E.F.	=	\$357	+	(0.01422 X	\$ _____	)
9350	DGSC	E.F.	=	\$357	+	(0.02505 X	\$ _____	)
9390	DGSC	E.F.	=	\$357	+	(0.04196 X	\$ _____	)
9440	DGSC	E.F.	=	\$334	+	(0.02577 X	\$ _____	)*
9450	DGSC	E.F.	=	\$334	+	(0.02577 X	\$ _____	)*
9905	DGSC	E.F.	=	\$334	+	(0.01034 X	\$ _____	)
9925	DGSC	E.F.	=	\$334	+	(0.07370 X	\$ _____	)
9930	DGSC	E.F.	=	\$334	+	(0.00244 X	\$ _____	)
9999	DGSC	E.F.	=	\$334	+	(0.01036 X	\$ _____	)*

* There were no historical records reflecting closed complaints for this particular FSC. As a result, a "proportion of average contract value" could not be calculated. The proportion for the particular FSG under which this FSC falls was utilized.

FSC	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION X	PROPOSED CONTRACT VALUE	)
1560	DISC	E.F.	=	\$350	+	(0.02300 X	\$ _____	)
1670	DISC	E.F.	=	\$350	+	(0.01749 X	\$ _____	)
1680	DISC	E.F.	=	\$350	+	(0.03759 X	\$ _____	)
2020	DISC	E.F.	=	\$324	+	(0.04826 X	\$ _____	)*
2030	DISC	E.F.	=	\$324	+	(0.12546 X	\$ _____	)
2040	DISC	E.F.	=	\$324	+	(0.04196 X	\$ _____	)
2810	DISC	E.F.	=	\$350	+	(0.03808 X	\$ _____	)*
2835	DISC	E.F.	=	\$350	+	(0.06535 X	\$ _____	)
2840	DISC	E.F.	=	\$350	+	(0.03029 X	\$ _____	)
2845	DISC	E.F.	=	\$350	+	(0.03808 X	\$ _____	)*
2915	DISC	E.F.	=	\$324	+	(0.02835 X	\$ _____	)
2925	DISC	E.F.	=	\$324	+	(0.03924 X	\$ _____	)
2935	DISC	E.F.	=	\$324	+	(0.03067 X	\$ _____	)*
2945	DISC	E.F.	=	\$324	+	(0.03067 X	\$ _____	)*
2950	DISC	E.F.	=	\$324	+	(0.25000 X	\$ _____	)
2995	DISC	E.F.	=	\$324	+	(0.01036 X	\$ _____	)
3110	DISC	E.F.	=	\$326	+	(0.03475 X	\$ _____	)
3120	DISC	E.F.	=	\$326	+	(0.04912 X	\$ _____	)
3130	DISC	E.F.	=	\$326	+	(0.05124 X	\$ _____	)
3940	DISC	E.F.	=	\$324	+	(0.03623 X	\$ _____	)
4010	DISC	E.F.	=	\$319	+	(0.05954 X	\$ _____	)
4020	DISC	E.F.	=	\$319	+	(0.01674 X	\$ _____	)
4030	DISC	E.F.	=	\$319	+	(0.05947 X	\$ _____	)
5305	DISC	E.F.	=	\$319	+	(0.03493 X	\$ _____	)
5306	DISC	E.F.	=	\$319	+	(0.04038 X	\$ _____	)
5307	DISC	E.F.	=	\$319	+	(0.03211 X	\$ _____	)
5310	DISC	E.F.	=	\$319	+	(0.05141 X	\$ _____	)
5315	DISC	E.F.	=	\$319	+	(0.05054 X	\$ _____	)
5320	DISC	E.F.	=	\$319	+	(0.05921 X	\$ _____	)
5325	DISC	E.F.	=	\$319	+	(0.04567 X	\$ _____	)
5330	DISC	E.F.	=	\$319	+	(0.04133 X	\$ _____	)
5335	DISC	E.F.	=	\$319	+	(0.02691 X	\$ _____	)
5340	DISC	E.F.	=	\$319	+	(0.05598 X	\$ _____	)
5355	DISC	E.F.	=	\$319	+	(0.07459 X	\$ _____	)
5360	DISC	E.F.	=	\$319	+	(0.05736 X	\$ _____	)
5365	DISC	E.F.	=	\$319	+	(0.07801 X	\$ _____	)
6145	DISC	E.F.	=	\$310	+	(0.03452 X	\$ _____	)
9505	DISC	E.F.	=	\$350	+	(0.01801 X	\$ _____	)
9510	DISC	E.F.	=	\$350	+	(0.02912 X	\$ _____	)
9515	DISC	E.F.	=	\$350	+	(0.03996 X	\$ _____	)
9520	DISC	E.F.	=	\$350	+	(0.04681 X	\$ _____	)
9525	DISC	E.F.	=	\$350	+	(0.05167 X	\$ _____	)
9530	DISC	E.F.	=	\$350	+	(0.05492 X	\$ _____	)
9535	DISC	E.F.	=	\$350	+	(0.01979 X	\$ _____	)
9540	DISC	E.F.	=	\$350	+	(0.06788 X	\$ _____	)
9545	DISC	E.F.	=	\$350	+	(0.00129 X	\$ _____	)
9610	DISC	E.F.	=	\$324	+	(0.00354 X	\$ _____	)*
9620	DISC	E.F.	=	\$324	+	(0.00354 X	\$ _____	)*
9630	DISC	E.F.	=	\$324	+	(0.00615 X	\$ _____	)
9640	DISC	E.F.	=	\$324	+	(0.01601 X	\$ _____	)
9650	DISC	E.F.	=	\$324	+	(0.00166 X	\$ _____	)
9660	DISC	E.F.	=	\$324	+	(0.00354 X	\$ _____	)*
9670	DISC	E.F.	=	\$324	+	(0.00354 X	\$ _____	)*
9680	DISC	E.F.	=	\$324	+	(0.00354 X	\$ _____	)*

* There were no historical records reflecting closed complaints for this particular FSC. As a result, a "proportion of average contract value" could not be calculated. The proportion for the particular FSG under which this FSC falls was utilized.

FSC	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION X	PROPOSED CONTRACT VALUE	)
7210	DPSC-T	E.F.	=	\$1,171	+	(0.00005 X	\$ _____	)
8305	DPSC-T	E.F.	=	\$1,171	+	(0.00950 X	\$ _____	)
8310	DPSC-T	E.F.	=	\$1,171	+	(0.00413 X	\$ _____	)*
8315	DPSC-T	E.F.	=	\$1,171	+	(0.00455 X	\$ _____	)
8320	DPSC-T	E.F.	=	\$1,171	+	(0.00413 X	\$ _____	)*
8325	DPSC-T	E.F.	=	\$1,171	+	(0.00413 X	\$ _____	)*
8330	DPSC-T	E.F.	=	\$1,171	+	(0.00413 X	\$ _____	)*
8335	DPSC-T	E.F.	=	\$1,171	+	(0.00413 X	\$ _____	)*
8340	DPSC-T	E.F.	=	\$1,171	+	(0.00015 X	\$ _____	)
8345	DPSC-T	E.F.	=	\$1,171	+	(0.11431 X	\$ _____	)
8405	DPSC-T	E.F.	=	\$1,180	+	(0.00307 X	\$ _____	)
8410	DPSC-T	E.F.	=	\$1,180	+	(0.00588 X	\$ _____	)
8415	DPSC-T	E.F.	=	\$877	+	(0.00577 X	\$ _____	)
8420	DPSC-T	E.F.	=	\$1,180	+	(0.00255 X	\$ _____	)
8425	DPSC-T	E.F.	=	\$1,146	+	(0.00565 X	\$ _____	)*
8430	DPSC-T	E.F.	=	\$1,330	+	(0.01039 X	\$ _____	)
8435	DPSC-T	E.F.	=	\$1,330	+	(0.00006 X	\$ _____	)
8440	DPSC-T	E.F.	=	\$1,180	+	(0.00113 X	\$ _____	)
8445	DPSC-T	E.F.	=	\$1,146	+	(0.00548 X	\$ _____	)
8450	DPSC-T	E.F.	=	\$1,146	+	(0.00565 X	\$ _____	)*
8455	DPSC-T	E.F.	=	\$1,180	+	(0.01738 X	\$ _____	)
8460	DPSC-T	E.F.	=	\$1,146	+	(0.00114 X	\$ _____	)
8465	DPSC-T	E.F.	=	\$877	+	(0.00424 X	\$ _____	)
8470	DPSC-T	E.F.	=	\$1,146	+	(0.01174 X	\$ _____	)
8475	DPSC-T	E.F.	=	\$1,146	+	(0.00565 X	\$ _____	)*
9420	DPSC-T	E.F.	=	\$1,171	+	(0.00555 X	\$ _____	)*
9430	DPSC-T	E.F.	=	\$1,171	+	(0.00555 X	\$ _____	)*

* There were no historical records reflecting closed complaints for this particular FSC. As a result, a "proportion of average contract value" could not be calculated. The proportion for the particular FSG under which this FSC falls was utilized.

FSC	CENTER	EVALUATION FACTOR PER COMPLAINT	=	ADMINISTRATIVE COST	+	(PROPORTION X	PROPOSED CONTRACT VALUE)
3740	DPSC-M	E.F.	=	\$414	+	(0.25000 X	\$ _____)
3770	DPSC-M	E.F.	=	\$414	+	(0.19525 X	\$ _____)
4240	DPSC-M	E.F.	=	\$414	+	(0.15741 X	\$ _____)
4610	DPSC-M	E.F.	=	\$414	+	(0.16793 X	\$ _____)
5450	DPSC-M	E.F.	=	\$414	+	(0.15754 X	\$ _____)
6135	DPSC-M	E.F.	=	\$414	+	(0.14516 X	\$ _____)
6230	DPSC-M	E.F.	=	\$414	+	(0.06751 X	\$ _____)
6240	DPSC-M	E.F.	=	\$414	+	(0.25000 X	\$ _____)
6505	DPSC-M	E.F.	=	\$435	+	(0.05096 X	\$ _____)
6508	DPSC-M	E.F.	=	\$409	+	(0.06822 X	\$ _____)
6510	DPSC-M	E.F.	=	\$435	+	(0.05854 X	\$ _____)
6515	DPSC-M	E.F.	=	\$435	+	(0.09821 X	\$ _____)
6520	DPSC-M	E.F.	=	\$390	+	(0.08251 X	\$ _____)
6525	DPSC-M	E.F.	=	\$390	+	(0.07941 X	\$ _____)
6530	DPSC-M	E.F.	=	\$402	+	(0.11372 X	\$ _____)
6532	DPSC-M	E.F.	=	\$366	+	(0.12074 X	\$ _____)
6540	DPSC-M	E.F.	=	\$390	+	(0.10634 X	\$ _____)
6545	DPSC-M	E.F.	=	\$409	+	(0.08253 X	\$ _____)
6550	DPSC-M	E.F.	=	\$435	+	(0.13443 X	\$ _____)
6630	DPSC-M	E.F.	=	\$390	+	(0.08406 X	\$ _____)
6635	DPSC-M	E.F.	=	\$413	+	(0.01662 X	\$ _____)
6640	DPSC-M	E.F.	=	\$435	+	(0.13715 X	\$ _____)
6645	DPSC-M	E.F.	=	\$413	+	(0.22233 X	\$ _____)
6650	DPSC-M	E.F.	=	\$413	+	(0.11275 X	\$ _____)
6665	DPSC-M	E.F.	=	\$413	+	(0.03172 X	\$ _____)
6670	DPSC-M	E.F.	=	\$413	+	(0.19334 X	\$ _____)
6750	DPSC-M	E.F.	=	\$414	+	(0.05107 X	\$ _____)
6810	DPSC-M	E.F.	=	\$414	+	(0.15819 X	\$ _____)
6830	DPSC-M	E.F.	=	\$414	+	(0.06451 X	\$ _____)
6840	DPSC-M	E.F.	=	\$414	+	(0.05519 X	\$ _____)
6850	DPSC-M	E.F.	=	\$414	+	(0.14642 X	\$ _____)
6910	DPSC-M	E.F.	=	\$414	+	(0.21463 X	\$ _____)
7210	DPSC-M	E.F.	=	\$414	+	(0.05438 X	\$ _____)
7350	DPSC-M	E.F.	=	\$414	+	(0.00002 X	\$ _____)
7510	DPSC-M	E.F.	=	\$414	+	(0.09592 X	\$ _____)
7690	DPSC-M	E.F.	=	\$414	+	(0.25000 X	\$ _____)
8040	DPSC-M	E.F.	=	\$414	+	(0.05556 X	\$ _____)
8105	DPSC-M	E.F.	=	\$414	+	(0.06447 X	\$ _____)
8820	DPSC-M	E.F.	=	\$414	+	(0.06898 X	\$ _____)
9410	DPSC-M	E.F.	=	\$414	+	(0.06898 X	\$ _____)

* There were no historical records reflecting closed complaints for this particular FSC. As a result, a "proportion of average contract value" could not be calculated. The proportion for the particular FSG under which this FSC falls was utilized.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE July 1989	3. REPORT TYPE AND DATES COVERED Final	
4. TITLE AND SUBTITLE Administrative and Holding Costs Resulting from Processing Reports of Nonconforming Supplies			5. FUNDING NUMBERS	
6. AUTHOR(S) Maj. John Bray, USA				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) HQ Defense Logistics Agency Operations Research and Economic Analysis Office (DLA-LO) Cameron Station Alexandria, VA 22304-6100			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Defense Logistics Agency Cameron Station Alexandria, VA 22304-6100			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Public Release; Unlimited Distribution			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) A project was initiated to evaluate the cost associated with nonconforming supplies that are attributable to contractor fault. This study examined two elements of the cost of nonconforming items, specifically, the administrative cost and the holding cost. The administrative cost arises from actions normally performed at various supply and staff levels (internal and external to DLA) when a nonconforming item is discovered and a Quality Deficiency Report (QDR) is initiated, processed, investigated and resolved. The holding cost results from the storage and handling of nonconforming items and from the lost opportunity of investment for money "tied up" in these discrepant supplies. The average administrative cost accumulated for a single QDR for a typical DLA item was found to be \$501. The average holding cost per QDR was estimated as 3.55 percent of the average contract value for a typical DLA item. The administrative costs (in dollars) and holding costs (expressed as a proportion of the contract value) were derived for various level of detail, that is, Federal Supply Class, Federal Supply Group and supply center.				
14. SUBJECT TERMS Holding costs, Administrative Costs, Supplies			15. NUMBER OF PAGES 42	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT	