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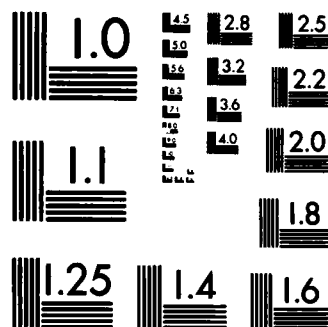
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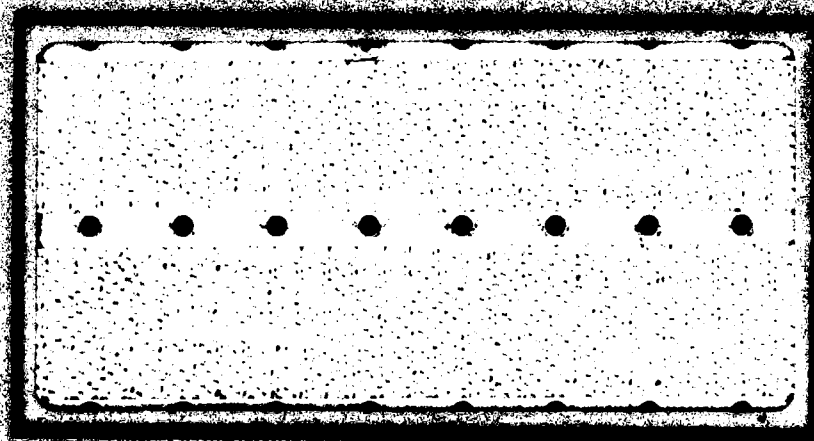
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THE IMPACT OF RATE STABILIZATION
ON THE AIR FORCE INDUSTRIAL FUND DEPOT
MAINTENANCE MANAGEMENT SYSTEM

Kenneth S. Caldwell, Jr., 2Lt, USAF

LSSR 30-82

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In 1976, DOD initiated a policy of rate stabilization within the stock and industrial funds to cope with the problem of inflation. Rates and prices for the services and items consumed by the customers of the fund are established approximately eighteen months prior to the beginning of the fiscal year. The predetermined prices are "stabilized" throughout the remainder of the fiscal year. Although rate stabilization was established to correct a problem, operation under rate stabilization has itself created several key management problems. First, by stabilizing prices so far in advance, the industrial fund managers have a very difficult time measuring cost against price as a benchmark for performance measurement. Thus, rate stabilization impairs the fund managers' ability to control costs. Second, several of the rate stabilization policies have taken away financial authority and flexibility from the fund managers, thus weakening their control over the fund. A comprehensive analysis of the impact of rate stabilization upon the industrial fund was performed by interviewing top level managers in the industrial fund management structure. This thesis analyzes the interview results and recommends changes in the rate stabilization policy which should help the industrial fund operate more efficiently.

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INDUSTRIAL FUND DEPOT MAINTENANCE
MANAGEMENT SYSTEM

A Thesis

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the Requirements for the
Degree of Master of Science in Systems Management

By

Kenneth S. Caldwell, Jr., BSAE
Second Lieutenant, USAF

September 1982

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Second Lieutenant Kenneth S. Caldwell

has been accepted by the undersigned on behalf of the faculty of the School of Systems and Logistics in Partial fulfillment of the requirements for the degree of

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CHAPTER 1

INTRODUCTION

Working capital funds were created by amendment 10 U.S.C. 2208 of the National Security Act of 1947. This amendment authorized the Secretary of Defense to establish working capital funds to finance inventories of needed supplies and to provide working capital for such industrial-type and commercial-type activities as he considered necessary to provide common services within and among the departments and agencies of the Department of Defense (DOD). (11:10; 13:4) The Secretary of Defense established the stock and industrial funds to help managers control their operations more efficiently.

In the mid-1970s, double digit inflation in the U.S. economy created several problems within the stock and industrial funds. Fund managers reacted to inflation by changing prices frequently in order to keep their funds in reasonable financial positions. The continual increasing of the prices by the fund managers made it impossible for the industrial fund customers (SAC, TAC, National Guard, etc.) to carry out budgeted programs and thus impaired military readiness. (11:17)

In fiscal year (FY) 1976, a policy of rate stabilization was initiated within the stock and industrial funds

to cope with the problem of inflation. Rates and prices for the services and items consumed by the customers of the fund were established prior to the beginning of the fiscal year within which these transactions would take place. The pre-determined prices were then frozen or "stabilized" throughout the remainder of that fiscal year.

It appears that the enactment of the rate stabilization policy to reduce the impact of inflation, primarily for the users of the stock fund, has in turn caused additional management problems within the industrial fund.

Background

The Air Force Depot Maintenance Industrial Fund is a revolving fund that, within the limitations of a closed system, simulates commercial activity. In the artificial buyer-seller relationship established under the industrial fund, the Directorate of Material Management (D/MM) is the buyer and purchases maintenance from the seller, the Directorate of Maintenance (D/M). Through several workload negotiations, the D/MM agrees to buy projected amounts of maintenance at a predetermined price. This price can take two forms: an hourly rate which is used for all aircraft, missile, and certain other specialized workload categories whose repair is labor intensive; or an end item rate which is used for engine, exchangeables, and inertial guidance systems. Based upon these negotiations, the D/MM requests funds through the budgeting process. (12:p.1-2-1)

The main conceptual problem with the industrial fund is that it does not simulate a competitive business environment. (2:20) In the business environment, the buyer is free to find the most economical way to accomplish a task, which may involve competitive bidding. In the depot maintenance structure, however, the buyer must purchase maintenance from the five ALCs. There is no competitive bidding among the five ALCs because each has its own unique maintenance responsibilities. (2:19)

The objective of the industrial fund as stated in Department of Defense Directive (DODD) 7410.4 are five fold and are: (1) to provide a more effective means of cost control; (2) to recognize contractual relationships so that management will have adequate incentive for efficiency and economy; (3) to provide managers the financial authority and flexibility to effectively use manpower, materials, and resources; (4) to use the facilities more economically by cross-servicing among military departments; and (5) to support the performance budgeting concept by facilitating budgeting and reporting costs. (13:3)

In FY 1976, DODD 7410.4 initiated a program of rate stabilization, which was established to accomplish four objectives: (1) to stabilize rates within the stock and industrial funds at what the DOD considered realistic rates; (2) to assure that adequate cash existed within the revolving funds; (3) to minimize the effects of inflation in setting

rates for budgeting purposes; and (4) to resolve financial and managerial problems between the funds and the customer's appropriation activity. (11:18)

The DOD initially applied the concept of rate stabilization to the stock fund in FY 1976. The stock funds are used as a means of financing the purchase of consumable materials, holding them for sale, then selling them to consuming activities (customers). Stock funds are usually comprised of low value expense-type items which are used primarily by military units. The stock fund uses revenue generated from sales to DOD customers to purchase additional inventory for future sales. The cost of administering the fund, and salaries are not financed by the fund itself. These costs are funded through the Operating and Maintenance (O&M) Appropriations. Prices within the stock fund are established and stabilized at the beginning of each fiscal year. The catalog prices cannot be changed throughout the year except in case of significant error or a change in the unit of issue. (13:26)

Rate stabilization was also initiated within the industrial fund in FY 1976. Rate stabilization addressed two big problems that the industrial fund had encountered. First, increasing operating and maintenance costs depleted budgets, making it impossible to carry out planned activities, thus impairing our military readiness. Second, increasing inflation factors were causing the industrial fund managers

to frequently change their prices to keep their fund in a reasonable profit/loss situation. Frequent changes in the industrial fund's prices made it difficult for the customers to budget O&M effectively because they did not know what the fund would be charging during the year of execution.

A report submitted to the Committee on Appropriations, U.S. House of Representatives by the Surveys and Investigations (S&I) staff, found that many key DOD managers viewed the stabilization policy as improving financial management, specifically helping the departments to:

. . . (a) meet the problems of continuing inflation on industrial fund costs, (b) overcome the syndrome of frequent, unforeseen changes in fund prices for services, (c) develop more realistic O&M budgets, particularly with respect to depot maintenance, (d) attain greater efficiency and cost savings in fund operations, (e) effect better planning and execution of programs, and (f) assure better interface between the O&M customers and the industrial funds [11:72].

The report also stated that many of the people who spoke favorably of rate stabilization admitted that they could not provide definite proof of what they considered its strengths. (11:62)

Rate stabilization was implemented differently in the stock and industrial funds. The stock fund's prices are set at the beginning of each fiscal year. Since these prices have been determined in conjunction with the latest cost of an item, rate stabilization, while providing benefits to the stock fund users, has had little or no negative impact on the stock fund. (11:17)

Within the industrial fund, however, hourly rates for aircraft, missiles, and other major end items, as well as unit sales prices for engines are established approximately 18 months prior to the fiscal period they will be used (for budgeting purposes) and are frozen throughout the year. These predetermined prices may or may not reflect actual costs within the depots at the time of execution. Factors such as high inflation, direct materials, labor costs, and productivity improvements may cause the final price to differ substantially from the stabilized price. If there is a profit or loss in the depot maintenance industrial fund, due to these fluctuations in cost, then the profit/loss is returned/recovered in the following year's rates.

The S&I report cited that the establishment of rates 18 months in advance obscured the true cost figures. (11:73) The staff also noted that the rate stabilized 18 months in advance did not relate to the actual cost when the work was to be performed.

Under current DOD policy, rate changes are permitted only on an exception basis. These changes require Office of the Secretary of Defense (OSD) approval and may only occur if the customer directs a change in work scope which results in a profit/loss of \$500,000 on engines and \$50,000 on exchangeable end items such as avionics and landing gear. (12:p.6-3)

The S&I staff report to the House also cited three additional problem areas in which the implementation of the

rate stabilization policy was impairing the effective management of the industrial fund. The first concern was the system peculiarities and inflexibilities of rate stabilization. They saw rate stabilization as taking management control from the ALC managers and putting it at a higher level. That higher level (OSD) then dictated inflation factors, activity level recoupment of losses, price changes, and price freezes for long periods of time. They concluded that rate stabilization violated the basic principles of industrial fund operations.

The rate stabilization system as operated is completely inflexible. Rates are not just set for the year, they are locked in concrete; thus creating an atmosphere which inhibits managerial initiative of flexibility [11:74].

Secondly, rate stabilization weakened incentives for good managers.

The fact that an installation manager's success is no longer measured by his operating results is a radical departure from accepted commercial management practice and certainly affects his outlook. Now it is more a question of 'has he operated per estimates,' even though he is aware of weaknesses in the estimates from the beginning and may have requested their adjustment. Even if he makes a profit, he may be directed to raise his prices next year to 'recoup' losses of other installations in the same field of activity. Also, if he attains a good cash position, he may be directed to transfer some portion thereof to help 'bail out' a poorly managed fund [11:74].

The industrial fund operates on a profit/loss basis with its objective being to break even. The difficulty with breaking even as a goal, however, is that it does not serve as a meaningful measure of efficiency. This is particularly

true when costs are related to inflation, work volume, wage rates, etc., while profit is influenced by costs and how well prices are set in a noncompetitive environment. (2:44)

Finally, the staff saw that rate stabilization completely shifted the risk from O&M (customer) to the industrial fund. They concluded that rate stabilization locked in the price, but not the customer workload (which is subject to change anytime), which in turn may affect the cost (which relates less closely to the original price).

[For] price/rate stabilization to be fully effective, [it] requires a degree of accuracy in estimating workload and prices that may or may not be possible in an operation as large, diversified, and complex as DOD's Industrial Fund Activity [11:75].

Statement of the Problem

The policies established to implement the objectives of rate stabilization have created instances where the objectives of the industrial fund are not being met. Specifically, the policies of rate stabilization have made two goals of the industrial fund very hard to achieve. First, by stabilizing prices so far in advance, the industrial fund managers have a very difficult time measuring cost against price as a benchmark for performance measurement. Thus, rate stabilization is impairing the fund manager's ability to control costs. Second, several of the rate stabilization policies have taken financial authority and flexibility away from the fund managers, thus weakening their control over the fund.

Justification

Because of the goal incongruence between rate stabilization and the industrial fund objectives, three specific problems in management control over the fund have resulted. First, actual costs have exceeded estimates. This has happened because inflation factors (official estimates from OMB) for labor and material, which are applied to current costs to establish the next period's prices, have historically been too low. The combination of the 18-month predetermined price leadtime and the OMB inflation guidelines has caused several price discrepancies. The resulting price variance due to the underestimation of inflation or the sudden rise in the cost of direct materials (due to exotic metal or component price increases) must be absorbed by the industrial fund.

Second, some costs have ultimately been lower than the estimates. This has been caused by significant productivity improvements which may be found during the 18-month interval before the estimated prices take effect. Although a conservative forecast of productivity improvements is allowed in forecasting prices, unforeseen new methods which lower the unit cost of an item could allow more maintenance to be accomplished than was appropriated for (planned and budgeted) if a price change request was approved. This is a problem because OSD has generally disapproved requests to lower the stabilized unit price. OSD

contends that the industrial fund can absorb profits or losses in the current year and dissipate them in future years. This approach, when viewed on this macro level, may at first appear logical, but is actually causing management and productivity deficiencies within individual AFLC Air Logistic Centers (ALCs). (4)

An example of current OSD policy which produces this impact is the Expendability-Recoverability-Reparability Category (ERRC) claims. ERRC code changes are specifically excluded from price change criteria at the present time. When an engine goes through the repair cycle, it has many expense items (throw away) that may or may not need to be replaced. When replaced, the item is drawn out of the stock fund inventory and the industrial fund is charged for it. As technology progresses, an engineer may find a repair process for the expense item that would make it more economical to repair it than to replace it. If an item is repaired 95 percent of the time and 5 percent of the time it is replaced, its ERRC code would change from an expense item to an investment (reparable) item. When the item needs to be replaced that 5 percent of the time, the item is drawn out of the stock fund inventory but it is no longer charged to the industrial fund. Since the item is now an "investment" item, it is paid for through Central Procurement (CP) money. If this type of ERRC code change occurs within the engine repair cycle, or a similarly expensive operation, and

if thousands of these engines/items need to be repaired, then the industrial fund will have to absorb the potentially large dollar amounts of profits or losses.

Third, ALCs currently do not know the "should cost" of any repair item. The "should cost" is the number of dollars it should take to repair an item based on standards, such as labor and material standards. Rates stabilized 18 months in advance tend to hide organizational problems. The technology to determine what something should cost is available in the form of computer software, but the Air Force ALCs do not possess the capability at this time. (4) The only cost that the ALCs can determine is actual cost, which includes the actual dollar amount of labor, material, and overhead that went into the repair of an item. Currently, the ALCs can only compare the actual cost versus the sales price. Since the sales price was stabilized up to 18 months prior to the fiscal year, it is just an 18-month guess at the should cost. Between the time the price is set and the period the work is to be performed, many variables can change the actual cost needed to repair an item or render a service. For example, change in work scope or mix by a customer can lead to actual cost differentials, but is extremely hard to quantify. A computer error or an OSD pricing policy change can also impact cost. If the actual cost is greater than the sales price, the organization should be able to determine why there is a difference

in cost and if it is correctable, fix it. Since the should cost is not known, however, managerial or operational inefficiencies may go undetected.

The problems above are significant to management for the financial impact alone. But the most important impact of rate stabilization could be the decrease in the mission readiness of the Air Force. If an ALC were able to lower its price for any reason on an item (while in an overall profit position), and thus enable more maintenance to be accomplished than budgeted, the price change request should be approved by the OSD. Not only would this lowered price give the customers (the using command) more readiness than anticipated, but it would use up any idle capacity that might develop within the ALCs due to unforeseen productivity improvements or changes in work scope. (5:1)

One example of a change in work scope which created both ALC idle capacity and an opportunity for users to receive more maintenance than scheduled occurred in 1979. The FY 1979 sales price for the F-100 engine Core was projected to be \$43,483 which included \$7,537 to perform repairs on the High Pressure Turbine (HPT). In FY 1978, AFLC/LOP decided to manage the HPT as a separate module, effective 1 January 1979. This change in work scope meant that the San Antonio ALC, where the F-100 engines were being repaired, lowered its Core price to \$36,046. Headquarters (HQ) AFLC requested a price change from OSD under the

guidelines established and their request was disapproved. Although the work was done by the same people, the repair of the HPT was in effect paid for twice by the F-100 budget, first through the engine package and second as a separate module. The Core production schedule change resulted in an industrial fund profit in excess of one million dollars in FY 1979. Had the HPT not been paid for twice, more F-100 maintenance could have been accomplished at a time when F-100 engine problems were receiving high level attention. (6:2) Alternatively, the additional money could also have been routed to programs needing additional funds!

Research Objectives

The objective of this research project is to analyze the impact of the rate stabilization policy on the Depot Maintenance Industrial Fund. The intent of this research is to examine the rate stabilization procedures, identify strengths and weaknesses, and recommend possible solutions to make the rate stabilization policy result in more efficient and productive depot maintenance.

Research Questions

The thesis will attempt to answer the following two research questions: (1) Do the goals of rate stabilization conflict with the goals of the industrial fund? (2) Do these goals cause cost and price discrepancies that are inhibiting both the mission readiness of the Air Force and

the maintenance managers from meeting their goals and expectations? These research questions will reveal if the mission readiness could be enhanced by lowering the stabilized prices and releasing budgeted money which could be diverted to more urgent needs. These questions will also focus on the impact of the rate stabilization policy upon management at all levels of depot maintenance to determine whether the policy prevents managers from achieving the overall goals of the Industrial Fund.

Scope

The data obtained for this research will be obtained through interviews to identify concrete examples that would highlight the effectiveness of the rate stabilization policy. The study will be limited to the Air Force, the Industrial Fund, and Depot Maintenance.

Organization of the Study

This paper contains three additional chapters. The second chapter reviews the specific methodology for accomplishing the research. The third chapter contains the interviews, data, examples, and analysis relevant to the research questions. The fourth and final chapter presents the paper's findings and concluding recommendations.

CHAPTER 2

METHODOLOGY

This chapter describes the universe, population, and sample from which the data were collected for this research, the techniques employed in collecting the data, the questions that generated the data, the analysis of that data, and the research assumptions and limitations associated with this project.

Description of the Universe, Population and Sample

The universe for this research project consisted of all those personnel associated with rate stabilization. This included those who establish and monitor the policy at OSD, those who help direct and interpret the policy at AFLC Headquarters (HQ AFLC), and those who are affected by the policy at the ALCs (both the buyer and the seller).

The primary population of interest in this study were the high level managers responsible for directing the maintenance programs at the ALC level. Since the ALC level is the level at which poor management and ambivalent policies can cause large sums of tax dollars to be wasted, it was at the ALC level where this thesis sought to discover whether rate stabilization was inhibiting industrial fund operations. The secondary population consisted of HQ AFLC

and OSD. The policies created at these levels significantly affect what ALC managers can control at their level.

The sample consisted of 26 members of the primary and secondary population. The sample included representatives of the Directorates of Maintenance (D/M) from all five ALCs, and from HQ AFLC. The sample also included representatives of the Directorate of Material Management (D/MM) for the ALC level, and from HQ AFLC level. Also included in the sample was the OSD staff member responsible for upgrading and monitoring the rate stabilization policy. In the sampling process, the prime objective was to obtain responses that would be representative of the sampled population. (10:157) Since all ALCs do not perform the same workload or worktype, all five ALCs were sampled. Excluding one ALC might overlook a particular problem experienced only in that ALC.

Data Collection

Data collection was performed in two phases. The first phase involved a trip to the Sacramento ALC and the Oklahoma ALC to identify the potential problem areas. After the first phase, the gathered data were reviewed and the problem areas were better defined. The second phase involved phone interviews to the three remaining ALCs and OSD.

Phase I. A week long trip was taken to Sacramento and Oklahoma City to accomplish two objectives: first, to personally interview representatives from both D/M and D/MM and secondly, to experience the depot maintenance structure firsthand. It was felt that a personal ALC visit for part of the thesis data collection effort would be best because it would allow a glimpse of the personnel, the procedures, and the material used, and would provide an excellent background for a rate stabilization policy review.

The Sacramento and Oklahoma City ALCs were interviewed because their management and diverse workloads were generally considered representative of the five ALCs (4). Both Sacramento and Oklahoma City are known throughout the Air Force Logistics Command for their efficient industrial fund operations (4). By visiting these ALCs, rate stabilization policies inhibiting or contributing to good management could be more easily identified. The workload type and the size differs between the two ALCs, however. Sacramento, the smaller of the two, handles exchangeable equipment (such as avionics equipment) and Periodic Depot Maintenance (PDM) for several types of aircraft in the Air Force inventory. Oklahoma City is one of the Air Force's two large depot engine facilities (the other is in San Antonio) and also handles aircraft PDM.

Phase I also included the personal interviewing of several members of the financial analysis section at

HQ AFLC at Wright-Patterson Air Force Base, Ohio. Personnel interviewed at HQ AFLC represented both the HQ AFLC customer program monitor and the HQ AFLC industrial fund monitor.

Phase II. After the analysis of the Phase I data, the problem was known with more certainty. Phase II involved even more clearly defining the problem areas within the ALCs by collecting more data via the telephone. Personnel representing the remaining ALCs--Ogden, San Antonio, and Warner Robbins--were interviewed. These interviews were conducted using the same questions and by discussing the same subject areas asked at the on-site ALC interviews.

Phase II also involved interviews with members of OSD who were familiar with and responsible for the rate stabilization policy. These interviews were also conducted by telephone.

Interview Questions

A structured interview format was used to ensure comparability of the data. Since the D/M, the D/MM, and OSD have different responsibilities and represent different entities, three different sets of questions were used in the interviews. The intent of the questions was to highlight management problems and benefits associated with the policies of rate stabilization. The questions were both specific and open-ended in nature to pinpoint problems and to point out differing management philosophies.

Directorate of Maintenance (D/M). The following questions were asked of the D/M (the seller).

1. What are your opinions of the rate stabilization program? (This question frequently included both pro and con responses. It was used to draw out positive opinions as well as negative ones.)

2. What specific problem areas have the rate stabilization policies created in managing your organization?

3. When price and cost no longer relate (because the price was stabilized 18 months ago), how do you accurately measure performance? What do you use as a benchmark?

4. It has been said that under the industrial fund rate stabilization policy, price and cost are two different things and, more often than not, do not relate. Should the Director of Maintenance in the field be concerned with prices, profits and losses, or should he be only concerned with controlling costs?

5. Do you think that a stabilized rate tends to hide organizational problems? If the actual cost is greater than the sales price, can your organization always determine why and rectify it?

6. Under the rate stabilization policy where prices are frozen, have you experienced instances of idle capacity developing within your organization as a result of customer directed changes in work scope and productivity improvements?

7. If you could change any rate stabilization policy/policies in order to make your organization more efficient and effective, what would these policy changes be?

Directorate of Material Management (D/MM). Rate stabilization was initiated to benefit the customers of the industrial fund. The research questions directed to the D/MMs sought responses that would make the stabilization policy more beneficial to the customer as well as more effective for the industrial fund.

1. What are your opinions of the rate stabilization policy?

2. If the D/M lowered its price, what would the effect be on your operation?

3. If the D/M raised its price, what would the effect be on your operation?

4. What specific problem areas have the rate stabilization policies created in managing your organization?

5. If you could change any rate stabilization policy/policies in order to make your organization more efficient and effective, what would these policy changes be?

Office of the Secretary of Defense (OSD). After personnel from the ALCs had been interviewed, the responses were reviewed and the OSD questions were formulated.

1. What was the original intent behind the rate stabilization policy?

2. Can you see any drawbacks from rate stabilization as it applies to the industrial fund?

3. Why have price change requests, that have met your criteria for acceptance, generally been disapproved? How might these criteria be changed? Should they be? Why set up criteria if you turn down requests?

4. Why would you turn down a price change request to lower the price of an item? Would a lower price mean that more maintenance could be accomplished than was budgeted, thus improving the country's readiness for the current year? If no depot capacity change is involved, could the funds be used to meet others' priority budget requirements?

5. Several DOD managers have stated that they do not want the D/M in the field to be concerned with both profit/loss and price versus cost. They just want the D/Ms to be concerned with keeping the costs as low as possible. Is this a realistic approach to performance measurement for organizations?

6. A S&I report to the House in 1978 cited three problem areas with the rate stabilization policy:

a. Rate stabilization has taken some management control from the ALC managers and put it at a higher level. Is this consistent with Secretary Weinberger's stated policy of decentralization?

b. Rate stabilization has weakened incentives for good managers. A manager is now judged on how well he

operated per estimates. Does this problem area still exist today?

c. Rate stabilization completely shifted the risk from the customer to the industrial fund. Does this problem area still exist today?

7. Why must dissipation of the ALC profits/losses occur at the HQ AFLC level?

8. Why are ERRC code changes not valid reasons for price change requests? Why has OSD disapproved such requests?

9. Why are computer errors or similar type errors not valid reasons for price change requests?

Data Analysis

The data collected in the form of interview questions were analyzed in two phases using content analysis. "Content analysis is a method of studying and analyzing communications in a systematic, objective, and qualitative manner to measure variables [8:525]." It was used to evaluate the data because most of the interview questions were open-ended.

The basic unit for analysis of the interview responses was theme. "The theme, a useful though difficult unit to analyze, is often a sentence or a proposition about something. Themes are combined into sets of themes [8:528]." Through an analysis of the response to a particular question, its theme can be determined and compared to similar themes within the data survey. The significance of a theme was

determined by its reoccurrence among several interviewees. Themes only occurring once (within only one of the five ALCs) could be deemed local to that ALC and therefore not strongly related to the implementation of a policy. An exception to this rule would be if the ALC involved had a work type different from the other ALCs and the problem resulted because of that work type. Themes occurring among three or more ALCs were considered very closely linked to the implementation of a policy.

Content analysis was used as a screening mechanism and its net effect was to make the data analysis effort more objective. (8:525)

Phase I. The data analysis of the first phase included responses from both the D/M and the D/MM interview questions. The interview responses from the D/Ms of the five ALCs and HQ AFLC were evaluated. Similar themes occurring among the ALCs were noted as well as those themes that were ALC particular (careful attention was given to each theme because although all five ALCs are in the maintenance business, each ALC has its own work type which might create unique problems). The themes of the D/M were then compared to the themes generated as a result of the D/MM interview responses.

The themes resulting from the D/M and D/MM evaluation were compared to see if some common link existed between the two themes, and if the implementation of a

particular rate stabilization policy caused the problem or benefit.

Phase II. After Phase I was completed and the problems and the beneficial areas of rate stabilization were identified (through the use of content analysis), OSD's responses were reviewed. Since OSD was asked about their initial intent of these policies, Phase II analyzed and evaluated OSD's responses to see if OSD's initial intent corresponded with reality after OSD's policy was implemented and whether current OSD perception corresponded to current perception in the field.

CHAPTER 3

DATA SUMMARY AND ANALYSIS

This chapter discusses the data collected and the analysis of that data. This chapter contains a discussion of the interview questions and an analysis of the D/M, D/MM and OSD responses to the interview questions. Findings and recommendations based upon these analyses are contained in Chapter 4.

Interview Procedures

As noted in Chapter 2, interviews were conducted both by the telephone and by personal interview. For in-depth, subjective questions requiring probing, a personal interview is preferable (10:209). However, due to the wide geographic dispersion of the ALCs and other interviewees, personal interviews were not always possible.

When analyzing the data, it was assumed that both the telephone interviews and the personal interviews yielded the same type of data. While this is true in most cases, some studies have suggested that, on questions of attitudes, the presence of a personal interviewer ". . . may interject a modifying element in the interview situation [10:212]." However, for this research, the "interjection of a modifying element," because of the high organizational level of the

interviewees, was not considered a serious problem. Nevertheless, some bias may have been included and should be considered in evaluating subsequent results.

The personnel interviewed consisted of high level managers within the industrial fund system. Since those interviewed were in highly political organizational positions, it was felt that keeping their remarks anonymous would yield honest, candid responses. Without such a promise to the interviewees, which would let them speak more freely, it was felt that the organizational problems rate stabilization had created would be much more difficult to ascertain.

The D/M and D/MM personnel at both the ALC and HQ AFLC, as well as OSD, were very helpful and cooperative. Many of the interviewees were prepared with facts and figures and were also helpful in recommending other managers who might be useful in the data collection effort. On the average, the interviews lasted approximately 60 minutes (some taking up to three hours), yet all of the interviewees were willing to spend the time needed to answer the questions.

Directorate of Maintenance (D/M) Responses

Seventeen D/Ms were interviewed. They comprised the largest sample of those interviewed, because the rate stabilization policies have appeared to effected the D/Ms, both at the ALC level and at the HQ AFLC level to the largest degree.

Question #1. This question was an introductory question asked of the directorate of maintenance personnel in the field and at HQ AFLC. Frequently, the responses to this open-ended question included both pro and con views of the rate stabilization program.

QUESTION #1: WHAT ARE YOUR OPINIONS OF THE RATE STABILIZATION PROGRAM?

In almost every interview situation, the first topic of discussion was the perceived benefit to the customers. All of the D/M personnel interviewed said that having a rate stabilized 18 months in advance and then frozen throughout the fiscal year certainly made the budgeting process easier for the customer. This type of initial response was of no surprise because the policy was intended to benefit the customers.

The main topic areas generated by this question were: (1) the prices are set too far in advance; (2) the inflation guidance was off; and (3) productivity improvements could not be incorporated into the prices. All three of these areas are interrelated and originate from the prices being set too far in advance.

All of the D/Ms indicated that it was nearly impossible to forecast inflation factors 18 months in advance. Some components such as tired iron in old engines inflate much more rapidly than the prescribed inflation guidance, while other components, such as electronic parts, actually have been experiencing negative inflation (decreasing

prices). Many recommended that different inflation rates be used for different materials, citing that it is very easy to predict iron and electronic inflation when you have several years of historical trends as a data base.

Since the prices are set so far in advance, managers also complained that they could not pass on productivity improvements (which would reduce repair cost) to the customers. Four out of the five ALCs felt that more maintenance could be accomplished if managers had the flexibility to lower the rates. Managers viewed this inflexibility in the system as a "demotivator" because if the price could be lowered due to a productivity improvement, management could show the workers that more items could be reworked for the Air Force. This, in turn, would give the workers a sense of "contribution" to the work effort and management the flexibility to lower prices.

Question #2. After establishing general opinions of the rate stabilization program, specific problem areas were sought. Again, this question was fairly open-ended and invoked a variety of responses.

QUESTION #2: WHAT SPECIFIC PROBLEM AREAS HAVE THE RATE STABILIZATION POLICIES CREATED IN MANAGING YOUR ORGANIZATION?

One of the main problem areas highlighted by the interviews was a lack of incentive to improve on the part of management and the work force because they know it would accomplish little. A question the D/Ms often asked of me

was: "If one cannot reduce the price because of a rigid policy, then why should one look for ways to reduce it?" Examples of this attitude were found at three of the five ALCs. One particular ALC had submitted 200 rate decrease requests in one year and was turned down on all of them. They, as have other ALCs, stopped submitting price change requests because they say it was not worth the trouble to prepare several complex documents for each change and be turned down. It seems, under the present operational environment, the ALCs would rather utilize the manpower elsewhere.

When gathering research data, it was hoped that many concrete examples of price change requests that met OSD's criteria would be found. It was discovered, however, that most managers at the ALC level had given up even looking for ways to change the price or rate once it was stabilized. It should be noted that the failure to find examples of price change requests in the field (because of a lack of submission by ALC personnel) should be an alarming example of the demotivational aspects of the rate stabilization policy.

Question #3. The first two questions focused on management difficulties with the enactment of the rate stabilization policy. Question 3 focused on the problem of relating actual cost incurred during the work period to the stabilized price set 18 months prior to the work period.

QUESTION #3: WHEN PRICE AND COST NO LONGER RELATE
(BECAUSE THE PRICE WAS STABILIZED 18 MONTHS AGO),
HOW DO YOU ACCURATELY MEASURE PERFORMANCE? WHAT DO
YOU USE AS A BENCHMARK?

In the ALCs, the performance measurement system still consists of comparing actual cost versus the stabilized sales price. The resulting variance called profit or loss is looked upon as the ALC's efficiency. The following example of the profit/loss perception felt in all five ALCs illustrates this point. If an ALC is programmed to lose \$10 million dollars and they only lose \$5 million (resulting in a net profit of \$5 million), the ALC considers this a successful year, even though they did not achieve the original goal of \$10 million. By the same token, if an ALC is programmed to make a \$10 million profit and make only \$5 million (resulting in a net loss of \$5 million), the perception within the ALC is that they made \$5 million profit although they fell short of their \$10 million goal. The ALCs mistakenly consider profit to be a measure of efficiency as it generally is in our society; however, in the case of the ALCs, profit does not measure efficiency very well. This is caused because the rates are established so far in advance, and so many factors such as inflation, labor and material cost can change rapidly, a comparison between price and cost can be meaningless at the time of workload execution.

Three out of the five ALCs mentioned they have been working on developing a should cost system within the ALC

to use as a benchmark for performance measurement purposes. This would involve looking at the separate Resource Control Centers (RCC) within the ALCs. Certain factors are beyond the RCC manager's responsibility and when one looks at the actual cost versus the sales price, one looks at all the factors that make up that price including several factors that he is not responsible for (changes in overhead costs, utilities, etc). He should be responsible for direct labor and direct materials and to some extent indirect labor and materials. Several managers were trying to develop computer methods to determine this RCC "should cost" and to then compare this cost to the actual cost incurred in the RCC. The ALCs do not, at this time, possess the capability of determining the RCC "should cost," so unfortunately most performance measurement at the ALC level consists of measuring actual cost against sales price.

Another problem stated by all the ALC managers interviewed was that they had no control over customer directed changes in work scope or higher level (HQ AFLC, OSD) policy changes. Such changes, if made between the period where the rates were stabilized and the work was to be performed (which was when most of the changes occurred), resulted in a distortion of the price and made the variance between price and cost very hard to reconcile. For example, if JP-4 increased in price from \$0.40 to \$1.40, then the resulting loss (because the \$0.40 price was used in establishing the

stabilized price) would be easily traceable. But if a customer changes work scope or workmix, then the resulting profit or loss is not as easily reconcilable, thus making the profit or loss a meaningless performance indicator.

Question #4. Throughout the research process, several comments by those interviewed initially, were absorbed and used as discussion points. Question 4 was created as the result of OSD philosophy communicated to several members in the field. It was quite apparent that OSD and the D/M in the field did not view profits and losses with equal importance.

QUESTION #4: IT HAS BEEN SAID THAT, UNDER THE INDUSTRIAL FUND RATE STABILIZATION POLICY, PRICE AND COST ARE TWO DIFFERENT THINGS AND MORE OFTEN THAN NOT, DO NOT RELATE. SHOULD THE DIRECTOR OF MAINTENANCE IN THE FIELD BE CONCERNED WITH PRICES, PROFITS AND LOSSES, OR SHOULD HE BE ONLY CONCERNED WITH CONTROLLING COSTS?

The D/Ms from all five of the ALCs felt that cost is the basis for price and that stabilized price determines the D/MM budget. The difference between the cost and the price equals profit or loss, and that is what the D/Ms are judged by. The D/Ms from all five ALCs said they spent most of their time explaining their profits and losses because they felt that HQ AFLC was judging them on how well their costs relate to price.

The D/Ms also stated that one of the reasons for putting depot maintenance in the industrial fund was to create a business like atmosphere and have a profit/loss

situation like any business. The original intent of the industrial fund was to operate on a break even basis. Rate stabilization has taken away the "break even incentive" because it is no longer meaningful (price and cost differ greatly during the work period frequently creating a profit/loss posture).

It was very apparent that there was no clear answer to question 4. One could say that because of the way rates are built, the ALC can only manage to costs, since price no longer relates to cost. Or one could argue with equal effectiveness that price is your benchmark and the ALCs have to compare price and cost as a measure of efficiency, because that is how they are judged by higher headquarters. The potential answer to this conflict will be addressed in Chapter 4.

Question #5. Thus far, the D/Ms in the ALCs had been asked about problems rate stabilization had created in managing the ALCs. Question 5 was more subtle, asking about a problem area not recognized by all fund managers, problems hidden by a lack of costing and pricing data.

QUESTION #5: DO YOU THINK THAT A STABILIZED RATE TENDS TO HIDE ORGANIZATIONAL PROBLEMS? IF THE ACTUAL COST IS GREATER THAN THE SALES PRICE, CAN YOUR ORGANIZATION ALWAYS DETERMINE WHY AND RECTIFY IT?

The general answer in four out of the five ALCs was, "no we (the D/Ms) can't always determine why the cost is greater or less than the price." They explained that this discrepancy was caused by the way final rate and prices are

built. First, the rates and prices are estimated at the ALC level. Second, the rates and prices are sent to HQ AFLC and modified by the headquarters criteria. Third, the ALC modified rates and prices are forwarded to OSD and further modified before they are submitted to the budget. Finally, before the fiscal year begins, the customer may direct a change in work scope and workmix, or OSD may initiate a policy change which indirectly affects the way the ALC handles cost. By the time the fiscal period begins, the original rates and prices set in the ALC, because of several modifications, may bear little resemblance to those set originally. These factors could all make it very difficult to explain differences between price and cost. So if an organization cannot always identify the cause of a profit or loss, then it is very hard to determine if that organization is running efficiently. The D/Ms in the field felt that rate stabilization has made it very hard to always track cost changes and therefore explain excess profit or excessive loss.

Question #6. An important issue this thesis addresses is whether the mission readiness of our country could be improved if some of rate stabilizations policies were changed. If these policy changes allowed the prices to be lowered due to productivity improvements and standard revisions, then more appropriated funds could be diverted into areas which would repair more items than originally

budgeted for and improve our readiness posture. But, in order to have more maintenance accomplished than was budgeted for, idle capacity would have to be present in the ALCs.

QUESTION #6: UNDER THE RATE STABILIZATION POLICY WHERE PRICES ARE FROZEN, HAVE YOU EXPERIENCED INSTANCES OF IDLE CAPACITY DEVELOPING WITHIN YOUR ORGANIZATION AS A RESULT OF CUSTOMER DIRECTED CHANGES IN WORK SCOPE AND PRODUCTIVITY IMPROVEMENTS?

All five ALC D/M personnel indicated that within the past few years, although not a regular occurrence, idle capacity had developed within their ALCs. This idle capacity was generated in two forms: manpower and workload. They cited that productivity improvements and changes in workmix or workload dropout as the main causes of idle capacity.

The potential for idle capacity, although not normal, does exist. Improvement of the mission readiness because of the reduction of stabilized prices would most likely occur in the engine and exchangeable areas. These repair processes, unlike aircraft PDM, do not occupy large spaces within the ALCs for large periods of time. If more funds did become available because of a decrease in price, it would be much easier to add more equipment into the exchangeable and engine repair cycles, for these processes are the most likely to develop idle capacity.

Question #7. The final question asked the D/Ms was an open-ended question which led to most of this study's concluding recommendations.

QUESTION #7: IF YOU COULD CHANGE ANY RATE STABILIZATION POLICY/POLICIES IN ORDER TO MAKE YOUR ORGANIZATION MORE EFFICIENT AND EFFECTIVE, WHAT WOULD THESE POLICY CHANGES BE?

All five ALCs mentioned several policy changes that would help them manage more effectively. ALC managers felt that seven policy changes would help their organizations operate more effectively: (1) management should be given more flexibility to change prices; (2) each ALC should dissipate its own profit/loss; (3) rate stabilization should affect both sides (D/M and D/MM) equally; (4) more detailed inflationary guidance should be used; (5) OSD should allow a modification price for ERRC code changes; (6) OSD should allow a modification in price because of errors; and (7) the ALCs should use history and inflation to set prices instead of material and labor standards.

Managers from all five ALCs felt that they were not given enough flexibility as managers. They felt that the price change criteria were too restrictive and did not give the senior managers running the ALCs any latitude to make reasonable rate changes. They also did not consider stabilized rates very business-like because they destroyed the profit/loss motivation.

Managers from all five ALCs also felt very strongly that each ALC should dissipate its own profits and losses. The way the system is set up now, the net profit and loss from each ALC is added up at the HQ AFLC level. If, after adding up the five ALCs' profits and losses, there is an

overall net profit or loss (as is usually the case), the following year each ALC will be instructed to subtract or add a standard command wide profit or loss dissipation or recovery factor to their stabilized rates. The ALC senior managers felt that this was a disincentive to good management, since each ALC was not responsible for its own profit or loss. They felt that if they were managing efficiently and breaking even, why should they be penalized by dissipating the profit or loss of another ALC who was not managing efficiently!

Managers from all five ALCs felt that rate stabilization should affect both sides (D/M and D/MM) equally. They felt that if a policy is too one way, then the system of balance and control breaks down. And if the D/Ms cannot change their prices then the customer might not be as concerned with the ALCs controlling prices as they were before rate stabilization. They also felt that customer directed changes in work scope should lead to the customer receiving an increase in price because the original rates were established under different workload criteria.

All five ALCs agreed that better inflation guidance had to be provided. As discussed earlier, different components inflate at different rates, so the ALC managers felt that a system of inflation by categories should be established making price prediction more accurate.

Also, as discussed in an earlier section, managers from all five ALCs felt that ERRRC code changes should be a valid reason for price modification (ERRRC code changes are not currently allowed under OSD price change guidance), especially if the ERRRC code change would lower the price of an item.

All five ALCs thought that price changes should be allowed for computer or similar type errors used in setting a stabilized price. There have been several examples of pricing errors that management has "had to live with," sometimes creating large profits or losses. Senior managers felt that not having the price relate to cost due to errors (which are correctable) was poor fiscal management.

Three out of the five ALCs interviewed felt a more accurate way of setting those prices relying on material costs was to use history and inflation (assuming the guidance is accurate) instead of standards. They recognized that there had been a problem with the material standards which most ALCs have not been able to overcome since 1969. They stated that history may not be perfect, but at best history reflected the way the ALCs were buying materials and if that was the way they were buying materials, then that was certainly a better basis for building prices. They felt that history would reflect actual cost more closely than the standards, stating that there were just too many standards

and not enough personnel to review all of the standards and keep them up to date.

Within each ALC there are thousands of labor and material standards which need periodic review and revision. Standards are currently set and reviewed by a small task force, who normally only have enough time to review the standards with the biggest variances. The area of standards revision has been recognized by fund managers as a problem. (2:10) The failure to adequately correct this problem has led to large profits and losses within the ALCs. This problem coupled with several other policies of rate stabilization have created very large profits and losses which have been very hard to reconcile.

Directorate of Material Management
(D/MM) Responses

Nine D/MMs from both the ALC and HQ AFLC level were interviewed. Not many D/MM personnel were well versed on the subject of rate stabilization, but those interviewed proved knowledgeable about both the D/M's side of the problem as well as their own. It was apparent that since rate stabilization did not adversely effect their organization, many D/MMs did not know what it was.

Question #1. This question was one of the same ones the D/M was asked. It was used to introduce the topic of rate stabilization and to get their ideas flowing on the subject.

QUESTION #1: WHAT ARE YOUR OPINIONS OF THE RATE STABILIZATION POLICY?

All of the D/MMs saw rate stabilization as making the budgeting process easier for them. They saw rate stabilization as helping those organizations with small appropriated funds such as the National Guard, NASA, the Reserve, and the Forestry Service.

Several of those interviewed thought the policies of rate stabilization were too restrictive on the D/M and several D/MMs did not like working with the false price rate stabilization had created. They did comment, however, that the policy has made it much easier for their budgeting mechanisms.

A view that was very surprising to hear was about the profit/loss situation in the ALCs. Since the industrial funds goal is to "break even," D/MMs from two of the five ALCs viewed profit as representing money that they spent from which they gained nothing.

Question #2 and #3. With the D/MMs now familiar with the rate stabilization policies, Questions 2 and 3 sought problems that would result from a more flexible D/M management policy.

QUESTION #2: IF THE D/M LOWERED ITS PRICE, WHAT WOULD THE EFFECT BE ON YOUR OPERATION?

The general response was that any price changes would mean that their organizations would not know how much money was required to accomplish the programmed maintenance

and would make managing the activities difficult. But after some discussion (including one manager who said he had not seen prices lowered in 14 years), all the managers said that a lowered price meant money would be taken from him by HQ AFLC and rerouted to another activity which was short on funds. Some managers said they had some flexibility to move funds around among their own RCCs but this capability was limited.

Finally, the general consensus was that if a price was lowered, the D/MMs would have excess money, usually becoming available at the end of the year. If this excess money was not spent or committed before the end of the fiscal year, then the D/MMs would not receive the same funding level next year. So most of the D/MMs would not want to be bothered with a change to a lower a price.

QUESTION #3: IF THE D/M RAISED ITS PRICE, WHAT WOULD THE EFFECT BE ON YOUR OPERATION?

The main objection to raising the prices from all the ALCs was that it would take more money to accomplish the same workload objectives. The D/MMs thought that the requirement for more money would lead back to the problems encountered before rate stabilization. Beyond this obvious fact, many D/MMs were sympathetic with the D/Ms realizing there were several instances which they thought the D/M should be allowed to raise the price (computer errors for example).

Question #4. Rate stabilization was initiated to benefit the customer, but it was uncertain if the implementation of the policy was just hurting the D/M or the D/MM also. This was a question also asked of the D/M.

QUESTION #4: WHAT SPECIFIC PROBLEM AREAS HAVE THE RATE STABILIZATION CREATED IN MANAGING YOUR ORGANIZATION?

In 1981, the D/MMs were funded at the 100 percent level for the first time. Since the prices were stabilized (and could not go up), many D/MMs found that money was being wasted on unimportant items. They thought that by the prices being stabilized that the ALCs may not be as cost effective as they had been in the past because the D/MMs were not putting pressure on the ALCs to keep costs down and manage properly. All the D/MM managers thought that they were getting more maintenance for the money from stabilized prices (since the D/MM is protected from price increases due to inflation), so they thought that a better funding level would be 90 percent because managers make wiser decisions when constrained by resources.

In summary, rate stabilization has caused the D/MM to look less for economies, because from the D/MM perspective, so much workload has to be accomplished regardless of the cost.

Question #5. The final question to the D/MMs was asked of the D/Ms also. It was not expected that many policy changes would benefit the D/MMs but their remarks

were interesting.

QUESTION #5: IF YOU COULD CHANGE ANY RATE STABILIZATION POLICY/POLICIES IN ORDER TO MAKE YOUR ORGANIZATION MORE EFFICIENT AND EFFECTIVE, WHAT WOULD THESE POLICY CHANGES BE?

The D/MMs could think of no policy changes that would make their jobs more efficient. However, they did cite ERRC code changes as an allowable reason for changing price (either up or down). D/MMs from three out of the five ALCs thought that the current price charged them should reflect actual cost and if the D/M wanted to lower the price and put out more for less, they ought to be able to do it.

One D/MM suggested that the D/M get a cost of living raise on its prices once during the fiscal year and if the prices were changed then, the problems created for the D/MM would be less severe. Several managers said they would not mind if prices were raised with justification. They realize costs are increasing due to older equipment and they do not think it is equitable for the D/M to suffer all the losses.

Office of the Secretary of Defense
(OSD) Response

The OSD manager responsible for administering the rate stabilization policy gave the DOD version of the policy. This individual was very knowledgeable about the department's policy and since it is at the OSD level at which decisions are made determining rate stabilization's future and changes

in the operation of the industrial fund, the interviewee went to great lengths to completely answer all the questions.

Question #1. When researching the rate stabilization policy, there was very little literature available as to the original intent of the policy as implemented in 1976.

Question 1 sought to bring out the reasons for the initiation of the policy.

QUESTION #1: WHAT WAS THE ORIGINAL INTENT BEHIND THE RATE STABILIZATION POLICY?

OSD's response was two-fold. First, the policy was initiated to stabilize the price between the customer and the industrial fund. Second, rate stabilization was initiated to stabilize the program load for both the customer and the industrial fund. Prior to rate stabilization, the industrial fund was financed via a cost reimbursable basis. The workload and capital for accomplishing that workload would be estimated and the customer would be financed by appropriations. The customer would then reimburse the fund for the work performed. OSD saw a problem with this financial arrangement. In the year of execution, the costs of repairing items would go up causing the industrial fund to raise its prices to keep in a zero profit position. Since the customer had a fixed appropriate for the year, an escalating cost meant that he could get less work done than was originally estimated. The reduction of customer generated workload at the ALC level meant rising costs because of the development of idle capacity at the ALCs. OSD contended

that a spiral developed. Rising costs at the ALC due to excess capacity caused a rise in the price to the customer, which, in turn, led to less budget money available and therefore less customer generated workload to the ALC, which lead to excess capacity, etc. In order to stop the spiral, OSD initiated rate stabilization which stabilized the workload and the capital required for both the customer and industrial fund. OSD admitted that the real beneficiary of the policy was the customer because a stabilized rate simplifies his budgeting process.

Question #2. The second question was asked to highlight any problem areas the OSD has discovered since the initiation of rate stabilization.

QUESTION #2: CAN YOU SEE ANY DRAWBACKS FROM RATE STABILIZATION AS IT APPLIED TO THE AIR FORCE INDUSTRIAL FUND?

OSD's first response was that they thought the policy did not go far enough originally. Rates now are stabilized in two forms: an hourly rate (used for aircraft type work, where the exact number of repair hours is unknown for each aircraft) and an end item rate (used for engine type work where the cost to repair each item is very similar). OSD thought that every item should be worked on a stabilized unit price, which would simplify budgeting even further for the customer.

OSD saw the main drawback from rate stabilization policy as creating larger profits and losses within the

fund. Prior to rate stabilization, the ALCs would raise and lower their prices to break even, so at the end of the year, the fund was usually in a zero profit position. With the rates and prices stabilized throughout the fiscal year, there was a possibility of large profits or losses within the fund, depending on how well the predetermined prices related to the cost at the time of work execution. OSD said that the resulting profits and losses which have been larger than in the past had caused the ALC managers to worry because the fund managers felt they were being judged in relation to their profits and losses. OSD does not view profit and loss as measurement of performance, but rather a by-product of industrial fund operations.

Question #3. During the data gathering phase of the thesis, several examples of price change requests that had met OSD's approval criteria had been examined. Question 3 was asked to determine why almost all requests meeting the criteria were turned down.

QUESTION #3: WHY HAVE PRICE CHANGE REQUESTS, THAT HAVE MET YOUR CRITERIA FOR ACCEPTANCE, GENERALLY BEEN DISAPPROVED? HOW MIGHT THESE CRITERIA BE CHANGED? SHOULD THEY BE? WHY SET UP CRITERIA IF YOU TURN DOWN REQUESTS?

OSD responded by stating that they had not seen a request that had met the criteria. When they were informed that several price change requests that had met the criteria had passed through their office from HQ AFLC and had been disapproved, OSD stated that they did not recall any such

price change requests and they would check into them. The OSD philosophy is that the industrial fund should be able to absorb short term losses and gains, and price change requests would start the fund spiral again. OSD said that the customer should not have to pay for bad estimates and price changes would disrupt the customer programs.

Question #4. A follow-on question to Question 3, this question sought the answer to the readiness issue.

QUESTION #4: WHY WOULD YOU TURN DOWN A PRICE CHANGE REQUEST TO LOWER THE PRICE OF AN ITEM? WOULD A LOWER PRICE MEAN MORE MAINTENANCE COULD BE ACCOMPLISHED THAN WAS BUDGETED, THUS IMPROVING THE COUNTRY'S READINESS FOR THE CURRENT YEAR? IF NO DEPOT CAPACITY CHANGE IS INVOLVED, COULD THE FUNDS BE USED TO MEET OTHERS PRIORITY BUDGET REQUIREMENTS?

OSD's response was two-fold. First, they did not think they could adequately defend a policy that was one way. They felt, to be fair, they would have to approve requests that would both raise and lower the stabilized price, not just lower it. Second, when OSD develops the budget they seek sufficient resources to accomplish the programmed activities and really want no more money than that. Lowering the price on an item would free up money and the DOD and the Air Force program manager might differ on how the excess money should be spent. OSD stated the Air Force has a tendency to over project cost then want to lower prices in the year of execution.

Question #5. This question was also asked of the D/M in the ALCs and invoked quite a negative reaction from

the D/Ms. Question 5 was asked of the OSD manager to understand OSD's intention behind such a statement.

QUESTION #5: SEVERAL DOD MANAGERS HAVE STATED THAT THEY DO NOT WANT THE D/M IN THE FIELD TO BE CONCERNED WITH PROFIT/LOSS AND PRICE-VS-COST. THEY JUST WANT THE D/Ms TO BE CONCERNED WITH KEEPING THE COSTS AS LOW AS POSSIBLE. IS THIS A REALISTIC APPROACH TO PERFORMANCE MEASUREMENT FOR ORGANIZATIONS?

OSD responded that managers do need a benchmark which was the DOD estimated cost. Rates and prices are stabilized 18 months in advance at the ALC level, incorporated into the budget, then passed on to DOD. OSD stated that there were so many variables which influence the cost that by the time the workload was performed, the price did not relate to cost making profit and loss meaningless.

OSD's budget projections are updated by HQ AFLC several times during the fiscal year. Since the updated budget reflects actual total cost more closely than the original stabilized prices, OSD thought that the DOD estimated total cost was a more realistic estimate of the actual cost of a completed workload. For this reason, OSD thought that the DOD estimated total cost should be used for performance measurement purposes.

It should be noted that managing by total estimated cost still does not help ALC managers effectively track costs. In my opinion, it is unadvisable to manage the industrial fund on a total cost basis because the workload within the ALCs is not homogeneous. Aircraft PDM, engine

repair, and exchangeable repair make up the bulk of the workload at the ALC level. At the start of the fiscal year, each ALC has a different work mix of these three types of workload categories. During the fiscal year, the customer may change his equipment's work scope at an ALC, and consequently, the work mix. If an ALC is managed by total cost, then this change in work mix would render the original workload total cost estimates useless. Since the ALCs cannot determine the should cost of the items being repaired under the present computer software conditions, such a change in workmix during the fiscal year makes measuring actual cost versus estimated total cost also meaningless. Under the present conditions at the ALCs, it seems the only efficient method to accurately track costs for performance measurement purposes would be through the development of a should cost system.

OSD contended that any shortfalls in this system were caused by poor communication, specifically citing the need for improvement between HQ AFLC and the ALCs. OSD sometimes failed to communicate with HQ AFLC, and HQ AFLC did not always inform the ALCs about budget and policy changes. OSD stated that they were trying to improve communications by holding workshops and by sending more memos to the services.

Although OSD thought communication may be the shortfall of the system (and I agree that it may be one of them,

the others are cited in Chapter 4), they did not seem to be trying to improve the communications link between HQ AFLC and themselves. I think that OSD needs to make a more diligent effort in resolving the problem of performance measurement within the ALCs.

Question #6. Some issues addressed in this thesis were also addressed in the S&I report to the House in 1978. Question 6 was directed to OSD to see if the problem areas that rate stabilization had created in the past have been corrected.

QUESTION #6: A S&I REPORT TO THE HOUSE IN 1978 CITED THREE PROBLEM AREAS WITH THE RATE STABILIZATION POLICY: (A) RATE STABILIZATION HAS TAKEN SOME MANAGEMENT CONTROL FROM THE ALC MANAGERS AND PUT IT AT A HIGHER LEVEL. IS THIS CONSISTENT WITH SECRETARY WEINBERGER'S STATED POLICY OF DECENTRALIZATION? (B) RATE STABILIZATION HAS WEAKENED INCENTIVES FOR GOOD MANAGERS. A MANAGER IS NOW JUDGED ON HOW WELL HE OPERATED PER ESTIMATES: AND (C) RATE STABILIZATION COMPLETELY SHIFTED THE RISK FROM THE CUSTOMER TO THE INDUSTRIAL FUND. DO THESE THREE PROBLEMS/ISSUES STILL EXIST TODAY?

OSD responded to each segment independently:

(a) OSD contended that rate stabilization is consistent with Secretary Weinberger's policy. Higher organizations determine the price, but the individual account managers still have control over the costs. OSD thought that the fund managers should not be concerned with the profits or losses because price is set so far in advance and is changed so many times during the preliminary budget cycle that it has made profit and loss meaningless performance

indicators. OSD also stated that what the industrial fund manager thinks is best for the fund may not be the best for the DOD.

It is my opinion that rate stabilization has taken control from the ALC and HQ AFLC fund managers and has centralized it at the OSD level. I think, therefore, that the rate stabilization policy, as is currently being implemented, is not consistent with Secretary Weinberger's policy. It is true that the individual account managers do have control over the costs at the ALC level, but they have no effective means of judging that cost to see if they are operating efficiently.

(b) OSD measures the performance of the ALC manager by judging him on what he did versus what he said he was going to do and what it cost versus what he said it was going to cost. Managers, said OSD, need to be educated that profit and loss mean nothing except for all the funds when viewed as a whole.

Unfortunately, OSD does not realize what the managers said it was going to cost was the price and OSD's periodically updated budget estimate may no longer reflect the estimated cost because of a change in work mix. Again, the communication process needs to be improved between the ALCs, HQ AFLC, and OSD.

(c) OSD said that there was a large customer risk. The customer, since the inactment of rate stabilization, is

more dependent upon the industrial fund being efficient. Before rate stabilization, it was easier for the customer to pressure the industrial fund to keep prices down, but now the customer no longer monitors the industrial fund's price.

OSD only identified the customer risk. The customer is always funded regardless of the industrial fund's prices, so it is hard to imagine that the customers bear any of the financial risk. The industrial fund, however, sets its prices far in advance and is held to them, apparently bearing all of the financial risk of the system.

Question #7, #8, and #9. Through the next questions, OSD was asked to comment about the most frequent problem areas mentioned by those interviewed at the ALC level, which rate stabilization had created.

QUESTION #7: WHY MUST DISSIPATION OF THE ALC PROFITS/LOSSES OCCUR AT THE HQ AFLC LEVEL?

OSD's response was two-fold. First, OSD viewed the Air Force maintenance depot system as one large organization (OSD called this the corporate perspective). The ALCs are just individual components of the large organization and OSD would rather see the dissipation occur throughout the whole organization. Second, when the profits and losses were previously dissipated at each ALC, some members of Congress did not understand why it cost less money per hour to repair a B-52 at San Antonio than at Oklahoma City (the cost differences between the two cities existed because of different facility lay outs and because the B-52s being

repaired were not the same model type at each ALC). These members of Congress pressured the DOD to repair all B-52s at the "least expensive" location, not understanding the complexities of the situation. This type of action prompted OSD to make the rates consistent between ALCs that repaired similar work type. One such policy which OSD thought would help the rate compatibility problem was the initiation of dissipation of funds at the command (HQ AFLC) level. OSD felt that this solution had solved their problems because Congress no longer pressures them.

QUESTION #8: WHY ARE ERRC CODE CHANGES NOT VALID REASONS FOR PRICE CHANGE REQUESTS? WHY HAS OSD DISAPPROVED SUCH REQUESTS?

QUESTION #9: WHY ARE COMPUTER ERRORS OR SIMILAR TYPE ERRORS NOT VALID REASONS FOR PRICE CHANGE REQUESTS?

OSD's response was the same for both questions. OSD wants to stay with stabilized rates and prices and only will change them to avoid an industrial fund disaster. If the industrial fund runs short of operating funds, then OSD can issue a "pass through" of funds so that the industrial fund can continue solvent operation. OSD would rather see the industrial fund get a cash infusion (either from OSD or Congress) than change prices during the fiscal year and have the customer seek additional appropriations.

OSD's passage of additional working capital to the industrial fund during the fiscal year is possibly bypassing an important internal control of the industrial fund. More

effective cost control over the ALCs might occur if the customers are made to request additional funds (by the industrial fund raising its prices, for example). If the ALC's cost is greater than the price during the year and the fund runs short of money, OSD will issue a cash infusion so that the fund can continue to operate with stabilized prices until the end of the year. In this case, the ALC managers have no incentive to control costs (since they do not have a should cost benchmark). If, however, they needed to raise the prices to continue operation, the ALCs could have the customer as an additional means of cost control. If the price is varied, the customer will want to know why. It appears that such a system of checks and balances would be more efficient than obtaining additional operating funds via an OSD pass through. While this may result in a return to the spiral referred to by OSD, this spiral should only occur in times of high inflation. At that time, it would be appropriate to issue a pass through, but the direct cash infusion into the industrial fund should be the exception rather than the rule.

CHAPTER 4

FINDINGS AND RECOMMENDATIONS

This chapter discusses the overall findings and how they relate to the research objectives and questions, recommended changes in the rate stabilization policy, and other related observations.

Achievement of Objectives/Questions

As a result of this research effort, the research objective was met. This objective was to analyze the impact of rate stabilization upon the Depot Maintenance Industrial Fund. This objective was met by conducting interviews with both the implementors of the stabilization policy (OSD) and recipients of the policy (HQ AFLC and the ALCs). Through these interviews, along with other research references, both the strengths and weaknesses of the rate stabilization policy were identified, as well as the benefits and deficiencies of this policy's implementation at the ALC level.

The research conducted in this thesis provided significant direction for answering the research questions. The first research question asked if the goals of rate stabilization conflict with the goals of the industrial fund. The findings of the research indicated that goals of rate stabilization and the industrial fund do conflict in some

instances resulting in a decrease in the ALC fund manager's control. As shown by the interviews, stabilizing the rates and not being able to change them has left the contrasting of price and cost as virtually a meaningless performance indicator. Since the ALCs have no concrete benchmark to measure costs against, the first goal of the industrial fund is violated (the first objective of the industrial fund is to provide a more effective means of cost control). The industrial fund was established as a business-type enterprise with a buyer-seller relationship. It was the job of maintenance to set realistic prices and to break even by controlling costs. It was also the job of the buyer to monitor maintenance and make sure the ALCs held costs down as close as possible to the original price. By implementing rate stabilization and by effectively allowing no price changes, the buyer-seller adversarial relationship has been destroyed. This inhibits the fund manager's ability to control costs and is therefore causing the first objective of the industrial fund to no longer be accomplished.

Several rate stabilization policies, such as dissipation of profit at the command level, and infrequent price changes, have also taken some management control away from the fund managers. This violates the third goal of the industrial fund, to provide managers the financial authority and flexibility to efficiently use manpower, material, and resources. The OSD policy of dissipation of profit at the

HQ AFLC level has taken financial authority from ALC managers. The ALCs are now dependent on the other ALCs' abilities to control cost, rather than just worrying about their own. The inability to change prices has taken away an important aspect of management control, flexibility.

(3:302)

The second research question asked if the goal incongruence caused cost and price discrepancies that are inhibiting both the mission readiness of the Air Force and the maintenance managers' ability to meet their goals and expectations. As was earlier stated, the research in this thesis provides significant direction in answering this question. A clear yes or no response is not possible because neither the mission readiness nor the manager's goals and expectations can be measured in quantifiable terms. This thesis cannot support a conclusion that states the readiness of the United States is decreased or increased by 23 airplanes on alert or by \$12 million because there are no data bases available to support such a claim. However, based upon many interviews with top level managers, it appears that if fund managers could lower the price as a rule and raise it as an exception, both the mission readiness of the Air Force and the ability of the fund manager to meet his goals, would be greatly enhanced.

Findings

OSD, who established and monitors the rate stabilization policy, views the Air Force Depot Maintenance industrial fund (which includes all five ALCs) as one organization and sets its policies based upon that view. The fund, however, is five separate organizations (ALCs) whose needs have to be recognized, for it is at the ALC level where there is a possibility that the tax dollars could be used more efficiently. Therefore, some flexibility needs to exist within the system to accommodate the unique conditions encountered within each ALC.

It is this thesis' opinion that the policies of rate stabilization by being so inflexible are keeping the country's mission readiness from reaching its maximum potential. If prices were lowered in the year of workload execution, two benefits which would enhance the mission readiness would result. First, appropriated funds which were committed to the preparation of specific group of items could be freed, thus enabling more items to be repaired than originally anticipated. If the program receiving the price cut needed no more items repaired, then the freed appropriated funds could be rerouted to an organization in need of additional funds. By allowing either method, the mission readiness would be increased by an allowed reduction in the stabilized price. Second, today's dollar will buy more maintenance this year, than it will in two years. When

a price change is located, the earliest it can be incorporated into the system is "budget lead time away," which is normally two years down the road. Considering the time value of money, it would be more prudent to lower prices as soon as possible, thus enabling the additional money to be put to use today rather than letting the proposed savings be tied up in the budgeting process for two years.

Recommendations

Based upon research and extensive interviewing, this thesis recommends the following rate stabilization policy changes to improve the fund manager's ability to control costs.

1. OSD SHOULD GRANT ALC MANAGEMENT THE FLEXIBILITY TO LOWER PRICES.

When interviewing the D/M personnel, the last informal topic of discussion was the issue of readiness. All the D/Ms would accept a rate stabilization policy that would only lower the price. They realize that a price increase would decrease mission readiness (and understand the original intent of the policy), but they also understand that by decreasing their prices where possible, the mission readiness would be enhanced. Such a policy would also increase employee incentive to find productivity improvements that count and would reestablish some of the ALC managers management control which was lost with the initiation of the original rate stabilization policy.

OSD stated that they "can't enforce a policy that is one way." However, the policy, as it stands, is "one way" putting the entire risk upon the D/M. A policy change to approve changes to lower price would help both the seller, the buyer, and the country's readiness.

2. OSD SHOULD ALLOW DISSIPATION OF PROFIT TO BE DECIDED AT THE HQ AFLC LEVEL.

Each ALC would like to stand on its own and should. The dissipation of profit or loss should be left for HQ AFLC to decide, not OSD. If one of the ALCs is managed poorly, then the profit or loss that ALC created should be returned to that ALC's customers (no two ALCs handle exactly the same components), not equally spread to all the customers of all the ALCs (which is the way it is done now). Why should a B-52 program manager have his price lowered because last year an F-100 engine manager was overcharged? The money should be returned to the F-100 program, not dispersed throughout the command so that B-52s at Oklahoma City and San Antonio will cost the same (see question 7, OSD interview).

In some instances, factors which create profits and losses are beyond the ALC's control, such as unexpected inflation of exotic metals. In such a case, poor fiscal management is not to blame, so HQ AFLC should have the flexibility to have the command dissipate the loss (as the case would be). But, in order to give managers the incentive to be productive, efficient, and responsible for their

estimates, each ALC should normally dissipate their own profits/losses each year.

3. REALISTIC PERFORMANCE MEASUREMENT INDICATORS
NEED TO BE ESTABLISHED WITHIN THE ALCs.

There are certain basic principles of management which an organization must adhere to in order for it to operate successfully and efficiently. One of these principles is to establish a process where management sets realistic cost objectives and is held to them. (1:49; 3:43; 9:9) Under rate stabilization, the ALCs no longer have price as a realistic cost objective because price and cost are no longer related during the work period. Therefore, the ALCs are missing an element essential to the control process, meaningful performance measurement. The ALCs need to establish a "should cost" accounting system (as discussed earlier) so they can gauge their cost to some useful measurement criteria.

4. THE PERCEPTION OF PROFIT AND LOSS NEEDS TO BE
EXPLAINED AND UNDERSTOOD AT THE ALC, HQ AFLC, AND OSD
LEVELS.

OSD insists profit and loss are meaningless while the ALCs insist that is what they are being judged on. The ALCs do not look for price changes at the present, rather they look for ways to explain their profits and losses. It is recommended that the top level ALC managers, HQ AFLC, and OSD determine just what they want profit and loss to represent in the industrial fund. Since the inception of

rate stabilization, the break even goal of the industrial fund is no longer a meaningful measure of performance.

5. OSD SHOULD ALLOW THE ALCs TO APPLY BETTER INFLATION GUIDANCE FOR MORE REALISTIC PRICE ESTIMATES.

Jet engine material components do not inflate at the same rate as sophisticated electronic components. (4) Fund managers should be able to use inflation rates more closely associated with the economic indicators. Next year's prices should be based upon specific economic guidance by categories which would more accurately estimate the inflation of individual components. This specific guidance would reflect individual component inflation better than the current general guidelines and thus enable more accurate pricing.

6. OSD SHOULD ALLOW ERRC CODE CHANGES TO BE CONSIDERED AS A VALID CRITERION FOR CHANGING PRICES.

It is recommended that OSD include in its price change criteria, ERRC code changes. It is not good fiscal management (and it is a waste of appropriated money) when an expense item becomes an investment item and the customer pays for it twice. As discussed earlier, the money could be reprogrammed to other projects needing funds, thus increasing the country's mission readiness.

7. OSD SHOULD ALLOW ERRORS IN PRICE AS VALID CRITERIA FOR APPROVAL OF PRICE CHANGES.

Many customers of the industrial fund feel that the price should reflect cost and think that if a known error exists within the system, it should be corrected and the

price adjusted accordingly. This policy, if enacted, could raise the price, thus requiring the customer to seek additional appropriations, but a realistic price would enhance performance measurement.

Recommendations for Further Study

As a result of this effort, several recommendations have been made which, this study believes, would enhance the present operation of the industrial fund. However, further research and study needs to be accomplished in the area of ALC performance measurement.

Specifically, the ALCs need assistance in developing an accounting system for determining should cost within the resource control centers (RCC). Presently, the RCCs are held accountable for overhead costs which are allocated to them, over which they have no control. An accounting system needs to be developed which would compare the actual cost to repair an item versus the cost it should take to repair that item (such as separating direct and overhead costs). Such a project would be useful in helping the ALCs further control their costs and measure their performance.

An area of further study could involve a comparison between rate stabilization in the industrial fund and rate stabilization in the stock fund. The stock funds prices, unlike the industrial fund, are stabilized just prior to the fiscal year, enabling current cost estimates and more accurate pricing. The industrial fund, however, establishes

many of its rates and prices up to 18 months in advance, but many of its prices are based on prices from the stock fund. Why should the stock fund be able to change its prices after the industrial fund has incorporated them into their budget? The OSD policy between the stock and industrial funds appears to be inconsistent. A detailed study contrasting the management approaches between the stock and industrial fund would be beneficial in helping determine which management technique is more effective.

This thesis has recommended seven OSD policy changes. Although this thesis considers these policy changes essential for the efficient operation of the fund, it also recognizes that these policy changes will create some instabilities in the system. One impact these recommendations will create, is more work for the customers' budgeting personnel. Although the increased customer workload is considered necessary to maintain management control over the fund, this thesis might have overlooked other important industrial fund impacts resulting from these policy changes. It is recommended that HQ AFLC and OSD study the possible impacts of the seven recommended policy changes.

SELECTED BIBLIOGRAPHY

REFERENCES CITED

1. Albanese, Robert. Managing, Toward Accountability for Performance. Homewood IL: Richard D. Irwin, Inc., 1981.
2. Buckingham, Charles. "The Buckingham Report, An Assessment of the Depot Maintenance Management System." Unpublished research report, unnumbered. The Air Force Logistics Command, Headquarters, Wright-Patterson AFB OH, undated.
3. Cushing, Barry E. Accounting Information Systems and Business Organizations. Reading MA: The Addison-Wesley Co., 1982.
4. Falldine, George. Supervisory Maintenance Specialist. HQ AFLC/MAJA, Wright-Patterson AFB OH. Personal interviews conducted intermittently from 9 February to 23 August 1982.
5. _____. Letter, subject: Industrial Fund Productivity: Rate Adjustments, Inter-Office Discussion Item, 8 September 1980.
6. _____. Letter, subject: Price Change Request, to HQ USAF/ACBO, 2 June 1978.
7. Ferber, Robert and P. J. Verdoorn. Research Methods in Economics and Business. Toronto, Ontario: The MacMillan Co., 1970.
8. Kerlinger, Fred N. Foundations of Behavioral Research. 2d ed. New York: Holt, Rinehart and Winston, Inc., 1974.
9. Schoderbek, Charles G., Peter P. Schoderbeck, and Asterios Kefalas. Management Systems. Dallas TX: Business Publications, Inc., 1980.
10. Sheard, James L. and Brian G. Grauck. "Questionnaire Design, Administration and Analysis." Unpublished research report, unnumbered. The Air Force Institute of Technology, Research Studies Department, Graduate Logistics Management Program, Wright-Patterson AFB OH, undated.

11. Surveys and Investigations Staff of the United States House of Representatives. A Report to the Committee on Appropriations U.S. House of Representatives on Price/Rate Stabilization Practices in the Working Capital Funds, Department of Defense. Washington: Government Printing Office, April 1978.
12. U.S. Department of the Air Force. Depot Maintenance Industrial Fund Procedures for the D/M and D/MM. AFLCM 66-9. Washington: Government Printing Office, 1978.
13. U.S. Department of Defense. Regulations Governing Industrial Fund Operations. DOD Directive 7410.4. Washington: Government Printing Office, 25 September 1972.