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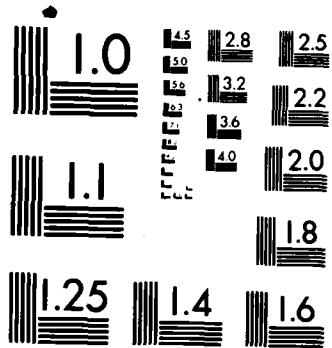
COMPARISON OF THE JOB SATISFACTION OF AIRCRAFT AND  
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WRIGHT-PATTERSON AFB OH SCHOOL OF SYST R J WILLIAMS  
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 OFFICERS IN CENTRALIZED AND  
 DECENTRALIZED MAINTENANCE ORGANIZATIONS

THESIS

Richard J. Williams  
 Captain, USAF

AFIT/GLM/LSM/85S-82

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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 Logistics Management

Richard J. Williams, B.E.

Captain, USAF

September 1985

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— Richard J. Williams

## Table of Contents

	Page
Acknowledgements . . . . .	ii
List of Figures . . . . .	v
List of Tables . . . . .	vi
Abstract . . . . .	vii
I. Introduction . . . . .	1
Overview . . . . .	1
Problem Statement . . . . .	3
Research Objectives . . . . .	3
Research Questions . . . . .	4
Data Availability . . . . .	4
II. Literature Review . . . . .	5
Overview . . . . .	5
Porter and Lawler . . . . .	5
Herzberg, Mausner, and Snyderman . . . . .	12
Hackman, Oldham, Jansen, and Purdy . . . . .	19
Price . . . . .	20
Other Major Studies on Job Satisfaction . . . . .	24
Vroom, Galbraith, and Cummings . . . . .	27
Thesis Findings . . . . .	30
Air Force Regulation 66-1 and Air Force Regulation 66-5 . . . . .	33
Summary . . . . .	40
III. Methodology . . . . .	44
Overview . . . . .	44
Data Gathering Plan . . . . .	44
Data Collection Instrument . . . . .	44
Survey Bias . . . . .	45
Instrument Validity and Reliability . . . . .	45
Description of the Sample . . . . .	45
Inferences about the Population . . . . .	52
Assumptions and Limitations . . . . .	52
Variable Definitions . . . . .	53
Data Analysis Plan . . . . .	57
Discriminant Analysis . . . . .	57



	Page
IV. Results of Research . . . . .	59
V. Conclusions and Recommendations for Further Research . . . . .	61
Conclusions . . . . .	61
Recommendations for Further Research . . . . .	64
Appendix A: Organizational Assessment Package . . . . .	65
Appendix B: Organizational Assessment Package Output . . . . .	75
Appendix C: Air Force Specialty Code Career Field Descriptions . . . . .	91
Appendix D: Discriminant Analysis Subprogram . . . . .	95
Bibliography . . . . .	97
Vita . . . . .	100

List of Figures

Figure	Page
1. Porter and Lawler's Theoretical Model . . . . .	7
2. Porter and Lawler's Revised Diagram of the Theoretical Model . . . . .	11
3. Herzberg, Mausner, and Synderman Comparison of Satisfiers and Dissatisfiers . . . . .	15
4. Relationships Between the Determinants, Intervening Variables and Turnover . . . . .	21
5. Expectancy Theory of Motivation . . . . .	28
6. AFR 66-1 Centralized Maintenance Organization . .	35
7. AFR 66-5 Decentralized Maintenance Organization .	37
8. Elements of Job Satisfaction . . . . .	42
9. Original Job Satisfaction Factors Selected . . . .	43
10. Revised Job Satisfaction Factors Investigated . .	54
11. OAP Factors . . . . .	55

List of Tables

Table	Page
1. Manning in Air Force Specialty Code 40XX . . . . .	2
2. Number of Respondents by Maintenance Organization . . . . .	46
3. Sex of Respondents . . . . .	48
4. Age of Respondents . . . . .	48
5. Respondents' Number of Years in the Air Force . .	49
6. Respondents' Number of Years in Present Career Field . . . . .	49
7. Respondents' Ethnic Group . . . . .	49
8. Respondents' Education Level . . . . .	50
9. Respondents' Professional Military Education Level . . . . .	50
10. Respondents' Supervisory Responsibility . . . . .	50
11. Respondents' Work Schedule . . . . .	51
12. Respondents' Aeronautical Rating . . . . .	51
13. Respondents' Career Intentions . . . . .	51
14. Cases Processed . . . . .	58
15. Minimum Tolerance Test . . . . .	59

Abstract

This study analyzed a subset of data from the Leadership and Management Development Center (LMDC) data base containing responses to the Organizational Assessment Package (OAP) survey administered to aircraft and munitions maintenance officers in the maintenance career field. The data consists of demographic data and responses to attitudinal questions organized into twenty-one statistical factors. A literature review related job satisfaction, factors of job satisfaction, and maintenance organization to factors measured by the OAP. Discriminant analysis was used to attempt to discriminate between the job satisfaction of maintenance officers in centralized and decentralized maintenance organizations. No significant difference in the job satisfaction or OAP factors related to job satisfaction could be found between maintenance officers in centralized and decentralized maintenance organizations. The research was concluded with recommended areas for further research.

COMPARISON OF THE JOB SATISFACTION OF AIRCRAFT AND  
MUNITIONS MAINTENANCE OFFICERS IN CENTRALIZED AND  
DECENTRALIZED MAINTENANCE ORGANIZATIONS

I. Introduction

Overview

Maintenance officers work in the most challenging environment in the Air Force. On March 22, 1985 in a Maintenance Officers Association convention near Washington, D.C., Lieutenant General Leo Marquez stated, "There's nothing esoteric about it. It's damned hard work. Your job is not how an aircraft is put together, but how to manage and lead people" (10:9). The general went on to say that, ". . . It's an environment unlike any other. Nobody (in the Air Force) learns their jobs in the pressure cooker like we do" (10:9). Maintenance officers assume responsibility right from the start. General Marquez emphasized this point by stating, "The maintenance officer is entrusted the earliest with the largest amount of responsibility" (10:9). Maintenance officers must assume positions of responsibility early in their career because of the shortage of more experienced maintenance officers. The February 1985 manning of maintenance officers by command and grade is presented in Table 1.

TABLE 1  
MANNING IN AIR FORCE SPECIALTY CODE 40XX (19)

Centralized Commands								
Grade	SAC		MAC		ATC		AFSC	
	1	2	1	2	1	2	1	2
Lieutenant Colonel	154	131	81	70	40	34	21	17
Major	182	130	88	60	75	44	23	14
Captain	323	235	187	194	127	112	32	35
Lieutenant	47	175	66	74	31	43	13	12

Decentralized Commands								
Grade	TAC		PACAF		USAFE		AAC	
	1	2	1	2	1	2	1	2
Lieutenant Colonel	143	120	29	31	67	46	6	3
Major	193	116	37	23	95	81	10	9
Captain	510	353	56	82	206	246	17	24
Lieutenant	56	51	48	28	64	59	8	4

- 1 Authorized
- 2 Assigned

The Air Force now operates using two separate maintenance concepts under a single regulation, Air Force Regulation (AFR) 66-1. The Strategic Air Command (SAC), Military Airlift Command (MAC), Air Force Systems Command (AFSC), and Air Training Command (ATC) operate under a centralized maintenance concept, while the Tactical Air Command (TAC), United States Air Forces Europe (USAFE), Pacific Air Force (PACAF), and Alaskan Air Command (AAC) operate under a decentralized maintenance concept known as Combat Oriented Maintenance Organization (COMO). The COMO concept of maintenance was implemented in the middle and late 1970s. No

studies comparing the job satisfaction of maintenance officers under both maintenance concepts have yet been performed.

Job satisfaction has been related to the work environment. Because of fundamental differences of the two maintenance concepts and the inherent challenging nature of the maintenance officers' work, is it possible that one maintenance organization offers more job satisfaction than the other?

#### Problem Statement

Is there a difference between the job satisfaction of maintenance officers who are assigned to centralized maintenance organizations and those assigned to decentralized maintenance organizations, and can it be explained because of different maintenance concepts?

#### Research Objectives

The objectives of this research are to determine if there are differences in the mean factor values assigned to the same factors between maintenance officers assigned to centralized maintenance organizations and those assigned to decentralized maintenance organizations, and if a relationship exists, to develop a model illustrating the relationship of these factors to job satisfaction.

### Research Questions

1. What is the difference in the job satisfaction level of maintenance officers assigned to centralized maintenance organizations and those assigned to decentralized maintenance organizations?

2. Which variables of job satisfaction are different and what is the meaning of their differences?

### Data Availability

Data are presently available from the Leadership and Management Development Center (LMDC) at Maxwell AFB, Alabama, and are available from the Organizational Assessment Package survey data base.



## II. Literature Review

### Overview

According to E. A. Locke (1969), "Job satisfaction is the pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating one's job values" (3:1). Many books and articles have been written on what variables appear to result in job satisfaction. The literature reviewed in this chapter indicates a common thread of nine factors that result in job satisfaction. The nine factors are achievement, advancement, work itself, task significance, relationships, communications, task autonomy, recognition, and pay. This section will examine the conceptual approach to defining job satisfaction and demonstrate the large number of theories put forth to explain job satisfaction.

### Porter and Lawler

Porter and Lawler's research concerns the relationship between the job attitudes of managers and their on-the-job performance. They define satisfaction as "the extent to which rewards actually received meet or exceed the perceived equitable levels of rewards" (22:31). The more actual rewards fail to meet or exceed perceived equitable rewards, the more dissatisfied a person becomes.

Individuals will evaluate various strategies of behavior and select the behavior they believe leads to work-related outcomes or rewards they value. Vroom's expectancy theory is used by Porter and Lawler to approach the subject of managerial motivation because the theory argues that anticipation of positive valence outcomes functions selectively on actions which are expected to lead to satisfaction (22:12). "Expectancy theory concerns choosing behavior that can lead to desired rewards" (25:405).

The terminology and concepts application of expectancy theory consider the complexities of human motivation and behavior. Expectancy theory is useful in understanding the attitudes and performance of managers in organizations (22:12). Porter and Lawler believe that emphasis on rationality and expectations is the best kind of cognition that influences managerial performance.

Porter and Lawler believe the central motives of most managers are achievement, self-actualization, power and status, income and advancement (22:13). Self-actualization is the most important need according to Porter. Lawler points to income as very important because of the breadth of needs it satisfies. The authors hypothesized about some of the variables they felt were important and built a theoretical model to show the relationships between and among them (Figure 1).

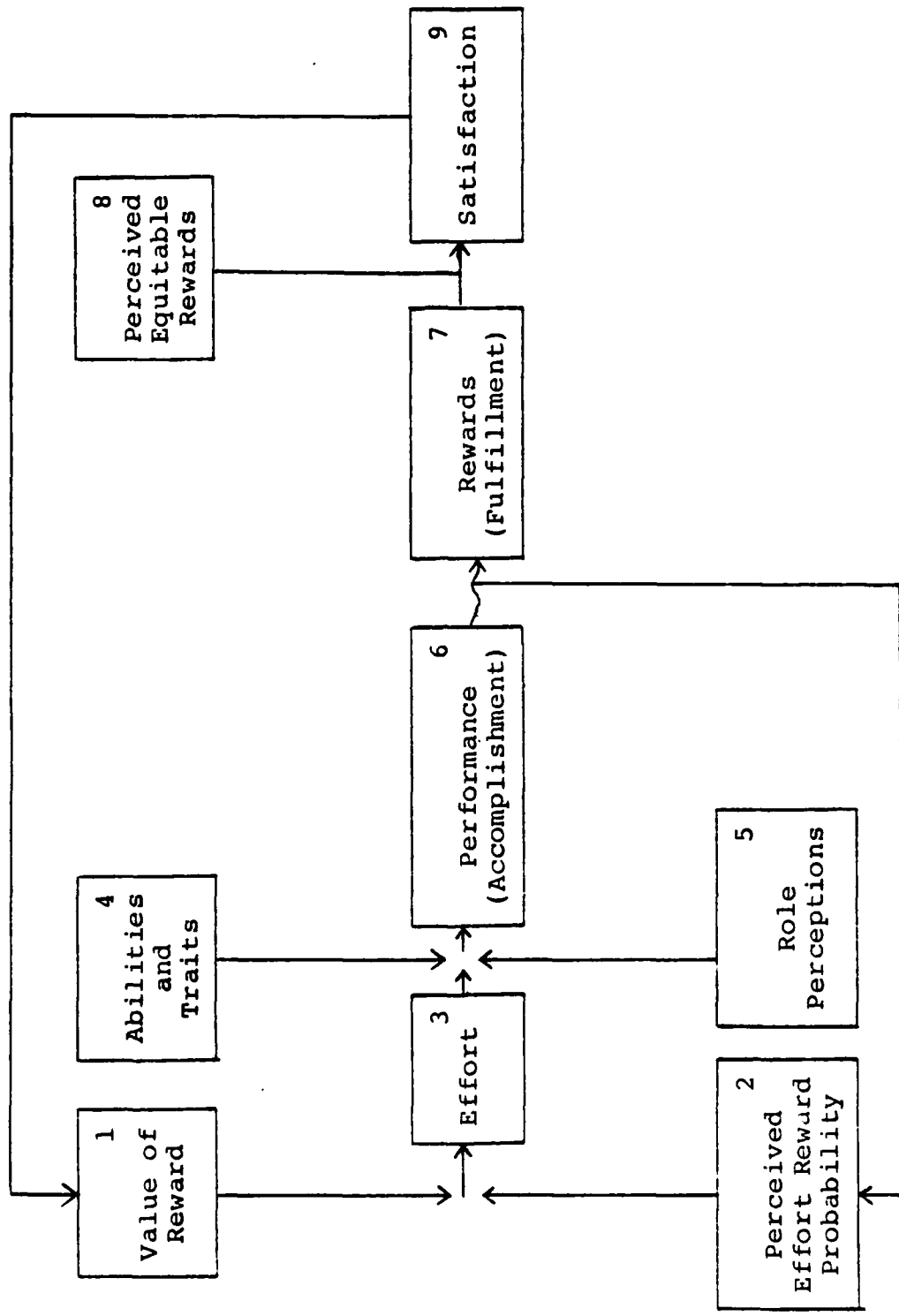


Fig. 1. Porter and Lawler's Theoretical Model (22:24)

Porter and Lawler's theoretical model predicts higher job satisfaction as the gap between perceived equitable rewards and the observed amount received decreases (22:31). The authors view satisfaction as the dependent variable in the performance-satisfaction relationship. Porter and Lawler's theoretical model combines nine separate variables to form a meaningful relationship. The nine variables of Porter and Lawler's theoretical model are:

1. Value of Reward: The attractiveness of positively valued outcomes to individuals. The model does not specify in detail how various rewards acquire differential values.

2. Effort Reward Probability: An individual's expectations concerning the likelihood that given amounts of rewards depend upon given amounts of effort.

3. Effort: The amount of energy an individual expends in a given situation.

4. Abilities and Traits: A relatively stable long-term individual characteristic representing the individual's currently developed power to perform.

5. Role Perception: The direction of effort and the kind of activities and behaviors the individual believes should be engaged in to perform the job successfully. When the role perception of the individual is the same as the superior's, it will result in successful performance as defined by the organization (22:24).

6. Performance: How much successful role achievement (behavior) is accomplished.

7. Rewards: Desirable outcomes or returns to persons that are provided by themselves or others.

8. Perceived Equitable Rewards: The level or amount of rewards that an individual feels should be received as the result of a given level of performance or be attached to a particular position or job in the organization.

9. Satisfaction: The derivative variable that is defined as the extent to which the rewards actually received, meet or exceed the perceived equitable level of rewards. High performance will lead to high satisfaction only if it decreases the gap between the perceived equitable level of rewards and the amount perceived as being actually received (22:16).

Porter and Lawler noted that performance may not be highly correlated with satisfaction (22:37). However, the model did not predict accurately the significant relationship of attitudes to performance. In fact, all variables presumed to affect performance did so. Because the model did not accurately portray the relationship of performance and satisfaction, Porter and Lawler developed a more complete theoretical model.

Porter and Lawler determined that two changes were needed to correct their original theoretical model. First, the single reward variable was separated into 7A extrinsic

rewards (administered by the organization), and 7B intrinsic rewards (administered by the individual). The higher order needs of autonomy and self-actualization were more likely to produce attitudes about satisfaction that are significantly related to performance. In their revised theoretical model, they made this a correction for the reward variable (Figure 2) because the difference between intrinsic and extrinsic rewards was stronger than they had realized. Porter and Lawler concluded that the needs satisfied by intrinsic rewards, such as autonomy and self-actualization, were more likely to result in attitudes of satisfaction related to performance (semi-wavy line) than the needs of security and social needs which are satisfied by extrinsic rewards (wavy line). The revised theoretical model of Porter and Lawler suggests that both intrinsic and extrinsic rewards are intervening variables.

The second change to their theoretical model made by Porter and Lawler involves a link from performance that seems to act directly upon the variable of perceived equitable rewards. Porter and Lawler hypothesized that self-ratings of performance are a major influence on an individual's feelings about the levels of rewards he should receive as the result of his performance. Two causal inferences were that (1) there is a positive relationship between inner-directed role perceptions and (2) performance

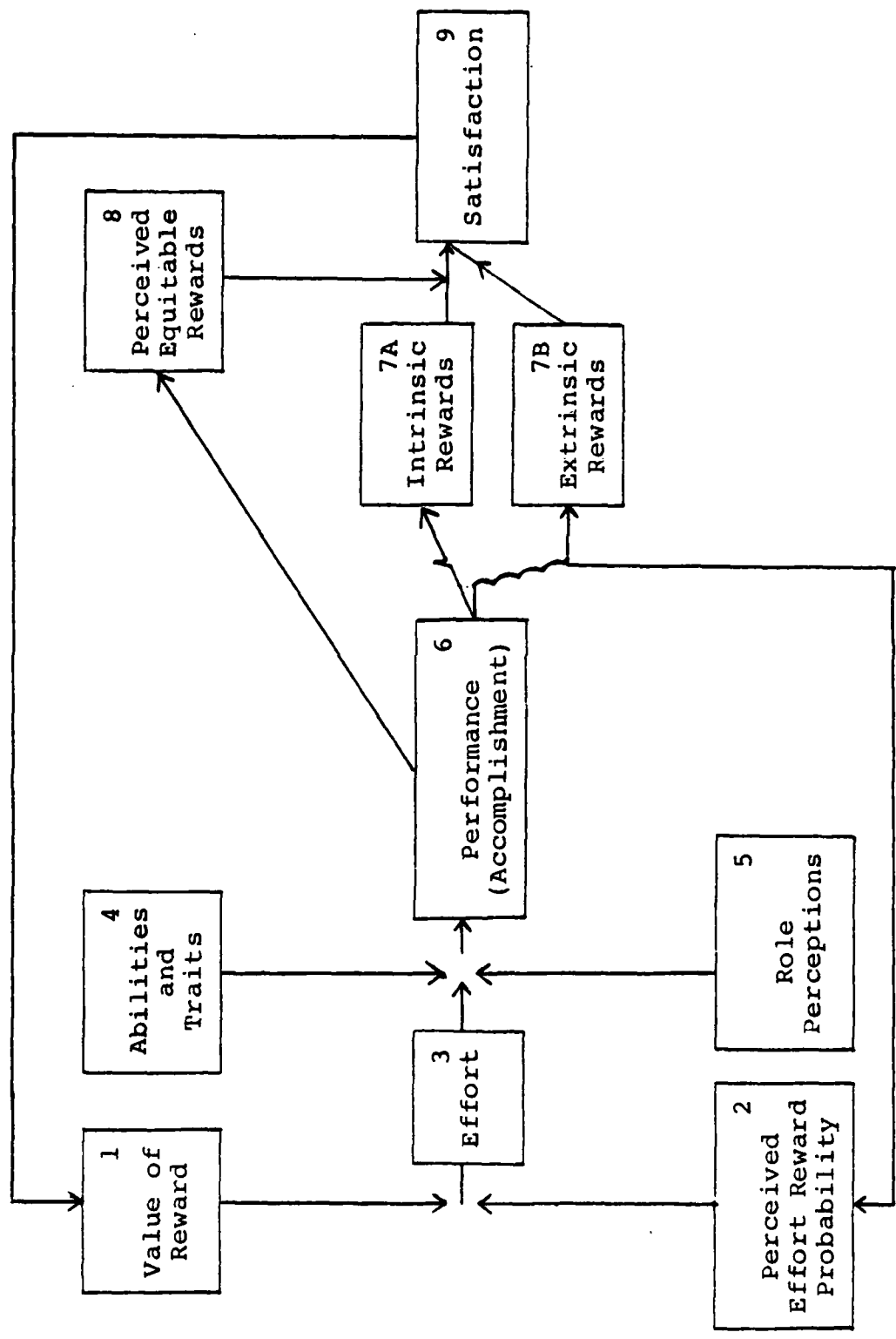


Fig. 2. Porter and Lawler's Revised Diagram of the Theoretical Model (22:164)

is greater for managers rated high in effort than for managers rated low in effort (22:164).

Porter and Lawler's revised theoretical model uses the expectancy theory to explain how satisfaction is achieved through rewards. The intrinsic and extrinsic rewards are valuable tools in understanding what causes people to be satisfied. The person's perception between effort and rewards will intervene to determine satisfaction. Porter and Lawler's model is helpful in understanding the factors that are important to the job satisfaction of maintenance officers. Professional maintenance officers have historically worked long, difficult and stressful hours to accomplish their assigned jobs. The job satisfaction the maintenance officer receives results from the value he places on his perceived efforts and the intrinsic and extrinsic rewards he experiences.

Herzberg, Mausner, and Snyderman

Herzberg, Mausner, and Snyderman performed a study to determine what factors affect job attitudes. They found "For the fortunate, work is the source of great satisfaction; for many others it is the cause of grief" (14:3). To measure morale or study the environmental factors as causative agents in behavior, they asked, "What does the worker want from his job" (14:7)? Three methods used to develop the answers were:



1. A prior list of factors was presented to the workers, who ranked or rated factors as to desirability.

2. The workers were asked to spontaneously indicate what they liked or disliked about their job, and then the factors which occurred frequently were used to deduce their relative importance.

3. Multiple item inventories or questionnaires were administered (14:7). Statistical analysis was applied. Factors were then deduced from a study of interrelationships among the items.

Herzberg, Mausner, and Snyderman found a difference in the resulting primary factors depending upon the investigative approach used to determine what the worker liked or disliked about his job. The concepts of "satisfiers" and "dissatisfiers" were suggested by this finding (14:7). Satisfiers result from intrinsic job factors (job satisfaction, recognition, work itself, responsibility and advancement) that increase levels of motivation and can result in motivated job performance. Dissatisfiers result from extrinsic factors (job security, salary, working conditions, status, company policies, quality of technical supervision, quality of interpersonal relations among peers, supervisors, subordinates, and fringe benefits). The absence of satisfiers will not cause dissatisfaction and the absence of dissatisfaction will not cause satisfaction (25:403,404).

Two levels of factors were used in interviewing engineers and accountants. First level factors were objective elements of the situation from which the respondent found a source for his good or bad feelings about the job. Second level factors were ones from which the respondent tried to figure out what in his own need and value systems led to his attitude toward his job at the time of the events being described.

The model Herzberg, Mausner, and Synderman developed attempts to categorize satisfiers and dissatisfiers. Satisfiers and dissatisfiers tend to be classified in one category more than another (Figure 3) (13:97). The satisfiers represent the job itself, whereas, the dissatisfiers represent the context in which the job is done (14:70). Achievement, recognition, work itself, responsibility, and advancement were the five most frequently identified first level satisfying factors (14:49). Company policy and administration, supervision-technical, recognition, salary, work itself, interpersonal relations-supervisors, advancement and working conditions were the nine most identified first level dissatisfiers (14:81).

The following constituted first level satisfying factors:

Achievement appeared in 41 percent of 228 sequences that accompanied favorable job attitudes. A common element

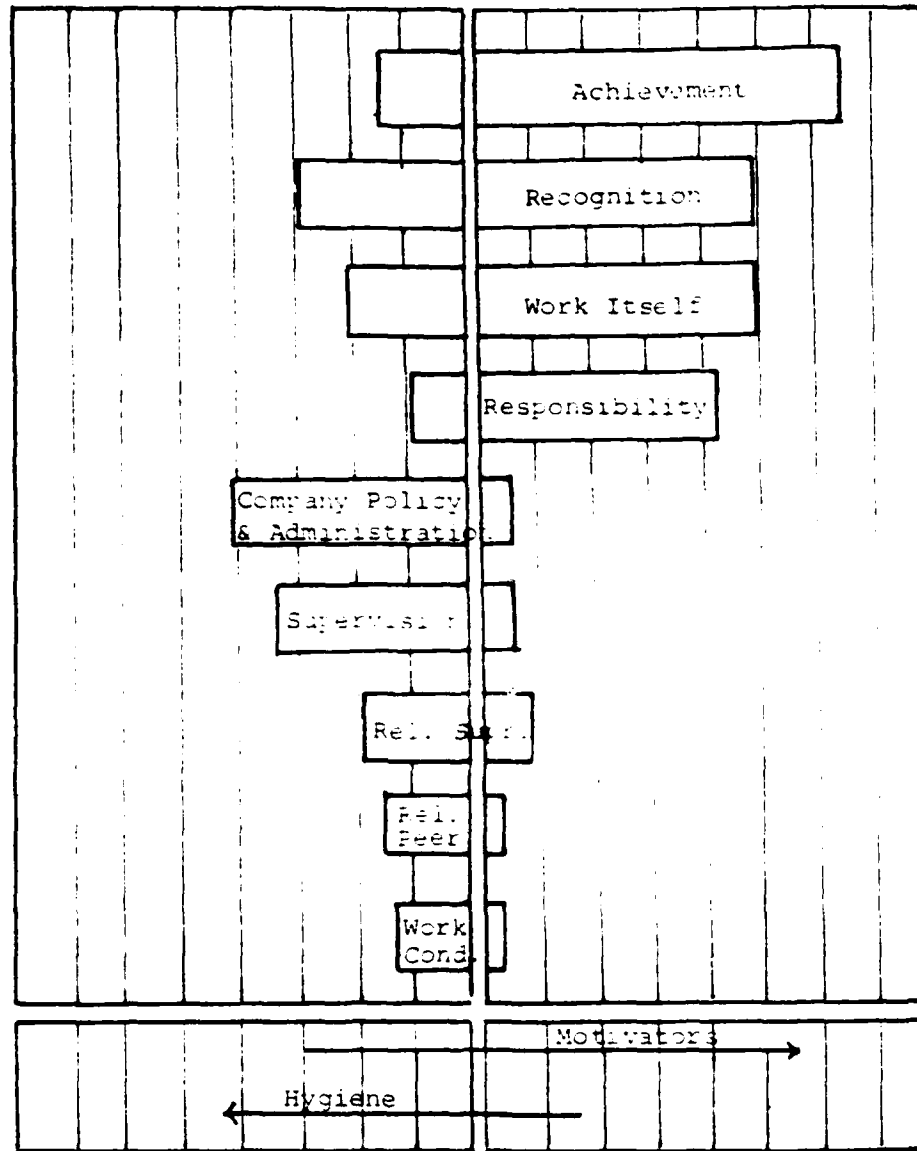


Fig. 3. Herzberg, Mausner, and Synderman  
 Comparison of Satisfiers and Dissatisfiers (14:97)

was the satisfaction received from the successful completion of a job (14:59).

Recognition appeared in 33 percent of the job attitude interviews. Recognition results from superiors, peers, customers, or subordinates noticing some achievement (14:60).

Work itself appeared in 20 percent of the job attitude interviews. The category described aspects of work that were rewarding in themselves without specific achievement or recognition. The characteristics were challenging work, varied work, and an opportunity to do a job completely (14:61).

Responsibility appeared in 20 percent of the job attitude interviews. Responsibility included being allowed to work without supervision, being responsible for one's own efforts, or others and being given a new kind of job with new responsibilities but no formal advancement (14:61).

Advancement appeared in 20 percent of the job attitude interviews. Advancement was simply being promoted. The real power of promotion to increase job satisfaction is often related to feelings of growth, recognition, achievement and responsibility (14:62). The top five first level factors focused on the job itself. They were:

1. Doing the job
2. Liking the job
3. Doing the job successfully

4. Receiving recognition for doing the job
5. Moving upward as an indication of professional growth (14:63)

The following constituted first level dissatisfiers:

Company policy and administration appeared in 33 percent of the job attitude surveys. The company's ineffectiveness produced inefficiency, waste, duplication of effort, or a struggle for power. The policies are perceived to be unfair or show detrimental effects on the worker or co-worker (14:71).

Supervision-technical appeared in 20 percent of the job attitude interviews. Supervision-technical is a category of the competence or incompetence, fairness or unfairness of the supervisor which were critical characteristics (14:46).

Recognition appeared in 20 percent of the job attitude interviews. Recognition is some act of notice, praise or blame (14:44).

Salary appeared in 18 percent of the job attitude interviews. Salary includes all sequences of events in which compensation plays a role (14:46).

Work itself appeared in 14 percent of the job attitude interviews. Work itself is the respondent's feeling of good or bad about the job (14:48).

Interpersonal relations-supervision appeared in 15 percent of the job attitude interviews. When the

technical qualities of supervision were poor, so were interpersonal relations (14:73).

Advancement appeared in 10 percent of the job attitude interviews. Advancement is an actual change in the status or position of the person in the company (14:46).

Working conditions appeared in 10 percent of the job attitude interviews. Working conditions are the physical conditions of work, the amount of work, or the facilities available for doing the work (14:48).

Herzberg, Mausner, and Synderman contributed the concept of satisfiers and dissatisfiers. Satisfiers are useful in understanding what motivates good job performance. Dissatisfiers are useful in understanding satisfiers and are useful in understanding what motivates good job performance. Dissatisfiers are useful in understanding what causes people to become discontent although they will not necessarily become satisfied if the dissatisfaction is removed. The first level factors of doing the job, liking the job, doing the job successfully and moving upward as an indication of professional growth are factors that have been determined by Herzberg, Mausner, and Snyderman to result in job satisfaction. The factors that result in job satisfaction of maintenance officers (achievement, work itself, relationships, and autonomy) are important in order to understand what maintenance officers value as professionals.

Hackman, Oldham, Jansen, and Purdy

In their book New Strategy for Job Enrichment, Hackman, Oldham, Jansen, and Purdy proposed three psychological states in determining a person's motivation and satisfaction on the job. They were:

1. Experienced meaningfulness. The individual must perceive the work as worthwhile or important by a system of values he accepts.

2. Experienced responsibility. The individual must believe he personally is accountable for the outcome of his efforts.

3. Knowledge of results. The individual must be able to determine frequently, whether the outcomes of his work activities are satisfactory (11:230).

The authors also identified five core job dimensions to make a job meaningful for the worker. The five core job characteristics for the worker are:

1. Skill Variety: The degree to which a job requires the worker to perform.

2. Task Identity: The degree to which the job requires completion of a "whole" and identifiable piece of work.

3. Task Significance: The degree to which the job has a substantial and perceivable impact on the lives of other people.

4. Increased Personal Responsibility: The degree to which the job gives the worker freedom, independence, and the ability to determine how he will carry it out.

5. Feedback: The degree to which a worker is carrying out the work activities required by the job and gets information about the effectiveness of his efforts (11:230).

Hackman, Oldham, Jansen, and Purdy proposed three psychological states: (1) experienced meaningfulness, (2) experienced responsibility, and (3) knowledge of results. The three psychological states address intrinsic values that the individual uses in determining his motivation and satisfaction. It is important to understand what causes a maintenance officer to be motivated and satisfied with the job he is doing. The dimensions the authors identified (skill variety, task identity, task significance, increased personal responsibility and feedback) are useful because they help define what makes the maintenance officer's job meaningful.

### Price

Price's research is concerned with the causes of job turnover. His model shows the relationship between intervening variables and turnover (Figure 4). His research enhances the understanding of factors related to job satisfaction and gives some key indicators to look for when job satisfaction is not present.



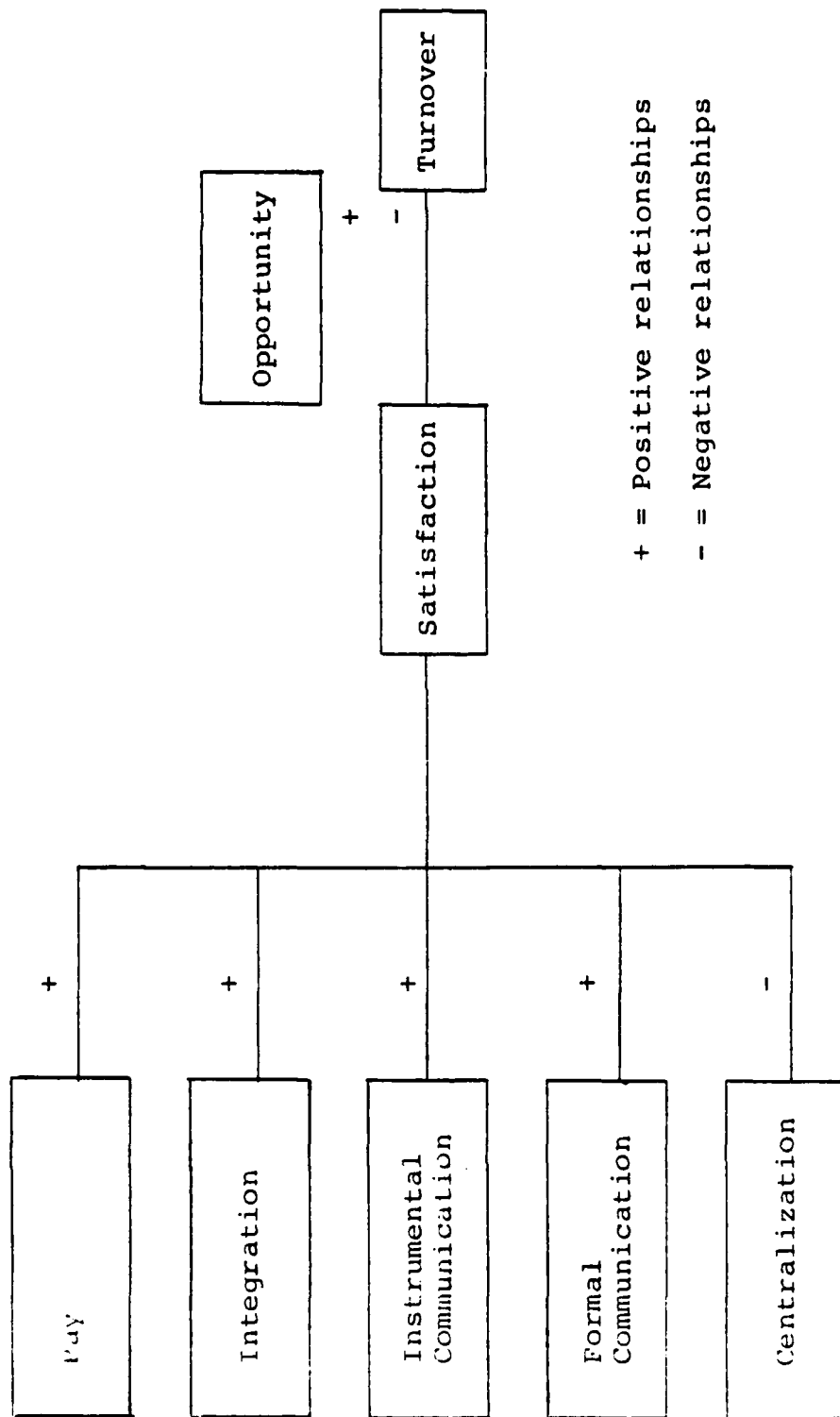


Fig. 4. Relationships Between the Determinants, Intervening Variables and Turnover (23:84)

According to Price, there are three conditions associated with high turnover: (1) members with low lengths of service usually have higher rates of turnover than members with high lengths of service, (2) younger members usually have higher rates of turnover than older members, and (3) periods with high levels of employment usually have higher rates of turnover than periods with low levels of unemployment (23:26).

Price identifies five strongly supported determinants that are believed to cause variations in turnover. The five factors are pay, integration, instrumental communication (formal communication and informal communication) and centralization (Figure 4) (23:68).

Price's first point is that pay is not equivalent to satisfaction with pay. Pay is an objective variable and satisfaction with pay is a subjective variable (23:68). The second point Price made was that higher amounts of integration of professional and personal relationships of the individual will probably produce lower amounts of turnover. Integration is the extent of participation in primary and/or quasi-primary relationships. A relationship is primary to the degree that it is diffused, emotionally involved, biased and governed by ascribed criteria. A quasi-primary relationship is the degree that it is specific, emotionally neutral, impartial and focuses on achieved criteria (23:71).

The third and fourth determinants are formal and informal communication. Communication is the degree to which information is transmitted among the members of a social system (23:79). Price makes the distinction of formal and informal communication on the basis of whether or not information is officially or unofficially transmitted.

Centralization is the fifth determinant. Price theorizes that successively higher amounts of centralization will probably produce successively higher amounts of turnover. According to Price, the maximum degree of centralization occurs when all the power reward is exercised by a single individual. Price identifies two reviews and one empirical study which confirm that people were less likely to leave if they are able to control, within reason, those matters which affect their performance (23:77).

Price uses two intervening variables. They are satisfaction, a social psychological variable, and opportunity, a structural variable, in his model. He defines satisfaction as "the degree to which the members of a social system have a positive affective system" (23:79). The dimensions of satisfaction found by Price are work, supervision, pay, promotion, and co-workers (23:79). He defines opportunity as "the availability of alternative roles in the environment" (23:81). Turnover occurs when dissatisfied

workers know that opportunity for other jobs outside of the organization is relatively high (23:83).

Price's turnover model is a valuable tool in understanding what factors are related to job satisfaction and what indicators to look for when job satisfaction is not present. Younger members with low lengths of service tend to be a more accurate indicator of job satisfaction because of their willingness to leave the organization. The career decisions of maintenance officers may provide an indication of job satisfaction. Pay, integration, formal communication, informal communication, and centralization are the five determinants of Price's turnover model. The two variables he uses to explain the model are satisfaction as a social psychological variable and opportunity as a structural variable.

#### Other Major Studies on Job Satisfaction

Positive leader reward behavior can lead to higher satisfaction. Keller and Szilagyi studied subordinate expectancies, leader reward behavior, and satisfaction (21:119). They found that positive leader reward (e.g., merit pay, increases, recognition or advancement in the organization) was causally related to high effort and performance expectancy as well as high satisfaction. Punitive leader reward (e.g., reprimand, dismissal or withholding of pay increases) was suggested to cause lower satisfaction

with work, supervision and lower overall satisfaction (21:119). Reity, in his research, found that negative rewards (withholding rewards) actually related to high satisfaction (21:120). Negative rewards cause the individual to become more satisfied because the individual knows what is expected.

According to Hulin and Smith, age and tenure have an effect on overall job satisfaction. Their research showed a positive, linear relationship of age to job satisfaction in males and tenure to job satisfaction in females. When the six facets of satisfaction (interesting work, promotion, supervision, working conditions, co-workers and salary) were examined, the relationship became more complex (18:690). Hulin and Smith emphasized that age, tenure and satisfaction were unlikely to be similarly interrelated under all conditions for all individuals (18:691).

A special work task force in a report Work in America: Report to a Special Task Force to the Secretary of Health, Education and Welfare, to the Secretary of Health, Education and Welfare reported that job satisfaction is strongly influenced by task autonomy and desired repetitive tasks. The task force also found that need of achievement/job desires had major influences on job satisfaction (26:38).

An increasing number of workers want more autonomy in performing their tasks, greater opportunity for

increasing their skills, rewards that are intrinsic aspects of work, greater participation in the design of work and the formulation of their tasks (26:13). To determine what aspects were important for workers, a survey of 1,533 workers at all occupational levels was conducted by the Survey Research Center with support from the Department of Labor. The workers ranked 25 aspects of work in order of importance to job satisfaction. The top eight aspects were:

1. Interesting work
2. Enough help and equipment to get the job done
3. Enough information to get the job done
4. Enough authority to get the job done
5. Good pay
6. Opportunity to develop special abilities
7. Job security
8. Seeing the results of one's work (26:13)

Porter and Steers found that knowing a person's intent to quit can be a predictor of whether a person will stay. Keller and Szilagyi determined that positive leader reward is related to high effort performance expectancy and satisfaction. Hulin and Smith showed a relationship of age to job satisfaction in males and tenure to job satisfaction in females. Autonomy, greater opportunity, intrinsic rewards and greater participation were identified as important to workers by a special task force on work in America.

Vroom, Galbraith, and Cummings

As shown in Figure 5, Victor H. Vroom developed the expectancy theory to explain how behavior can lead to desired rewards (25:405). The central concept of expectancy theory is that the force of an individual to exert a specific amount of effort is a function of: (1) his expectations that the effort will result in a specific outcome; and (2) the sum of valences, personal utilities or satisfactions he expects to derive from the outcome (17:481).

According to Vroom's theory, the function is a nonlinear monotonically increasing product of expectations and valences. A key aspect of Vroom's model, instrumentality, is the degree to which a person sees the outcomes in question as leading to the attainment of outcomes (17:482).

Operationally, Vroom's model implies that people will choose among alternative work-related actions in a manner which optimizes their expected valence (17:483).

First and second level outcomes are possible in the expectancy theory. First level outcomes result from the subject's effort with respect to task performance or accomplishment. Second level outcomes such as reward or punishment are the consequences to which the first level outcomes are expected to lead. The second level outcomes frequently depend on someone else such as a peer or subordinate (13:484).

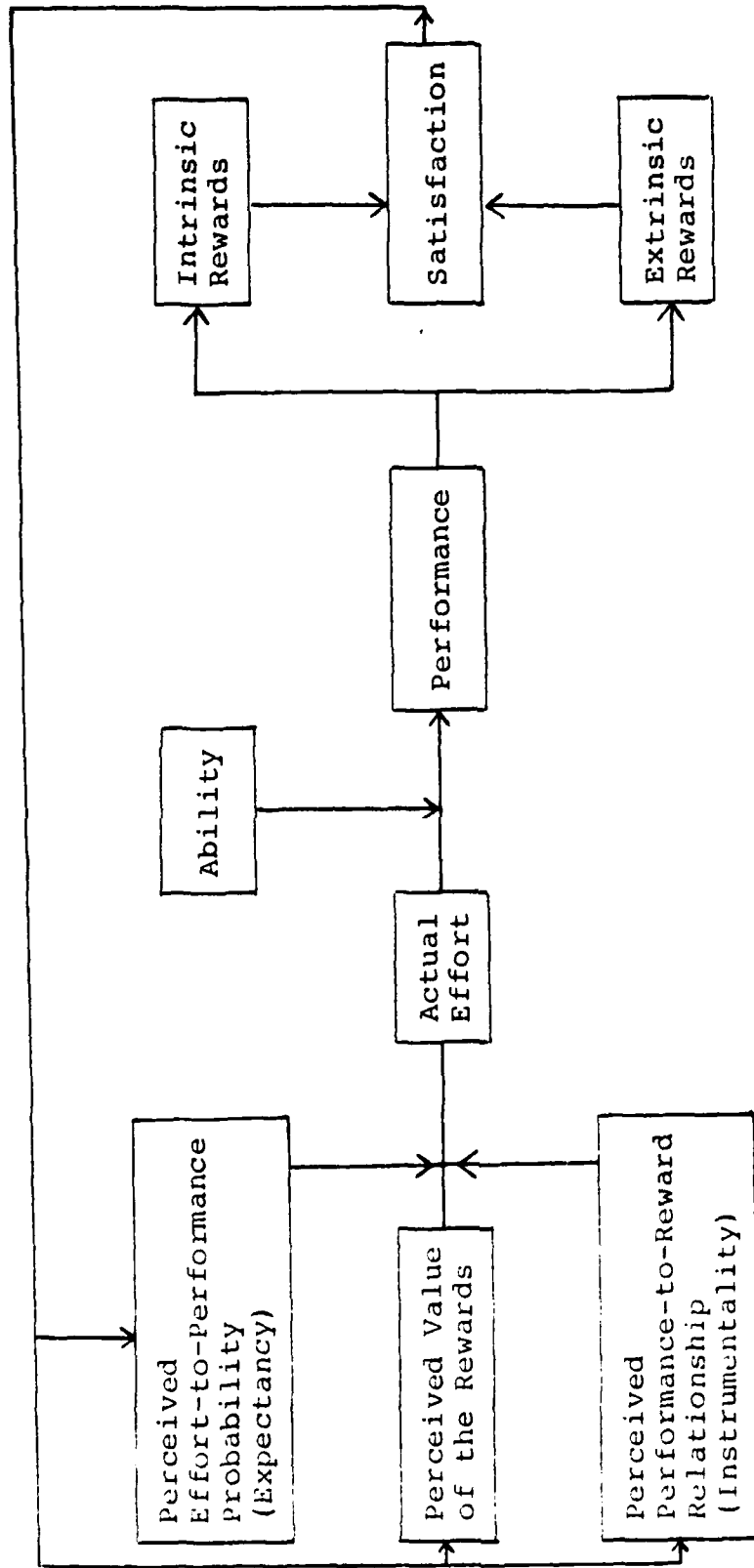


Fig. 5. Expectancy Theory of Motivation (25:406)



Galbraith and Cummings operationalized intrinsic valence by measuring the subject's ego involvement in their work and found that this measure added significantly to the multiple regression coefficient of performance of their subjects (13:484).

Galbraith and Cummings were the first to distinguish between intrinsic and extrinsic valence (13:500). The valences of such widely varied extrinsic rewards as working conditions, company practices, superior recognition, pay, peer acceptance and fringe benefits have been shown to be related to satisfaction and performance. The correlations range widely, from .11 to .721, and are highly inconsistent from study to study (17:501).

According to Galbraith and Cummings, an employee values intrinsic rewards more highly than extrinsic rewards because the employee does not have to depend upon others for them. Also, intrinsic rewards which lead to job satisfaction do not necessarily have to result in job effort or performance (17:502).

Galbraith and Cummings specified two kinds of intrinsic valences:

1. Intrinsic valences of behavior--those associated with task performance, such as the development of valued skill or social satisfaction involved in interpersonal tasks.

2. Intrinsic valences of accomplishment--those associated with task accomplishment such as pride in work or the satisfaction of achieving a challenging goal (17:484).

Galbraith and Cumming's findings are linked to Porter and Lawler's model of intrinsic and extrinsic rewards as well as Herzberg, Mausner, and Snyderman's satisfiers and dissatisfiers, and Price's turnover model concerning objective and subjective variables. Vroom's model reinforces the importance of these variables regarding job satisfaction.

#### Thesis Findings

Several studies within the last few years have explored different areas of job satisfaction. The focus of these efforts has been with the factors various authors felt influenced job satisfaction. A relevant part of this research was A Model of Aircraft Maintenance Officer Turnover by Captains Joanne M. Flanigan and Laurence J. R. Little, USAF.

Flanigan and Little found job satisfaction and the degree an individual perceives his job to be challenging, stimulating, requiring a variety of skills and knowledge, offering responsibility, and autonomy are the most significant factors affecting cross training. Five factors identified as comprising job satisfaction were job interest, peer group relations, job autonomy, promotion opportunity, and

supervisory style (9:112). In Turnover of Junior Officers, a study by Major Ronald Blackburn and Captain Randall L. Johnson, job autonomy was defined as one's "ability to assume responsibility and make his own decisions and formulate his own work goals and methods as fulfilling to his feeling of job satisfaction." A similar conclusion about job autonomy, the ability to be responsible, was echoed in the summary of results by Captain Samuel W. Fancher in his thesis, A Qualitative Analysis of Supervision in SAC Minuteman ICBM Maintenance. Fancher reported two supervisory problems. These were failure to allow responsible work to be performed and failure to give responsibility (job autonomy) (8:79).

Flanigan and Little found trust, friendliness and teamwork as being important contributors to job satisfaction among maintenance officers (9:113). They also felt the impact of peer relationships is more critical in maintenance than in other career fields (9:114). Blackburn and Johnson also found trust, friendliness and teamwork are viewed by junior officers as important contributors to job satisfaction (2:113).

Opportunities outside the organization and the lack of opportunity to cross train were two variables used to express an individual's lack of job satisfaction. Blackburn and Johnson confirmed that perceived opportunity for civilian employment was a significant intervening variable

between job satisfaction and expressed intention to make the Air Force as a career (2:94). At the four to five year point the relationship between job satisfaction and career intent appears to change (2:103,104). Flanigan and Little found that pay satisfaction at the eight year point had a dramatic effect on expressed intent to remain in the Air Force.

The opportunity to cross train out of aircraft maintenance is slim at best (9:116). Consequently, the chance to change jobs within the aircraft maintenance career field is linked to promotion and seen as a reward for past performance (9:115). The emphasis on promotion opportunity noted by Flanigan and Little was also found by Blackburn and Johnson. In their study, the authors concluded that "The chance to change jobs within their own career field is also linked to promotion and seen as reward for past performance" (9:114).

Several military studies provide some factors that help to explain job satisfaction. Flanigan and Little identified job interest, peer group relations, job autonomy, promotion opportunity and supervisory style as comprising the main elements of job satisfaction. Blackburn and Johnson, as well as Fancher, found job autonomy as a necessary factor of job satisfaction. Friendliness and teamwork were important contributors to job satisfaction. Opportunity for civilian employment and opportunity for promotion

appear to influence how satisfied a person is with his/her career.

These studies confirm that a list of factors defining the relevant variables relating to job satisfaction of maintenance officers must include advancement, work itself, relationships, communication, and task autonomy/centralization.

Air Force Regulation 66-1 and  
Air Force Regulation 66-5

The maintenance organizations within the Air Force now operate under Air Force Regulation (AFR) 66-1, Maintenance Management Policy, published in April 1984 (5). The new AFR 66-1 is the result of combining AFR 66-1, Maintenance Management Policy, dated 2 January 1980 and AFR 66-5, Production Oriented Maintenance Organization. The earlier AFR 66-1 defined a centralized maintenance management philosophy (17), and AFR 66-5 defined a decentralized maintenance management philosophy (21).

The philosophy of the earlier AFR 66-1 was based on a centralized maintenance management structure. AFR 66-1 maintenance organizations provided system support specialists for actions under central direction and control (5:1-2). The regulation was organized to support those maintenance actions which are beyond the limits of the unit's personnel skills, human resources, tools, or time available (5:1-2). The maintenance organization was divided

into squadrons that were directly controlled by the Deputy Commander for Maintenance (DCM) staff agencies (Figure 6).

The organizational structure required centralized scheduling of maintenance tasks, priority assignment of jobs, dispatch of personnel and control of the overall maintenance operation by maintenance control and job control (5:1-1). The direction of maintenance personnel was controlled by staff agencies and provided almost no real lower level maintenance manager control of maintenance personnel or the priorities of work assignments for on-equipment maintenance. The management of maintenance production was centrally controlled. Maintenance control and quality control staff functions were assigned the responsibility for management of the quantity and quality of maintenance production (5:1-2). The job control function was specifically responsible for monitoring and directing maintenance actions and kept the current status of specialist availability on specialist status boards (5:1-2). A specialist is an enlisted person in the grade of airman through chief master sergeant performing technical duties. Specialists were not to perform on-equipment maintenance unless job control authorized it.

The philosophy of AFR 66-5 was a decentralized maintenance management structure. The AFR 66-5 policy "objective was to give authority and flexibility to maintenance managers to perform their assigned responsibilities" (7:1-1).

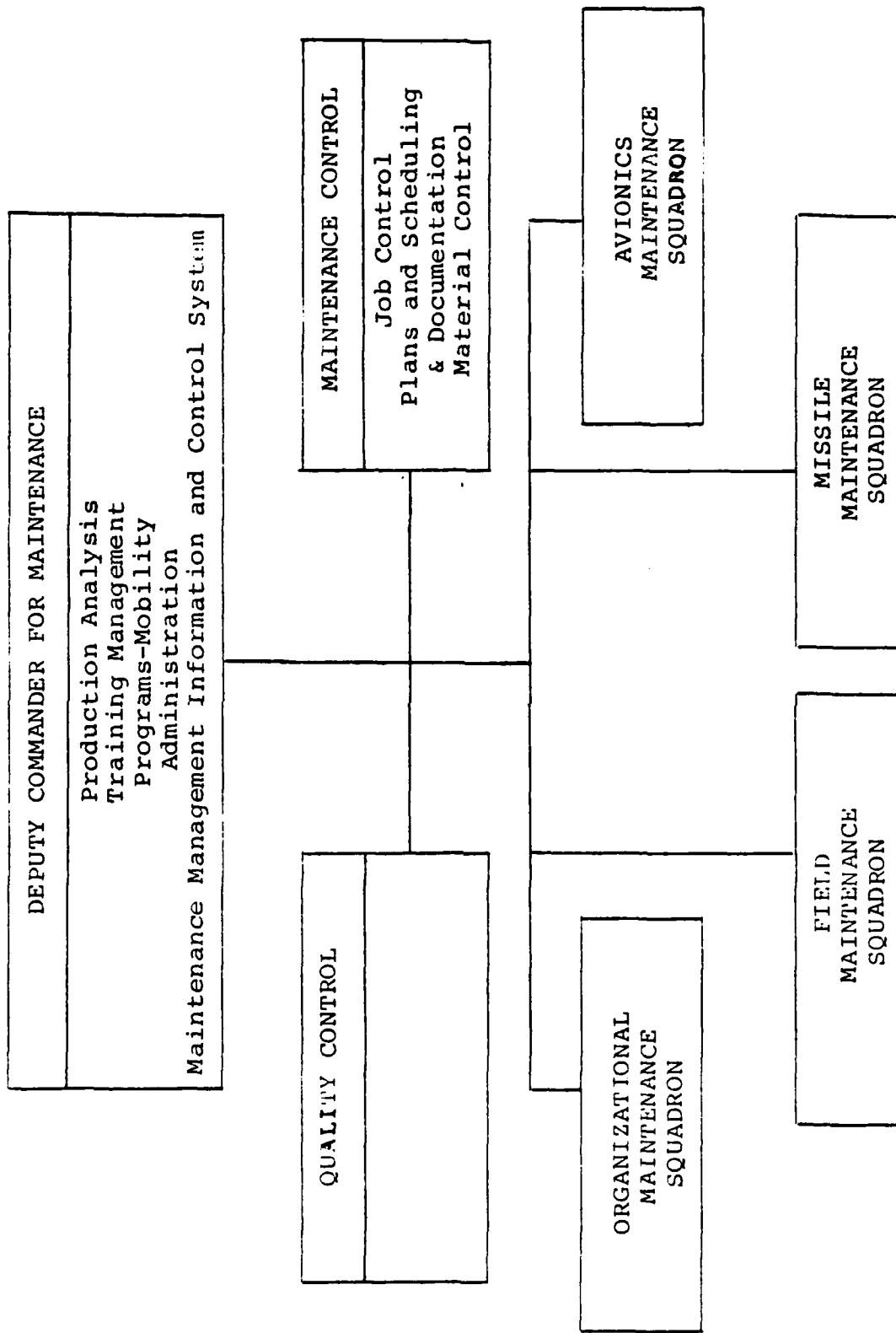


Fig. 6. AFR 66-1 Centralized Maintenance Organization (5:2-4)

To support this philosophy, the organization was divided into squadrons not directly controlled by the DCM staff agencies (Figure 7). In contrast to AFR 66-1, AFR 66-5 stated that "the maintenance control and quality assurance divisions are responsible to measure the quantity and quality of maintenance production" (7:2-3). The justification for this concept was:

High sortie rates, operations from remote locations and large numbers of aircraft dictate a departure from the centralized maintenance concept. These factors require a complete reorganization of people and the decentralization of decision making. The key to this philosophy is the organization of people and equipment into direct and indirect sortie producing elements. The Aircraft Generation Squadron (AGS) is provided the people, material and decision making authority to meet the unit direct sortie requirements whether in peace or in combat [7:1-1].

Managers at the squadron level were tasked with the management of the quality and quantity of maintenance production. To meet maintenance production, the maintenance complex was functionally organized and decision making was decentralized to the lowest practical level (7:1-1). As a result, the job control function was to coordinate and direct maintenance as necessary to meet mission requirements (7:3-1). This approach gave the squadron supervisors a more responsible role in controlling what needed to be done, when to do it, and what resources would be used.

Both maintenance philosophies are valuable because they recognize the different environments of the operational commands. The centralized approach of AFR 66-1 allows for



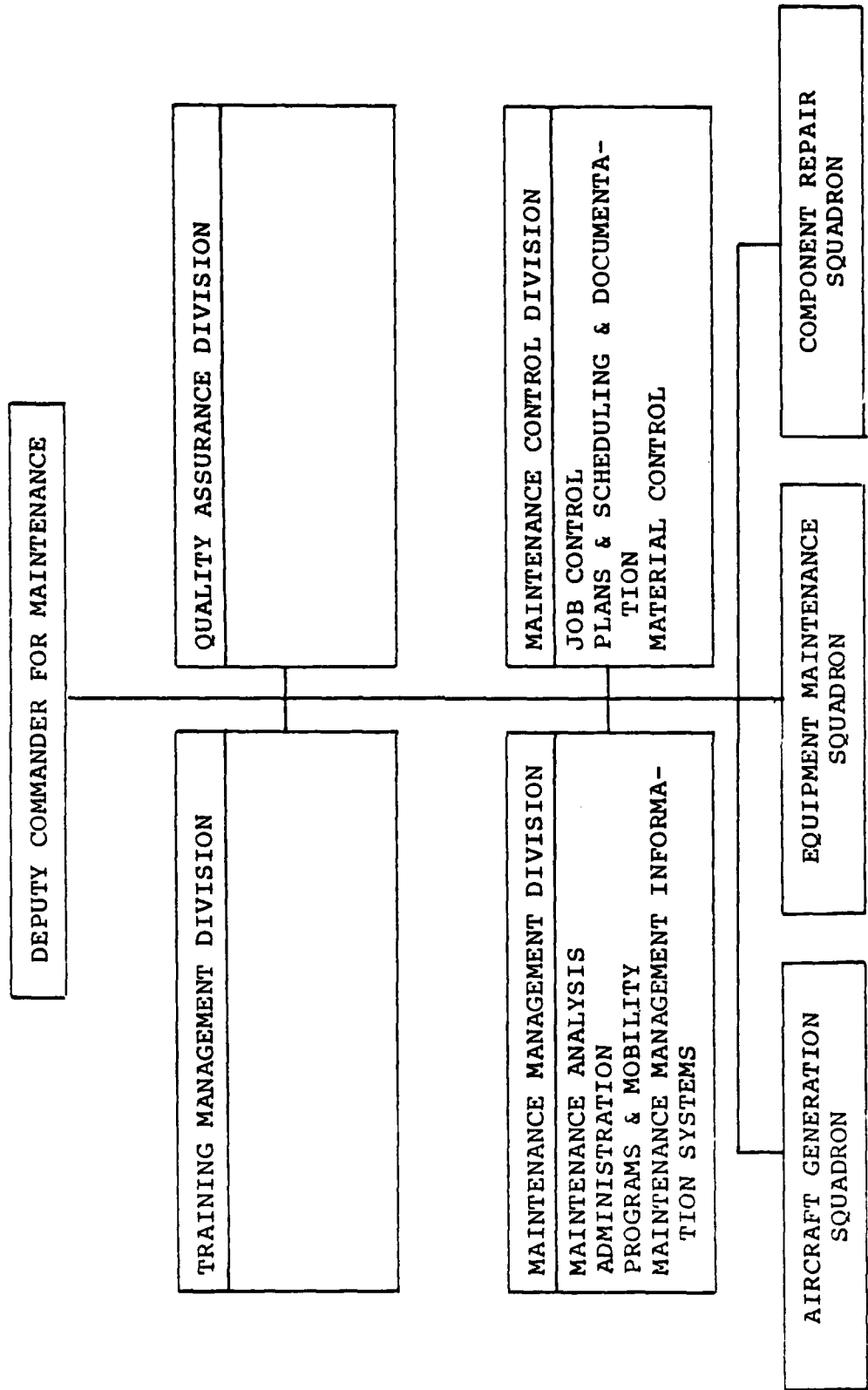


Fig. 7. AFR 66-5 Decentralized Maintenance Organization (7:1-11)

efficient use of limited resources and a central focal point for decisions. The decentralized approach of AFR 66-5 allows decisions to be made at lower levels and provides a higher degree of task autonomy.

According to Price, Flanigan and Little, Blackburn and Johnson, Fancher, and Work in America: Report to a Special Task Force to the Secretary of Health, Education and Welfare, the maintenance officer assigned to decentralized maintenance organizations should have higher job satisfaction because that officer has higher task autonomy. If there is a difference in the job satisfaction of maintenance officers in centralized and decentralized maintenance organizations, task autonomy appears to be one of the strongest possible indicators.

According to Porter and Lawler, and Work in America: Report to a Special Task Force to the Secretary of Health, Education and Welfare, the maintenance officer assigned to decentralized maintenance organizations should have higher job satisfaction because that officer has a higher involvement level in the organization's level of achievement. This results from the individual feeling more responsible for and being able to better control the production of the unit.

According to Herzberg, Mausner and Snyderman, and Flanigan and Little, the maintenance officer assigned to decentralized maintenance organizations should have higher job satisfaction because of the work itself. This results

from the individual feeling more responsible for the outcomes of the unit.

According to Porter and Lawler, and Hackman, Oldham and Jansen, and Work in America: Report to a Special Task Force to the Secretary of Health, Education and Welfare, the maintenance officer assigned to decentralized maintenance organizations should have higher job satisfaction because of task significance. Higher satisfaction results because the individual feels the task is significant and he has the power and status to control it.

According to Price, and Galbraith and Cummings, and Flanigan and Little, the maintenance officer assigned to decentralized maintenance organizations should have higher job satisfaction because of communication. Higher satisfaction results because the structure of the organization allows communication of an individual's decisions to be made at lower levels so there is less interference in the number of people who have to communicate a decision.

According to Price, and Galbraith and Cummings, and Flanigan and Little, the maintenance officer assigned to decentralized maintenance organizations should have higher job satisfaction because of relationships. The relationships of officers as responsible managers should be stronger because of the increased decision-making authority. According to Herzberg, Mausner and Snyderman, and Galbraith and Cummings, the maintenance officer assigned to decentralized

maintenance organizations should have higher job satisfaction because of recognition. The increased decision-making authority of the individual is higher, and therefore the increase in responsibility for decisions would allow more opportunities for recognition. The pay scales and promotion systems of aircraft maintenance officers are the same and should present no significant difference in job satisfaction because of maintenance concepts.

### Summary

This review of the literature has revealed some uncertainty concerning the causes of job satisfaction. Job satisfaction has no precise causal factors that can be readily identified or applied equally in every case. Porter and Lawler's expectancy theory is a useful tool in developing a theoretical model that defines how satisfaction is achieved. Herzberg, Mausner and Synderman used two levels of factors: the first level was objective; the second level was subjective. Hackman, Oldham, Jansen and Purdy proposed three psychological states (experienced meaningfulness, experienced responsibility and knowledge of results) to determine a person's motivation and satisfaction on the job. They also identified skill variety, task identity, task significance, increased personal responsibility and feedback as five core job dimensions that make a job meaningful for the worker. Price identified five

strongly supported determinants (pay, integration, formal communication, informal communication and centralization) that used satisfaction as a social psychological variable. Other works showed how job satisfaction or dissatisfaction is related to turnover, how leadership has a large influence on satisfaction, and how age and tenure can be related to satisfaction.

A comparison of the job satisfaction of maintenance officers working under two separate maintenance concepts requires the use of variables that have consistently related to job satisfaction in other research efforts. The nine factors that recur in the literature are achievement, advancement, work itself, task significance, relationships, communications, task autonomy, promotion, and pay (Figure 8). These factors are linked to job satisfaction (Figure 9) and provide a valid measurement with which to answer the research question.

The maintenance management concepts of centralization and decentralization are different because of the MAJCOM's unique mission requirements. The literature indicates that if job satisfaction is higher in decentralized maintenance organizations, then achievement, advancement, work itself, task significance, relationships, communications, and task autonomy should also be higher in a decentralized maintenance management organization. Pay is the same for all maintenance officers of equal grade. Promotion potential may or may not be the same.

	Porter and Lawler	Herzberg, Mausner and Snyderman	Hackman, Oldham and Jansen	Price	Hulin and Smith	Report to Sec. of HEW	Galbraith and Cummings	Flanigan and Little	Blackburn and Johnson	Fancher	Frequency
Achievement	X					X					2
Power & Status Task Significance	X	X	X			X					4
Pay or Income	X		X			X	X				4
Advancement	X	X						X			3
Work Itself		X				X		X			3
Relationships				X			X	X			3
Feedback Communication			X	X		X		X			4
Task Autonomy and Centralization				X		X		X	X	X	5
Recognition		X					X				2
Self-Actualization	X										1
Skill Variety			X								1
Task Identity			X								1
Job Satisfaction		X									1
Fringe Benefits							X				1
Age					X						1
Tenure					X						1
Job Security						X					1
Working Conditions							X				1
Company Practices							X				1

Fig. 8. Elements of Job Satisfaction

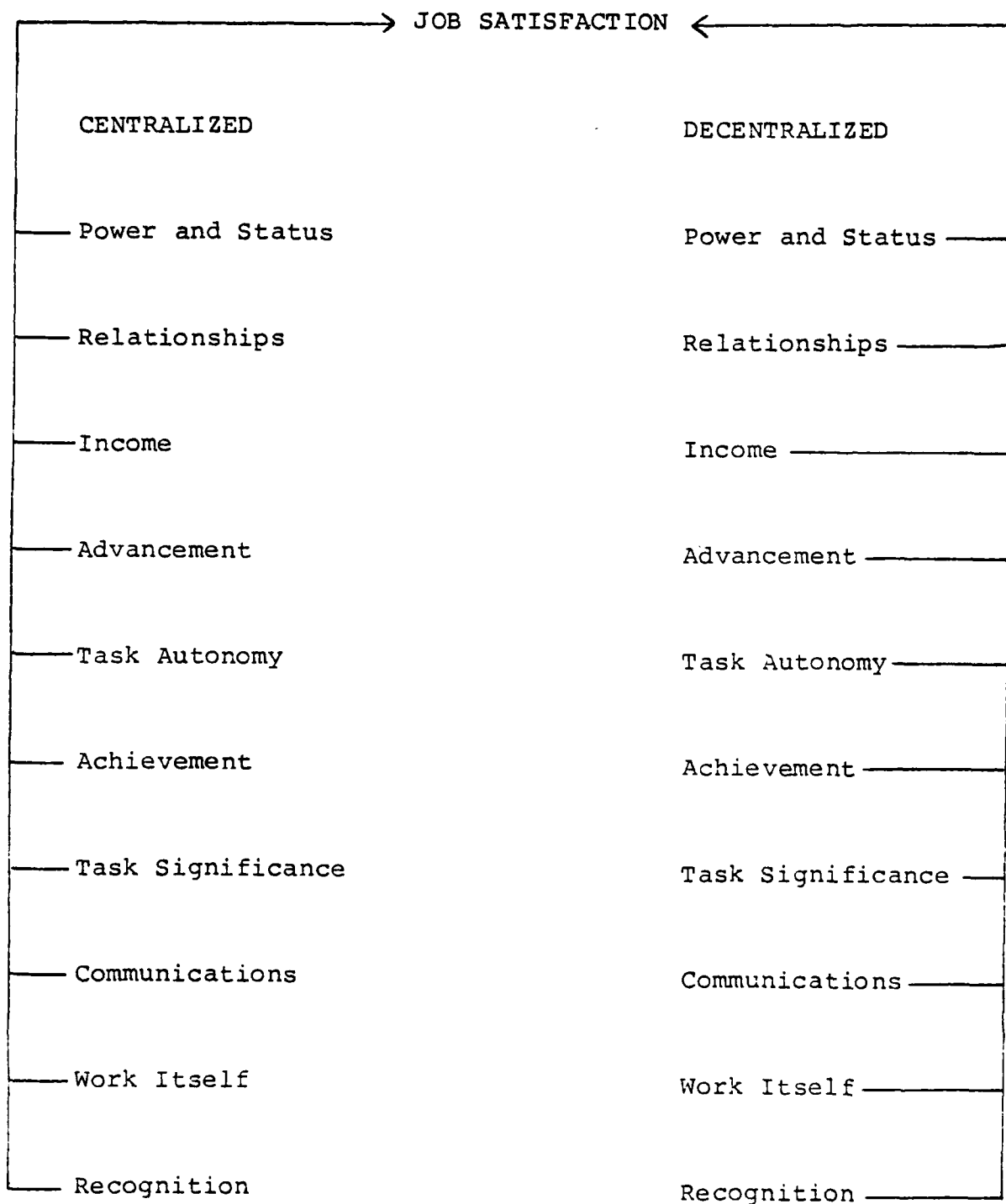


Fig. 9. Original Job Satisfaction Factors Selected

### III. Methodology

#### Overview

This chapter presents the research design and methodology used to answer the research questions. The data gathering plan with its assumptions and limitations will be presented first. It is followed by definitions of the variables from the Organizational Assessment Package (OAP) survey and the data analysis plan.

#### Data Gathering Plan

Data Collection Instrument. The data collection instrument used in the survey is the Organizational Assessment Package (OAP) survey. The OAP survey consists of a 109-question survey used by the Leadership and Management Development Center (LMDC). The OAP survey consists of demographic data, and 21 statistical factors derived from a set of attitudinal items covering areas such as supervision, communications, and performance within the organization (1:1).

The response values to the survey statements range from 1, indicating disagreement or dissatisfaction, to 7, indicating a high level of agreement or satisfaction (1:1).



Survey Bias. Three work groups which were unique organizations wherein respondents holding the AFSCs surveyed would probably not be performing the duties ascribed to that AFSC were eliminated. For example, headquarters positions were eliminated so data reflected only maintenance officers at unit level.

Instrument Validity and Reliability. The OAP has been used for a number of years to evaluate many aspects of the health of Air Force life. The validity and reliability of the instrument is assumed because past studies have obtained valid analytical results (12; 15; 16).

Description of the Sample. The sample is based on surveys taken from Fiscal Year (FY) 1981 through FY 1985 as presented in Table 2. The sample is drawn as a result of the process of different commanders in the field requesting assistance. There were a total of 198 maintenance officers who responded to the OAP survey. Of the 198 officers, 69 officers worked in centralized organizations and 129 worked in decentralized organizations. The sample consists of Air Force Aircraft and Munitions Maintenance Officers, Air Force Specialty Codes (AFSC) 4024, 4054, 4021 and 4051 (1). Individuals holding 4021 and 4051 AFSC for less than six months were eliminated. Three work groups which were unique organizations wherein respondents holding the AFSCs would probably not perform duties ascribed

TABLE 2  
NUMBER OF RESPONDENTS BY MAINTENANCE ORGANIZATION (1)

Centralized	
Fiscal Year	Number of Respondents
81 . . . . .	12
82 . . . . .	26
83 . . . . .	6
84 . . . . .	18
85 . . . . .	7
Total . . . . .	69

Decentralized	
Fiscal Year	Number of Respondents
81 . . . . .	36
82 . . . . .	20
83 . . . . .	18
84 . . . . .	34
85 . . . . .	21
Total . . . . .	129

to that AFSC were eliminated. The officers who responded to the OAP survey are maintenance officers in units that had requested Air Force leadership and management consultation services.

The sample includes male and female maintenance officers (Table 3) ranging from 22 to more than 45 years of age (Table 4). The number of years in the Air Force ranged from less than 1 year through more than 12 years (Table 5), while the months in the present career field ranged from 6 months through more than 36 months (Table 6). The sample included representation of the more popular groups found in the military organizations (Table 7). The sample contained personnel whose education ranged from more than two years of college up to and including master's degrees (Table 8). The highest Professional Military Education completed ranged from none to Senior Service School graduates (Table 9).

The sample ranged from personnel with no supervisory responsibilities to supervisors of nine or more subordinates (Table 10). Work schedules varied from stabilized day shifts to irregular schedules (Table 11). Rated officers (pilots and navigators) in maintenance jobs and nonrated maintenance officers were included (Table 12). Career intentions varied from individuals making the Air Force a career to individuals definitely not making the Air Force a career (Table 13).

TABLE 3  
SEX OF RESPONDENTS (1)

Sex	Frequency
Male . . . . .	149
Female . . . . .	49

TABLE 4  
AGE OF RESPONDENTS (1)

Age	Frequency	Age	Frequency
22 . . . . .	2	34 . . . . .	12
23 . . . . .	3	35 . . . . .	10
24 . . . . .	6	36 . . . . .	8
25 . . . . .	16	37 . . . . .	4
26 . . . . .	17	38 . . . . .	7
28 . . . . .	19	39 . . . . .	2
29 . . . . .	17	40 . . . . .	1
30 . . . . .	15	41 . . . . .	3
31 . . . . .	9	42 . . . . .	1
32 . . . . .	17	Missing . . . . .	2
33 . . . . .	12		

TABLE 5

## RESPONDENTS' NUMBER OF YEARS IN THE AIR FORCE (1)

Value	Frequency
Less than 1 year . . . . .	3
More than 1 year, less than 2 years . . . . .	13
More than 2 years, less than 3 years . . . . .	25
More than 3 years, less than 4 years . . . . .	24
More than 4 years, less than 8 years . . . . .	53
More than 8 years, less than 12 years . . . . .	43
More than 12 years . . . . .	37

TABLE 6

## RESPONDENTS' NUMBER OF YEARS IN PRESENT CAREER FIELD (1)

Value	Frequency
More than 6 months, less than 12 months . . . . .	20
More than 12 months, less than 18 months . . . . .	14
More than 18 months, less than 24 months . . . . .	24
More than 24 months, less than 36 months . . . . .	36
More than 36 months . . . . .	104

TABLE 7

## RESPONDENTS' ETHNIC GROUP (1)

Value	Frequency
American Indian or Alaskan Native . . . . .	3
Asian or Pacific Islander . . . . .	1
Black, not of Hispanic Origin . . . . .	17
Hispanic . . . . .	6
White, not of Hispanic Origin . . . . .	166
Other . . . . .	5

TABLE 8  
RESPONDENTS' EDUCATION LEVEL (1)

Value	Frequency
Two years or more of college . . . . .	1
Bachelor's Degree . . . . .	147
Master's Degree . . . . .	50

TABLE 9  
RESPONDENTS' PROFESSIONAL MILITARY EDUCATION LEVEL (1)

Value	Frequency
None or not applicable . . . . .	2
NCO Orientation Course or USAF Supervisor Course (NCO Phase 1 or 2) . . . . .	4
NCO Academy . . . . .	5
Squadron Officers School . . . . .	85
Intermediate School (i.e., ACSC, AFSC) . . . . .	16
Senior Service School (i.e., AWC, ICAF, NWC) . . . . .	1
Missing . . . . .	85

TABLE 10  
RESPONDENTS' SUPERVISORY RESPONSIBILITY (1)

Value	Frequency
None . . . . .	24
1 . . . . .	21
2 . . . . .	12
3 . . . . .	17
4 to 5 . . . . .	29
6 to 8 . . . . .	21
9 or more . . . . .	67
Missing . . . . .	7

TABLE 11  
RESPONDENTS' WORK SCHEDULE (1)

Schedule	Frequency
Day shift, normally stable hours . . . . .	113
Swing shift (about 1600-2400) . . . . .	3
Rotating shift schedule . . . . .	7
Day shift work with irregular/unstable hours . . . . .	63
Frequent TDY/travel or frequently on-call to report to work . . . . .	11
Missing . . . . .	1

TABLE 12  
RESPONDENTS' AERONAUTICAL RATING (1)

Rating	Frequency
Nonrated, not an aircrew . . . . .	189
Rated in support job . . . . .	7
Missing . . . . .	2

TABLE 13  
RESPONDENTS' CAREER INTENTIONS (1)

Career Intentions	Frequency
Definite career . . . . .	97
Likely career . . . . .	39
Uncertain . . . . .	37
Likely not career . . . . .	16
Definite not career . . . . .	9

Inferences about the Population. Inferences will be made only for the Air Force population from which the data was collected. No inferences will be made from the sample to Air Force personnel in general or to officers in positions similar to those excluded from this analysis due to the unique nature of their assignments. Caution should be used in making any generalizations from the sample as a result of the data collection methods used by LMDC. The data were collected as a result of commanders' requests for consultation. The data are drawn from centralized (MAC, SAC, ATC, AFSC) and decentralized (TAC, USAFE, PACAF, AAC) maintenance organizations and no conclusion as to the job satisfaction of maintenance officers within specific major commands should be made.

Assumptions and Limitations

The following assumptions have been made on the literature review, survey data, and statistical analysis technique used.

1. The data-producing instrument is valid and reliable.
2. The questions used for variable measurement are valid and reliable.
3. The respondents answered honestly.



## Variable Definitions

1. Job Satisfaction (factor 822). Job satisfaction is the dependent variable of the synthesized model in Figure 10. Job satisfaction factors investigated using OAP factors are provided in Figure 11. Satisfaction is defined as "the extent to which rewards actually received meet or exceed the perceived equitable levels of rewards" (19:31).

2. Task Significance/Power and Status (factors 802, 811, 812, 825). Task significance, an independent variable, is defined as the degree to which the job has a substantial and perceivable importance for the individual and is synonymous with power and status as it is used in this model.

3. Relationships (factor 824). Relationships, an independent variable, are defined as the interpersonal relations of the superior, subordinate, and peers with the individual.

4. Income. Income or pay, an independent variable, is defined as the failure of the worker to receive a fair salary (8:82,83). This factor was not available from the OAP and was assumed to be equal in a military environment where a set pay structure exists.

5. Advancement (factor 817). Advancement, an independent variable, is defined as simply being promoted.

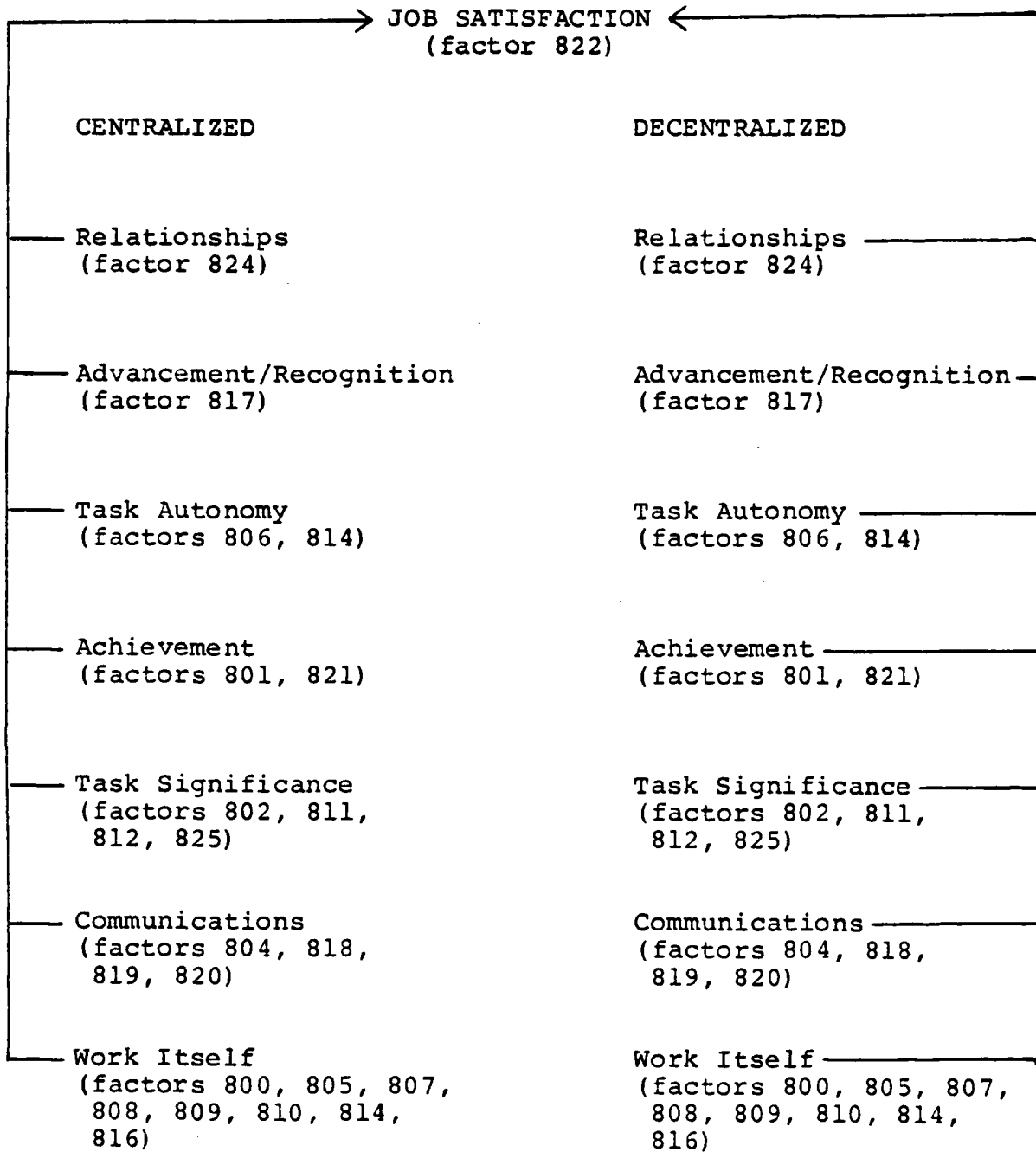


Fig. 10. Revised Job Satisfaction Factors Investigated

	<u>Variable</u>	<u>Statistical Factor</u>	
1.	10	800	Skill Variety
2.	7	801	Task Identity
3.	8	802	Task Significance
4.	9	804	Job Feedback
5.	10	805	Work Support
6.	6	806	Need for Enrichment Index (Job Desires)
7.	10	807	Job Motivation Index
8.	10	808	OJI Total Score
9.	10	809	Job Motivation Index-Additive
10.	10	810	Job Performance Goals
11.	8	811	Pride
12.	8	812	Task Characteristics
13.	6	813	Task Autonomy
14.	10	814	Work Repetition
15.	5	816	Desired Repetitive Easy Tasks
16.	9	817	Advancement/Recognition
17.	9	818	Management-Supervision
18.	9	819	Supervisory Communications Climate
19.	9	820	Organizational Communications Climate
20.	7	821	Perceived Productivity
21.	1	822	Job Satisfaction
22.	3	824	General Organizational Climate
23.	8	825	Motivating Potential Score

Fig. 11. OAP Factors

Due to OAP questioning techniques this was combined with recognition.

6. Task Autonomy (factors 806, 804). Task autonomy, an independent variable, is defined as "the degree to which the job provides freedom to do the work as one sees fit; discretion in scheduling, decision making and means for accomplishing the job" (17:2).

7. Achievement (factors 801, 821). Achievement is indicated as one of the strongest determinants of job satisfaction according to Herzberg (8:59). Achievement, an independent variable, is defined as the satisfaction received from the successful completion of a job and includes its opposite, failure, and the absence of achievement (8:59; 9:194).

8. Communication (factors 804, 818, 819, 820). Communication, an independent variable, is defined as the degree to which information is transmitted to the individual (20:79).

9. Work Itself (factors 800, 805, 807, 808, 809, 810, 814, 816). Work itself, an independent variable, is the aspect of work that is the respondent's feeling of good or bad about the job (8:48). The characteristics are challenging work, varied work, and an opportunity to do a job completely (8:61).

10. Recognition (factor 817). Recognition, an independent variable, is some act of notice, praise or blame (8:44).

#### Data Analysis Plan

Discriminant Analysis. Discriminant analysis was used in this thesis to analyze the data provided by LMDC. Use of discriminant analysis allowed observations to be assigned in some optimum fashion to one of several populations.

Discriminant analysis is a statistical technique in which linear combinations of variables are used to distinguish between two or more groups of cases (24:623). The discriminant function is developed by constructing a linear compound or index for summarizing observations on a one-dimensional scale that discriminates between the populations by some measure of maximal separation (20:231). The Statistical Package for the Social Sciences (SPSS) X DISCRIMINANT subprogram was used to construct the discriminant function. A linear discriminant function was constructed by using a stepwise selection of variables. The number of discriminant functions is equal to one less than the smaller of the number of groups or the number of variables.

The discriminant function is used to classify all cases or only those cases for which group membership is

unknown (24:623). The discriminant subprogram provides a classification table which reports the number of cases processed (Table 14). The number of cases processed is further classified as either cases used in the analysis or cases excluded from the analysis due to a missing discriminant variable.

TABLE 14  
CASES PROCESSED (1)

	Unweighed	Weighed
Centralized Maintenance Organization Cases . . . . .	21	21
Decentralized Maintenance Organization Cases . . . . .	36	36
Total Cases Analyzed . . . . .	57	57
Cases Excluded for Missing Discriminant Variables . . . . .	59	59
Total Cases Processed . . . . .	116	116

#### IV. Results of Research

The results presented in this chapter are the data analysis of the SPSS X DISCRIMINANT subprogram output of the OAP factors used in this study. The program used to obtain the results in this chapter is included as Appendix D.

The minimum tolerance that variables must pass to enter was 0.00100. A variable will not be entered if it will not contribute significantly to the analysis. Two OAP factors that failed to meet the minimum tolerance test were task characteristics (factor 812) and motivating potential score (factor 824) (Table 15).

TABLE 15  
MINIMUM TOLERANCE TEST (1)

OAP Factors	Minimum Tolerance
Task Characteristics . . . . .	.0000053
Motivating Potential Score . . . . .	.0007281

The job satisfaction and the factors related to job satisfaction of maintenance officers in centralized and decentralized maintenance organizations are not significantly different. The reported significance level of the discriminant analysis was 0.5462 and therefore was not

significant at the 1.0 level. Further proof of there being no significant difference was a reported Chi-squared value of 21.572 being less than the critical value of 35.2 with 23 degrees of freedom at alpha of .05 (20:366).



V. Conclusions and Recommendations for  
Further Research

Conclusions

The research objective was accomplished by analyzing the data using statistical procedures to discriminate between maintenance officers assigned to centralized maintenance organizations and those assigned to decentralized maintenance organizations. The literature indicates that because AFR 66-5 defines a decentralized maintenance organization, a maintenance officer would have more job satisfaction in a decentralized maintenance organization. Using discriminant analysis the author could not reject the null hypothesis that the job satisfaction and the job satisfaction factors of both are the same. It should be noted that 59 of the 116 cases were excluded from this analysis because they were missing at least one discriminating variable.

The job satisfaction of maintenance officers assigned to centralized maintenance organizations is not significantly different from the job satisfaction of maintenance officers assigned to decentralized maintenance organizations. The findings support the hypothesis that maintenance officers appear to be equally satisfied in both maintenance organizations.

The relationships of maintenance officers assigned to centralized maintenance organizations are not significantly different from the relationships of maintenance officers assigned to decentralized maintenance organizations. The findings support the hypothesis that the relationships appear to be equally strong for the individual.

The perceived recognition of maintenance officers assigned to centralized maintenance organizations is not significantly different from the recognition of maintenance officers assigned to decentralized maintenance organizations. The findings support the hypothesis that the efforts of the maintenance officer appear to be equally recognized.

The task autonomy of maintenance officers assigned to centralized maintenance organizations is not significantly different from the task autonomy assigned to maintenance officers assigned to decentralized maintenance organizations. The findings support the hypothesis that maintenance officers have failed to achieve increased task autonomy under a decentralized maintenance organization. The Air Force goal of perceived increased task autonomy has not yet been achieved for all maintenance officers.

The task significance of maintenance officers assigned to centralized maintenance organizations is not significantly different from the task significance of maintenance organizations. Factors 812 and 825 were not used

in the model because the factors did not meet the minimum tolerance level and therefore would not contribute significantly to the model. The findings support the hypothesis that the task significance has the same importance for the maintenance officers assigned to centralized and to decentralized maintenance organizations.

The communication of maintenance officers assigned to centralized maintenance organizations is not significantly different from the communication of maintenance officers assigned to decentralized maintenance organizations. The findings support the hypothesis that there appears to be no difference in the amount of communication that takes place in the two types of maintenance organizations.

The work itself in centralized maintenance organizations is not significantly different from the work itself in decentralized maintenance organizations. The findings support the hypothesis that maintenance officers in centralized maintenance organizations and decentralized maintenance organizations share the same perceptions that the work itself is challenging, varied and provides the same opportunity to do a job completely.

The challenges of the job appear to be equal for the maintenance officers assigned to centralized maintenance organizations and is not significantly different from the challenges of maintenance officers in

decentralized maintenance organizations as the maintenance officers receive equal intrinsic rewards as Porter and Lawler had predicted. Another possible explanation is that those maintenance officers working in centralized and decentralized maintenance organizations have been nurtured by that type of organization and as a result feel they have adequate challenges, opportunities and autonomy. The findings support the hypothesis that there are no differences in the challenges for maintenance officers assigned to centralized and to decentralized maintenance organizations.

#### Recommendations for Further Research

A difference in the job satisfaction of maintenance officers in centralized and decentralized maintenance organizations could not be determined. The data base available from the LMDC would permit further research to determine if enlisted personnel in centralized and decentralized maintenance organizations have differences in job satisfaction.

Further research would dispel or support beliefs of those who feel that changing the organization's maintenance management organizational structures will result in increased job satisfaction.

Appendix A: Organizational Assessment Package

PRIVACY ACT STATEMENT

In accordance with paragraph 30, AFR 12-35, The Air Force Privacy Act Program, the following information about this survey is provided:

a. Authority: 10 U.S.C., 8012, Secretary of the Air Force: Powers and Duties, Delegation by Compensation E.O. 9397, 22 Nov 43, Numbering System for Federal Accounts Relating to Individual Persons.

b. Principal Purpose: The survey is being conducted to assess your organization from a leadership and management perspective.

c. Routine Uses: Information provided by respondents will be treated confidentially. The averaged data will be used for organizational strength and weakness identification and Air Force wide research and development purposes.

d. Participation: Response to this survey is voluntary. Your cooperation in this effort is appreciated.

(PLEASE DO NOT TEAR, MARK ON, OR OTHERWISE DAMAGE THIS BOOKLET)

## INSTRUCTIONS

1. All statements may be answered by filling in the appropriate spaces on the response sheet provided. If you do not find a response that fits your case exactly, use the one that is the closest to the way you feel.

2. Be sure that you have completed Section 1 of the response sheet, as instructed by the survey administrator, before beginning Section 2.

3. Please use the pencil provided, and observe the following:

--Make heavy black marks that fill the spaces.

--Erase cleanly any responses you wish to change.

--Make no stray markings of any kind on the response sheet.

--Do not staple, fold or tear the response sheet.

--Do not make any markings on the survey booklet.

4. The response sheet has a 0-7 scale. The survey statements normally require a 1-7 response. Use the zero (0) response only if the statement truly does not apply to your situation. Statements are responded to by marking the appropriate space on the response sheet as in the following example:

Using the scale below, evaluate the sample statement.

1 = Strongly disagree

2 = Moderately disagree

3 = Slightly disagree

4 = Neither agree nor disagree

5 = Slightly agree

6 = Moderately agree

7 = Strongly agree

Sample Statement. The information your work group receives from other work groups is helpful.

If you moderately agree with the sample statement, you would blacken the oval (6) on the response sheet.

Sample Response:            NA  
(0) (1) (2) (3) (4) (5) (6) (7)

5. When you have completed the survey, please turn in the survey materials as instructed in the introduction.

## BACKGROUND INFORMATION

This section of the survey concerns your background. The information requested is to insure that the groups you belong to are accurately represented and not to identify you as an individual. Please use the separate response sheet and darken the oval which corresponds to your response to each question.

1. Total years in the Air Force:
  1. Less than 1 year.
  2. More than 1 year, less than 2 years.
  3. More than 2 years, less than 3 years.
  4. More than 3 years, less than 4 years.
  5. More than 4 years, less than 8 years.
  6. More than 8 years, less than 12 years.
  7. More than 12 years.
  
2. Total months in present career field.
  1. Less than 1 month.
  2. More than 1 month, less than 6 months.
  3. More than 6 months, less than 12 months.
  4. More than 12 months, less than 18 months.
  5. More than 18 months, less than 24 months.
  6. More than 24 months, less than 36 months.
  7. More than 36 months.
  
3. Total months at this station:
  1. Less than 1 month.
  2. More than 1 month, less than 6 months.
  3. More than 6 months, less than 12 months.
  4. More than 12 months, less than 18 months.
  5. More than 18 months, less than 24 months.
  6. More than 24 months, less than 36 months.
  7. More than 36 months.
  
4. Total months in present position:
  1. Less than 1 month.
  2. More than 1 months, less than 6 months.
  3. More than 6 months, less than 12 months.
  4. More than 12 months, less than 18 months.
  5. More than 18 months, less than 24 months.
  6. More than 24 months, less than 36 months.
  7. More than 36 months.

5. Your Ethnic Group is:
1. American Indian or Alaskan Native
  2. Asian or Pacific Islander
  3. Black, not of Hispanic Origin
  4. Hispanic
  5. White, not of Hispanic Origin
  6. Other
6. Your highest education level attained is:
1. Non-high school graduate
  2. High school graduate or GED
  3. Less than two years college
  4. Two years or more college
  5. Bachelors Degree
  6. Masters Degree
  7. Doctoral Degree
7. Highest level of professional military education (residence or correspondence):
0. None or not applicable
  1. NCO Orientation Course or USAF Supervisor Course (NCO Phase 1 or 2)/ NCO Preparatory Course.
  2. NCO Leadership School (NCO Phase 3)
  3. NCO Academy (NCO Phase 4)
  4. Senior NCO Academy (NCO Phase 5)
  5. Squadron Officer School
  6. Intermediate Service School (i.e., ACSC, or equivalent)
  7. Senior Service School (i.e., AWC, ICAF, NWC)
8. How many people do you directly supervise?
- |         |              |
|---------|--------------|
| 1. None | 4. 3         |
| 2. 1    | 5. 4 to 5    |
| 3. 2    | 6. 6 to 8    |
|         | 7. 9 or more |
9. For how many people do you write performance reports?
- |         |              |
|---------|--------------|
| 1. None | 4. 3         |
| 2. 1    | 5. 4 to 5    |
| 3. 2    | 6. 6 to 8    |
|         | 7. 9 or more |
10. Does your supervisor actually write your performance reports?
- |        |       |             |
|--------|-------|-------------|
| 1. yes | 2. no | 3. not sure |
|--------|-------|-------------|



11. Which of the following "best" describes your marital status?

- 0. Not Married
- 1. Married: Spouse is a civilian employed outside home.
- 2. Married: Spouse is a civilian employed outside home-geographically separated.
- 3. Married: Spouse not employed outside home.
- 4. Married: Spouse not employed outside home-geographically separated.
- 5. Married: Spouse is a military member.
- 6. Married: Spouse is a military member-geographically separated.
- 7. Single Parent.

12. What is your usual work schedule?

- 1. Day shift, normally stable hours.
- 2. Swing shift (about 1600-2400)
- 3. Mid shift (about 2400-0800)
- 4. Rotating shift schedule
- 5. Day or shift work with irregular/unstable hours.
- 6. Frequent TDY/travel or frequently on-call to report to work.
- 7. Crew schedule.

13. How often does your supervisor hold group meetings?

- 1. Never
- 2. Occasionally
- 3. Monthly
- 4. Weekly
- 5. Daily
- 6. Continuously

14. How often are group meetings used to solve problems and establish goals?

- 1. Never
- 2. Occasionally
- 3. About half the time
- 4. All of the time

15. What is your aeronautical rating and current status?

- 1. Nonrated, not on aircrew
- 2. Nonrated, now on aircrew
- 3. Rated, in crew/operations job
- 4. Rated, in support job

16. Which of the following best describes your career or employment intentions?

- 1. Planning to retire in the next 12 months
- 2. Will continue in/with the Air Force as a career
- 3. Will most likely continue in/with the Air Force as a career
- 4. May continue in/with the Air Force
- 5. Will most likely not make the Air Force a career
- 6. Will separate/terminate from the Air Force as soon as possible

## JOB INVENTORY

Below are items which relate to your job. Read each statement carefully and then decide to what extent the statement is true of your job. Indicate the extent to which the statement is true for your job by choosing the phrase which best represents your job.

- |                             |                              |
|-----------------------------|------------------------------|
| 1 = Not at all              | 5 = To a fairly large extent |
| 2 = To a very little extent | 6 = To a great extent        |
| 3 = To a little extent      | 7 = To a very great extent   |
| 4 = To a moderate extent    |                              |

Select the corresponding number for each question and enter it on the separate response sheet.

17. To what extent does your job require you to do many different things, using a variety of your talents and skills?
18. To what extent does your job involve doing a whole task or unit of work?
19. To what extent is your job significant, in that it affects others in some important way?
20. To what extent does your job provide a great deal of freedom and independence in scheduling your work?
21. To what extent does your job provide a great deal of freedom and independence in selecting your own procedures to accomplish it?
22. To what extent are you able to determine how well you are doing your job without feedback from anyone else?
23. To what extent do additional duties interfere with the performance of your primary job?
24. To what extent do you have adequate tools and equipment to accomplish your job?
25. To what extent is the amount of work space provided adequate?
26. To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?
27. To what extent does doing your job well affect a lot of people?
28. To what extent does your job provide you with the chance to finish completely the piece of work you have begun?

1 = Not at all  
2 = To a very little extent  
3 = To a little extent  
4 = To a moderate extent

5 = To a fairly large extent  
6 = To a great extent  
7 = To a very great extent

29. To what extent does your job require you to use a number of complex skills?
30. To what extent does your job give you freedom to do your work as you see fit?
31. To what extent are you allowed to make the major decisions required to perform your job well?
32. To what extent are you proud of your job?
33. To what extent do you feel accountable to your supervisor in accomplishing your job?
34. To what extent do you know exactly what is expected of you in performing your job?
35. To what extent are your job performance goals difficult to accomplish?
36. To what extent are your job performance goals clear?
37. To what extent are your job performance goals specific?
38. To what extent are your job performance goals realistic?
39. To what extent do you perform the same tasks repeatedly within a short period of time?
40. To what extent are you faced with the same type of problem on a weekly basis?
41. To what extent are you aware of promotion/advancement opportunities that affect you?
42. To what extent do co-workers in your work group maintain high standards of performance?
43. To what extent do you have the opportunity to progress up your career ladder?
44. To what extent are you being prepared to accept increased responsibility?
45. To what extent do people who perform well receive recognition?
46. To what extent does your work give you a feeling of pride?

- 1 = Not at all
- 2 = To a very little extent
- 3 = To a little extent
- 4 = To a moderate extent

- 5 = To a fairly large extent
- 6 = To a great extent
- 7 = To a very great extent

- 47. To what extent do you have the opportunity to learn skills which will improve your promotion potential?
- 48. To what extent do you have the necessary supplies to accomplish your job?
- 49. To what extent do details (tasks not covered by primary or additional duty descriptions) interfere with the performance of your primary job?
- 50. To what extent does a bottleneck in your organization seriously affect the flow of work either to or from your group?

#### JOB DESIRES

The statements below deal with job related characteristics. Read each statement and choose the response which best represents how much you would like to have each characteristic in your job.

In my job, I would like to have the characteristics described:

- 1 = Not at all
- 2 = A slight amount
- 3 = A moderate amount
- 4 = A fairly large amount

- 5 = A large amount
- 6 = A very large amount
- 7 = An extremely large amount

- 51. Opportunities to have independence in my work.
- 52. A job that is meaningful.
- 53. An opportunity for personal growth in my job.
- 54. Opportunities in my work to use my skills.
- 55. Opportunities to perform a variety of tasks.
- 56. A job in which tasks are repetitive.
- 57. A job in which tasks are relatively easy to accomplish.

## SUPERVISION

The statements below describe characteristics of managers or supervisors. Indicate your agreement by choosing the phrase which best represents your attitude concerning your supervisor.

- |                                |                      |
|--------------------------------|----------------------|
| 1 = Strongly disagree          | 5 = Slightly agree   |
| 2 = Moderately disagree        | 6 = Moderately agree |
| 3 = Slightly disagree          | 7 = Strongly agree   |
| 4 = Neither agree nor disagree |                      |

Select the corresponding number for each statement and enter it on the separate response sheet.

58. My supervisor is a good planner.
59. My supervisor sets high performance standards.
60. My supervisor encourages teamwork.
61. My supervisor represents the group at all times.
62. My supervisor establishes good work procedures.
63. My supervisor has made his responsibilities clear to the group.
64. My supervisor fully explains procedures to each group member.
65. My supervisor performs well under pressure.
66. My supervisor takes time to help me when needed.
67. My supervisor asks members for their ideas on task improvements.
68. My supervisor explains how my job contributes to the overall mission.
69. My supervisor helps me set specific goals.
70. My supervisor lets me know when I am doing a good job.
71. My supervisor lets me know when I am doing a poor job.
72. My supervisor always helps me improve my performance.
73. My supervisor insures that I get job related training when needed.
74. My job performance has improved due to feedback received from my supervisor.

75. When I need technical advice, I usually go to my supervisor.
76. My supervisor frequently gives me feedback on how well I am doing my job.

#### WORK GROUP PRODUCTIVITY

The statements below deal with the output of your work group. The term "your work group" refers to you and your co-workers who work for the same supervisor. Indicate your agreement with the statement by selecting the phrase which best expresses your opinion.

- |                         |                                |
|-------------------------|--------------------------------|
| 1 = Strongly disagree   | 4 = Neither agree nor disagree |
| 2 = Moderately disagree | 5 = Slightly agree             |
| 3 = Slightly disagree   | 6 = Moderately agree           |
|                         | 7 = Strongly agree             |

Select the corresponding number for each statement and enter it on the separate response sheet.

77. The quantity of output of your work group is very high.
78. The quality of output of your work group is very high.
79. When high priority work arises, such as short suspenses, crash programs, and schedule changes, the people in my work group do an outstanding job in handling these situations.
80. Your work group always gets maximum output from available resources (e.g., personnel and material).
81. Your work group's performance in comparison to similar work groups is very high.

#### ORGANIZATION CLIMATE

Below are items which describe characteristics of your organization. The term "your organization" refers to your squadron or staff agency. Indicate your agreement by choosing the phrase which best represents your opinion concerning your organization.

- |                                |                      |
|--------------------------------|----------------------|
| 1 = Strongly disagree          | 5 = Slightly agree   |
| 2 = Moderately disagree        | 6 = Moderately agree |
| 3 = Slightly disagree          | 7 = Strongly agree   |
| 4 = Neither agree nor disagree |                      |

Select the corresponding number for each item and enter it on the separate response sheet.

Appendix B: Organizational Assessment Package Output

The Organizational Assessment Package (OAP) was developed for use by the Air Force Leadership and Management Development Center (LMDC), Maxwell AFB, Alabama. The LMDC mission includes (a) providing management consultation services to Air Force commanders, (b) providing leadership and management training to Air Force personnel in their work environment, and (c) performing research in support of (a) and (b). The consultative role involves organizational problem area identification and recommendations for resolving problems identified.

The OAP was designed to support the mission objectives of LMDC. First, the OAP provides a means of identifying existing strengths and weaknesses within organizational work groups and aggregated work groups, such as directorates. Second, research results can be fed back into Professional Military Education curricula; other leadership and management training courses; and when action is required, to Air Staff and functional offices of primary responsibility. Third, the OAP data base established can be used for research to strengthen the overall Air Force organizational effectiveness program.

EXTERNALLY CODED DESCRIPTORS

Batch Number

Julian Date of Survey

Major Air Command

Base Code

Consultation Method

Consult Code

Survey Version

FACTORS

Survey Version: OAP 14 Feb 79

FACTOR: DEMOGRAPHIC (NOT A STATISTICAL FACTOR)

SECTION A

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
-	-	Supervisor's Code
-	-	Work Group Code
-	-	Sex
-	-	Your age is
-	-	You are (officer, enlisted, GS, etc.)
-	-	Your pay grade is
-	-	Primary AFSC
-	-	Duty AFSC

SECTION B

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
003	1	Total years in the Air Force:  1. Less than 1 year 2. More than 1 year, less than 2 years 3. More than 2 years, less than 3 years 4. More than 3 years, less than 4 years 5. More than 4 years, less than 8 years 6. More than 8 years



<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
004	2	Total months in present career field: 1. Less than 1 month 2. More than 1 month, less than 6 months 3. More than 6 months, less than 12 months 4. More than 12 months, less than 18 months 5. More than 18 months, less than 24 months 6. More than 24 months, less than 36 months 7. More than 36 months
005	3	Total months at this station: 1. Less than 1 month 2. More than 1 month, less than 6 months 3. More than 6 months, less than 12 months 4. More than 12 months, less than 18 months 5. More than 18 months, less than 24 months 6. More than 24 months, less than 36 months 7. More than 36 months
006	4	Total months in present position: 1. Less than 1 month 2. More than 1 month, less than 6 months 3. More than 6 months, less than 12 months 4. More than 12 months, less than 18 months 5. More than 18 months, less than 24 months 6. More than 24 months, less than 36 months 7. More than 36 months
007	5	Your Ethnic Group is: 1. American Indian or Alaskan Native 2. Asian or Pacific Islander 3. Black, not of Hispanic Origin 4. Hispanic 5. White, not of Hispanic Origin 6. Other
008	11	Which of the following "best" describes your marital status: 0. Not married. 1. Married: Spouse is a civilian employed outside home. 2. Married: Spouse is a civilian employed outside home--geographically separated. 3. Married: Spouse not employed outside home. 4. Married: Spouse not employed outside home--geographically separated. 5. Married: Spouse is a military member. 6. Married: Spouse is a military member--geographically separated. 7. Single parent.

NOTE: Variable 008, statement 11, was added to the OAP on 19 Jan 80 and replaced variable 014 which appears on page 3. Although no longer used Variable 014 is still shown because data collected from about 25,000 samples for this variable is still in the data base.

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>								
009	6	Your highest education level obtained is: <ol style="list-style-type: none"> <li>1. Non-high school graduate</li> <li>2. High school graduate or GED</li> <li>3. Less than two years college</li> <li>4. Two years or more college</li> <li>5. Bachelors Degree</li> <li>6. Masters Degree</li> <li>7. Doctoral Degree</li> </ol>								
010	7	Highest level of professional military education (residence or correspondence): <ol style="list-style-type: none"> <li>0. None or not applicable</li> <li>1. NCO Orientation Course or USAF Supervisor Course (NCO Phase 1 or 2)</li> <li>2. NCO Leadership School (NCO Phase 3)</li> <li>3. NCO Academy (NCO Phase 4)</li> <li>4. Senior NCO Academy (NCO Phase 5)</li> <li>5. Squadron Officer School</li> <li>6. Intermediate Service School (i.e., ACSC, AFSC)</li> <li>7. Senior Service School (i.e., AWC, ICAF, NWC)</li> </ol>								
011	8	How many people do you directly supervise? <table style="width: 100%; border: none;"> <tr> <td>1. None</td> <td>5. 4 to 5</td> </tr> <tr> <td>2. 1</td> <td>6. 6 to 8</td> </tr> <tr> <td>3. 2</td> <td>7. 9 or more</td> </tr> <tr> <td>4. 3</td> <td></td> </tr> </table>	1. None	5. 4 to 5	2. 1	6. 6 to 8	3. 2	7. 9 or more	4. 3	
1. None	5. 4 to 5									
2. 1	6. 6 to 8									
3. 2	7. 9 or more									
4. 3										
012	9	For how many people do you write performance reports? <table style="width: 100%; border: none;"> <tr> <td>1. None</td> <td>5. 4 to 5</td> </tr> <tr> <td>2. 1</td> <td>6. 6 to 8</td> </tr> <tr> <td>3. 2</td> <td>7. 9 or more</td> </tr> <tr> <td>4. 3</td> <td></td> </tr> </table>	1. None	5. 4 to 5	2. 1	6. 6 to 8	3. 2	7. 9 or more	4. 3	
1. None	5. 4 to 5									
2. 1	6. 6 to 8									
3. 2	7. 9 or more									
4. 3										
013	10	Does your supervisor actually write your performance reports? <table style="width: 100%; border: none;"> <tr> <td>1. Yes</td> <td>2. No</td> <td>3. Not sure</td> </tr> </table>	1. Yes	2. No	3. Not sure					
1. Yes	2. No	3. Not sure								

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
014	11	Your work requires you to work primarily:  1. Alone 2. With one or two people 3. As a small work group (3-5 people) 4. As a large work group (6 or more people) 5. Other
015	12	What is your usual work schedule?  1. Day shift, normally stable hours 2. Swing shift (about 1600-2400) 3. Mid shift (about 2400-0800) 4. Rotating shift schedule 5. Day or shift work with irregular/ unstable hours 6. Frequent TDY/travel or frequently on-call to report to work 7. Crew schedule
016	13	How often does your supervisor hold group meetings?  1. Never 2. Occasionally 3. Monthly 4. Weekly 5. Daily 6. Continuously
017	14	How often are group meetings used to solve problems and establish goals?  1. Never 2. Occasionally 3. About half the time 4. All of the time
018	15	What is your aeronautical rating and current status?  1. Nonrated, not on aircrew 2. Nonrated, now on aircrew 3. Rated, in crew/operations job 4. Rated, in support job

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
019	16	Which of the following best describes your career or employment intentions?  1. Planning to retire in the next 12 months 2. Will continue in/with the Air Force as a career 3. Will most likely continue in/with the Air Force 4. May continue in/with the Air Force 5. Will most likely not make the Air Force a career 6. Will separate/terminate from the Air Force as soon as possible

FACTORS, 800 SERIES: Each 800 series factor consists of two or more variables which correspond to statements in the OAP. A mean score can be derived for each factor except 805, 807, 808, 809 and 825 by using a "straight average." The formula for computing the exceptions is indicated.

FACTOR 800: SKILL VARIETY

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
201	17	To what extent does your job require you to do many different things, using a variety of your talents and skills?
212	29	To what extent does your job require you to use a number of complex skills?

FACTOR 801: TASK IDENTITY

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
202	18	To what extent does your job involve doing a <u>whole</u> task or unit of work?
211	28	To what extent does your job provide you with a chance to finish completely the piece of work you have begun?

FACTOR 802: TASK SIGNIFICANCE

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
203	19	To what extent is your job significant in that it affects others in some important way?
210	27	To what extent does doing your job well affect a lot of people?

FACTOR 803: (NOT USED)

FACTOR 804: JOB FEEDBACK

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
272	22	To what extent are you able to determine how well you are doing your job without feedback from anyone else?
209	26	To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?

FACTOR 805: WORK SUPPORT

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
206	23	To what extent do <u>additional duties</u> interfere with the performance of your primary job?
207	24	To what extent do you have adequate tools and equipment to accomplish your job?
208	25	To what extent is the amount of work space provided adequate?

Formula  $(8-206+207+208)/3$

FACTOR 806: NEED FOR ENRICHMENT INDEX (JOB DESIRES)

<u>VARIABLE</u> <u>NUMBER</u>	<u>STATEMENT</u> <u>NUMBER</u>	<u>STATEMENT</u>
(In my job, I would like to have the characteristics described-- from "not at all" to "an extremely large amount")		
249	51	Opportunities to have independence in my work
250	52	A job that is meaningful
251	53	The opportunity for personal growth in my job
252	54	Opportunities in my work to use my skills
253	55	Opportunities to perform a variety of tasks

FACTOR 807: JOB MOTIVATION INDEX

Index is computed using the following factors:

800	Skill Variety
801	Task Identity
802	Task Significance
804	Job Feedback
805	Work Support
813	Task Autonomy

Formula  $((800+801+802+805)/4) 813*804$

FACTOR 808: OJI TOTAL SCORE

Score is computed using the variables in the following formula:

$(V201+V202+V203+V270+V271+V272$   
 $+8-V206+V207+V208+V209+V210$   
 $+V211+V212+V213)$

FACTOR 809: JOB MOTIVATION INDEX ---- ADDITIVE

Index is computed using the following factors:

800	Skill Variety
801	Task Identity
802	Task Significance
804	Work Repetition
805	Work Support
813	Task Autonomy

FORMULA:  $((800+801+802+805)/4)+813+804$

FACTOR 810: JOB PERFORMANCE GOALS

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
217	34	To what extent do you know exactly what is expected of you in performing your job?
218	35	To what extent are your job performance goals difficult to accomplish?
273	36	To what extent are your job performance goals clear?
274	37	To what extent are your job performance goals specific?
221	38	To what extent are your job performance goals realistic?

FACTOR 811: PRIDE

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
215	32	To what extent are you proud of your job?
275	46	To what extent does your work give you a feeling of pride?

FACTOR 812: TASK CHARACTERISTICS

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
201	17	To what extent does your job require you to do many different things, using a variety of your talents and skills?
202	18	To what extent does your job involve doing a <u>whole</u> task or unit of work?
203	19	To what extent is your job significant, in that it affects others in some important way?
272	22	To what extent are you able to determine how well you are doing your job without feedback from anyone else?
209	26	To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?
210	27	To what extent does doing your job well affect a lot of people?
211	28	To what extent does your job provide you with a chance to finish completely the piece of work you have begun?
212	29	To what extent does your job require you to use a number of complex skills?

FACTOR 813: TASK AUTONOMY

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
270	20	To what extent does your job provide a great deal of freedom and independence in scheduling your work?
271	21	To what extent does your job provide a great deal of freedom and independence in selecting your own procedures to accomplish it?
213	30	To what extent does your job give you freedom to do your work as you see fit?
214	31	To what extent are you allowed to make the major decisions required to perform your job well?



FACTOR 814: WORK REPETITION

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
226	39	To what extent do you perform the same tasks repeatedly within a short period of time?
227	40	To what extent are you faced with the same type of problem on a weekly basis?

FACTOR 815: (NOT USED)

FACTOR 816: DESIRED REPETITIVE EASY TASKS

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
255	56	A job in which tasks are repetitive.
258	57	A job in which tasks are relatively easy to accomplish.

FACTOR: JOB INFLUENCES (NOT A STATISTICAL FACTOR)

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
216	33	To what extent do you feel accountable to your supervisor in accomplishing your job?
238	42	To what extent do co-workers in your work group maintain high standards of performance?

FACTOR 817: ADVANCEMENT/RECOGNITION

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
234	41	To what extent are you aware of promotion/ advancement opportunities that affect you?
239	43	To what extent do you have the opportunity to progress up your career ladder?

240	44	To what extent are you being prepared to accept increased responsibility?
241	45	To what extent do people who perform well receive recognition?
276	47	To what extent do you have the opportunity to learn skills which will improve your promotion potential?

FACTOR 818: MANAGEMENT - SUPERVISION (A)

404	58	My supervisor is a good planner
405	59	My supervisor sets high performance standards
410	60	My supervisor encourages teamwork
411	61	My supervisor represents the group at all times
412	62	My supervisor establishes good work procedures
413	63	My supervisor has made his responsibilities clear to the group
445	64	My supervisor fully explains procedures to each group member
416	65	My supervisor performs well under pressure

FACTOR: MANAGEMENT - SUPERVISION (B) (NOT A STATISTICAL FACTOR)

424	66	My supervisor takes time to help me when needed
434	71	My supervisor lets me know when I am doing a poor job
439	75	When I need technical advice, I usually go to my supervisor

AD-A162 248

COMPARISON OF THE JOB SATISFACTION OF AIRCRAFT AND  
MUNITIONS MAINTENANCE (U) AIR FORCE INST OF TECH  
WRIGHT-PATTERSON AFB OH SCHOOL OF SVST R J WILLIAMS  
SEP 85 AFIT/GLM/LSM/855-82 F/G 5/9

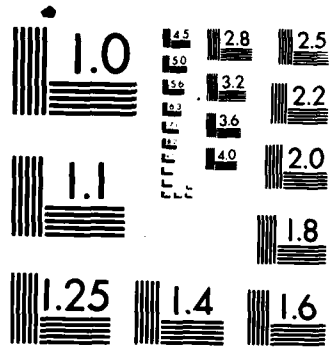
2/2

UNCLASSIFIED

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				END
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				DEC



MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A

FACTOR 819: SUPERVISORY COMMUNICATIONS CLIMATE

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
426	67	My supervisor asks members for their ideas on task improvements
428	68	My supervisor explains how my job contributes to the overall mission
431	69	My supervisor helps me set specific goals
433	70	My supervisor lets me know when I am doing a good job
435	72	My supervisor always helps me improve my performance
436	73	My supervisor insures that I get job related training when needed
437	74	My job performance has improved due to feedback received from my supervisor
442	76	My supervisor frequently gives me feedback on how well I am doing my job

FACTOR 820: ORGANIZATIONAL COMMUNICATIONS CLIMATE

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
300	82	Ideas developed by my work group are readily accepted by management personnel above my supervisor
301	83	My organization provides all the necessary information for me to do my job effectively
302	84	My organization provides adequate information to my work group
303	85	My work group is usually aware of important events and situations
304	86	My complaints are aired satisfactorily
309	91	The information in my organization is widely shared so that those needing it have it available

314	96	My organization has clear-cut goals
317	99	The goals of my organization are reasonable
318	100	My organization provides accurate information to my work group

FACTOR 821: WORK GROUP EFFECTIVENESS

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
259	77	The <u>quantity</u> of output of your work group is very high
260	78	The <u>quality</u> of output of your work group is very high
261	79	When high priority work arises, such as short suspenses, crash programs, and schedule changes, the people in my work group do an <u>outstanding</u> job in handling these situations
264	80	Your work group always gets maximum output from available resources (e.g., personnel and material)
265	81	Your work group's performance in comparison to similar work groups is very high

FACTOR: WORK INTERFERENCES (NOT A STATISTICAL FACTOR)

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
277	48	To what extent do you have the necessary supplies to accomplish your job?
278	49	To what extent do details (task not covered by primary or additional duty descriptions) interfere with the performance of your primary job?
279	50	To what extent does a bottleneck in your organization seriously affect the flow of work either to or from your group?

FACTOR 822: JOB RELATED SATISFACTION

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
705	101	<u>Feeling of Helplessness</u> The chance to help people and improve their welfare through the performance of my job. The importance of my job performance to the welfare of others.
709	102	<u>Co-worker Relationships</u> My amount of effort compared to the effort of my co-workers, the extent to which my co-workers share the load, and the spirit of teamwork which exists among my co-workers.
710	103	<u>Family Attitude Toward Job</u> The recognition and the pride my family has in the work I do.
717	106	<u>Work Schedule</u> My work schedule; flexibility and regularity of my work schedule: the number of hours I work per week.
718	107	<u>Job Security</u>
719	108	<u>Acquired Valuable Skills</u> The chance to acquire valuable skills in my job which prepare me for future opportunities.
723	109	<u>My job as a Whole</u>

FACTOR 823: JOB RELATED TRAINING

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
711	104	<u>On-the-Job Training (OJT)</u> The OJT instructional methods and instructors' competence.
712	105	<u>Technical Training (other than OJT)</u> The technical training I have received to perform my current job.

FACTOR 814: GENERAL ORGANIZATIONAL CLIMATE

<u>VARIABLE NUMBER</u>	<u>STATEMENT NUMBER</u>	<u>STATEMENT</u>
305	87	My organization is very interested in the attitudes of the group members toward their jobs.
306	88	My organization has a very strong interest in the welfare of its people.
307	89	I am very proud to work for this organization.
308	90	I feel responsible to my organization in accomplishing its mission.
310	92	Personnel in my unit are recognized for outstanding performance.
311	93	I am usually given the opportunity to show or demonstrate my work to others.
312	94	There is a high spirit of teamwork among my co-workers.
313	95	There is outstanding cooperation between work groups of my organization.
315	97	I feel motivated to contribute my best efforts to the mission of my organization.
316	98	My organization rewards individuals based on performance.

FACTOR 825: MOTIVATION POTENTIAL SCORE

Score is computed using the following factors:

800	Skill Variety
801	Task Identity
802	Task Significance
804	Job Feedback
813	Task Autonomy

Formula  $((800+801+802)/3)*813*804$

Value range will be from 1 to 343.



Appendix C: Air Force Specialty Code Career  
Field Descriptions

AFR 36-1 Attachment 13 1 January 1984

A13-15  
AFSC 4024  
Entry AFSC 4021

OFFICER AIR FORCE SPECIALTY

AIRCRAFT MAINTENANCE OFFICER

1. SPECIALTY SUMMARY

Manages aircraft maintenance activities, including organizational, intermediate, and depot maintenance functions; and removal, repair, inspection, overhaul, and modification of aircraft, avionics, and associated support equipment. Commands aircraft maintenance units.

2. DUTIES AND RESPONSIBILITIES

*a. Plans and organizes aircraft maintenance activities.*

Plans and organizes aircraft maintenance activities and facilities. Ensures required space, support and test equipment, tools, and spare parts are provided. Organizes units to accomplish maintenance functions and staff activities. Determines personnel requirements based on present and projected workloads. Develops and recommends improvements to procedures and techniques for maintenance, repair, calibration, and modification of aircraft general, accessories, propulsion, fabrication, and avionics systems and associated test, support, and training equipment. Schedules aircraft and allocates available maintenance resources to ensure maximum aircraft and equipment readiness, to comply with scheduled maintenance actions, and to meet, within maintenance capabilities, operational mission and training requirements. Assists maintenance and operations schedulers in developing, implementing, and evaluating innovative techniques aimed at efficient use of available resources and improvements in operational training. Establishes performance standards including quality and time standards for selected maintenance actions. Institutes controls to maintain quality and quantity of work performed.

*b. Directs aircraft maintenance activities.* Assigns work to personnel, establishes priorities, and controls and monitors production to ensure effective and efficient use of personnel, equipment, and facilities, and distribution of workload. Observes work in progress and reviews completed actions for quality of maintenance and compliance with technical and safety policies and directives. Interprets technical orders and directives, and resolves problems related to systems' operation, equipment, personnel, and facilities. Supervises preparation and maintenance of records and reports related to aircraft, systems and equipment inspection, operation, and maintenance. Reviews maintenance forms, documents, and so forth, for completeness and accuracy, and makes necessary entries. Establishes training requirements, monitors training actions, and provides emphasis to the overall training program for assigned personnel. Selects individuals for attendance at various courses to enhance their qualifications.

*c. Coordinates aircraft maintenance activities.* Advises commanders, supervisors, and staff activities of capability

of maintenance activities to meet operational requirements. Coordinates with other maintenance activities on aircraft associated or related systems, equipment, and facilities. Consults with personnel staff on utilization, qualification, and availability of personnel. Maintains liaison with supply, transportation, civil engineering, and other activities to ensure supplies, parts, vehicles, equipment, and facilities are available to meet both present and projected workloads. Maintains liaison with factory and technical representatives in solving problems related to installation, operation, maintenance, inspection, or modification of new and complex equipment. Maintains liaison with research and development activities, other military activities, and representatives of private and public agencies to keep informed of managerial and technological improvements to the career field. Coordinates with munitions, command post, safety, and security police activities to effect delivery, loading, and safeguarding of munitions. Confers with operating activities to determine operational problems and support requirements. Advises commanders, supervisors, and staff activities of operational status of assigned aircraft.

*d. Supervises technical aircraft maintenance functions.* Develops and applies procedures and techniques for initial installation or modification of equipment. Evaluates effectiveness of systems operation and recommends changes in operational use or modification of equipment or maintenance procedures. Based on technical data, advice of specialists, and personal judgment and experience, provides technical advice in determining the nature and extent of repairs to aircraft, aircraft components, or associated equipment. Serves as technical advisor on aircraft accident investigation boards. Inspects and provides assistance to maintenance activities to determine compliance with maintenance management policies and technical and safety directives. Based on technicians' inspections and examinations of aircraft, avionics, and associated support equipment components, provides technical advice on the identification of defects, recommends possible corrective actions, and determines the need for submitting reports according to the maintenance deficiency reporting system. Prepares staff studies and reports on maintenance matters. Ensures correct administration of manhour documentation, maintenance data collection, and maintenance information systems.

### 3. SPECIALTY QUALIFICATIONS

a. *Knowledge.* Knowledge of the following is mandatory: maintenance management procedures and organizational and mission requirements; capabilities, limitations, and basic operating principles of airplane general, accessories, propulsion, and avionics systems and components; theory of flight; principles of airframe construction to include fabrication activities; basic knowledge of munitions, munitions procedures, and quality control or assurance; principles of aircraft, avionics, and munitions systems interrelationships; and basic knowledge of supply, transportation, POL, civil engineering, and other unit activities operations and procedures as they relate to aircraft, avionics, or munitions maintenance units.

b. *Education.* Undergraduate academic specialization in management, engineering, mathematics or physical sciences is desirable

c. *Experience.* A minimum of 18 months' experience in aircraft maintenance assignments is mandatory. Experience must include managing and or directing activities that perform installation, inspection, assembly, repair, testing, alignment, calibration, quality control or assurance, or modification of aircraft general, accessory, propulsion, fabrication, avionics systems and associated support equipment in organizational or depot level activities

d. *Training.* Completion of an aircraft maintenance officer course in residence is mandatory

### 4. SPECIALTY DATA

a. *Grade Spread.* Second lieutenant through major.

b. *Related DOD Occupational Group:* 4D

## OFFICER AIR FORCE SPECIALTY

## MUNITIONS OFFICER

## 1. SPECIALTY SUMMARY

Manages munitions activities, including inspection, storage, assembly, delivery, and loading of munitions in support of aircraft generation. May manage munitions disposal or aircraft maintenance activities.

## 2. DUTIES AND RESPONSIBILITIES

a. *Plans and organizes munitions maintenance activities.* Plans the physical layout of facilities. Ensures required space, support and test equipment, tools, and spare parts are provided. Organizes units to accomplish munitions functions and staff activities. Determines personnel and equipment requirements, based on present and projected workloads. Develops procedures for storing, assembling, delivering, loading, and testing munitions, loading and mating of munitions to aerospace vehicles; and maintaining or modifying of munitions suspension and release systems and aircraft gun systems. Develops procedures for routine disposal of common US munitions. Assists aircraft maintenance and operations schedulers in developing, implementing, and evaluating techniques for more efficient use of resources. Establishes performance standards and institutes quality controls.

b. *Directs munitions maintenance activities.* Assigns work, establishes priorities, and controls and/or monitors production to ensure most efficient use of personnel, equipment, and facilities. Directs functions such as inspection, storage, assembly, delivery, maintenance, modification, disposal, loading, and mating of nuclear and non-nuclear munitions, mechanical and electrical components of tactical missiles and bombs, cruise missiles and their peculiar carrier and launch equipment, ICBM reentry vehicles, chemical munitions systems, munitions pylons and ejector racks, and explosive and propellant devices. Directs maintenance, modification, and repair of aircraft guns and gun systems; munitions suspension and release, launch, and monitor systems; handling equipment; and test and training equipment. Provides for receipt, inspection, and disposition of munitions and munitions residue from using organizations. Supervises preparation and maintenance of records and reports on inspection, operation, and maintenance of munitions and associated equipment. Observes work in progress and reviews completed actions for quality and compliance with technical, safety, and security directives. Establishes training requirements, monitors training actions, and gives emphasis to the overall training program. Implements aircraft emergency war order and combat turn activities, and may act as Emergency Actions Officer. Ensures required number of certified load crews are available for daily and contingency operations.

c. *Coordinates munitions maintenance activities.* Advises commanders, supervisors, and staff of munitions maintenance capabilities to meet operational requirements. Coordinates with other aircraft maintenance activities on aircraft-related systems, equipment, and facilities. Consults with personnel staff on utilization, qualification, certification, and availability of personnel. Coordinates with supply, civil engineering, transportation, and security police to ensure supplies, parts, construction and facility maintenance, vehicles, and support are provided to meet present and projected workloads. Coordinates matters concerning munitions and explosive hazards with commanders and safety and disaster preparedness officials. Maintains liaison with factory and technical representatives in solving problems with installations, operation, maintenance, inspection, or modification of munitions and munitions-related equipment. Maintains liaison with research and development activities, other military activities, and representatives of private and public agencies to keep informed of managerial and technological improvements in the career fields. Coordinates delivery, loading, and safeguarding of munitions with aircraft maintenance, command post, safety, security police, and appropriate civilian activities.

d. *Supervises technical munitions maintenance functions.* Interprets technical orders and directives and resolves problems in munitions and munitions equipment operation, inspection, and maintenance. Reviews quality, safety, and technical reports and maintenance forms and documents for completeness and accuracy; makes necessary entries. Analyzes systems' performance and takes corrective maintenance actions. Develops and applies procedures for initial installation or modification of equipment. Evaluates effectiveness of systems' operation and recommends changes in operational use or modification of equipment or maintenance procedures. Based on technical data, advice of specialists, and personal judgement and experience, provides technical advice in determining the nature and extent of repairs to munitions, munitions components, or associated handling, test, support, or training equipment. Serves as technical advisor on accident and incident investigation boards. Inspects munitions, reentry vehicles, and aircraft maintenance activities for compliance with maintenance management policies and technical, safety, and security

directives. Provides technical advice on the identification of defects; recommends corrective actions. Determines the need to submit deficiency reports based on technicians' inspections and examinations of munitions, munitions components, or associated handling, test, support, or training equipment. Prepares staff studies and reports, administers manhour documentation, maintenance data collection, and use of management information systems.

e. *Plans, organizes, directs, coordinates, and performs technical functions in Explosive Ordnance Disposal (EOD) activities when assigned to EOD duties.* Plans and organizes munitions disposal activities for detection, identification, rendering safe, recovery, and/or destruction of US and foreign munitions. Organizes munitions disposal teams, develops and schedules annual training, and determines

personnel and special equipment requirements. Forecasts for special munitions to support peacetime training and wartime deployment tasking. As a member of the Survival Recovery Cell (SRC), provides technical guidance to the base or combat support group commander concerning Base Recovery After Attack (BRAAT) operations; munitions clearance priorities; evaluation of chemical, biological, or radiological hazards; and clearance recommendations for minimum operating strip (MOS) selection. Solves technical problems and interprets EOD technical orders and directives on munitions disposal activities, SRC operations, and disaster response force procedures. Coordinates munitions disposal proficiency training, range clearance, and base exercises with civilian and military agencies to ensure compliance with safety and security directives.

**3. SPECIALTY QUALIFICATIONS**

a. *Knowledge.* Knowledge of the following is mandatory: munitions and aircraft maintenance concepts, organizations, and operational requirements; munitions supply accounting procedures; capabilities, limitations, and basic operating principles of munitions, munitions-associated equipment and components, and related aircraft systems; quality control or assurance; principles of aircraft, avionics, missiles, reentry vehicles, and munitions systems interrelationships. Basic knowledge of the following is also mandatory: supply, transportation, security police, civil engineering, personnel, and other unit operations and procedures that relate to aircraft, avionics, or munitions maintenance

units; and unit mobility, contingency, or emergency war order plans.

b. *Education.* Undergraduate academic specialization in management or a technical area is desirable.

c. *Experience.* A minimum of 18 months' experience in maintenance assignments, including the management and direction of munitions-related activities, is mandatory.

d. *Training:*  
 (1) Completion of a munitions maintenance officer course in residence is mandatory for upgrade.  
 (2) Completion of an EOD course in residence is also mandatory for award of 4054B.

**4. SPECIALTY DATA**

a. *Grade Spread.* Second lieutenant through major.

b. *Related DOD Occupational Group:* 4E

**5. \*SPECIALTY SHREDOUTS**

<p>Suffix</p> <p>A .....</p> <p>B .....</p>	<p>Portion of AFS to Which Related</p> <p>Munitions</p> <p>EOD</p>
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Appendix D: Discriminant Analysis Subprogram

```
1
2 SET LENGTH = NONE
3   / WIDTH = 128 / FORMAT = F3.0
4
5 FILE HANDLE OAP / UNIT = 19 /
6
7 GET FILE = OAP
8
9 STRING WRKGP1 (A1) / WRKGP2 (A2) / WRKGP3 (A3) / WRKGP4 (A4) /
10
11 COMPUTE WRKGP1 = SUBSTR(WRKGP5,1,1)
12 COMPUTE WRKGP2 = SUBSTR(WRKGP5,1,2)
13 COMPUTE WRKGP3 = SUBSTR(WRKGP5,1,3)
14 COMPUTE WRKGP4 = SUBSTR(WRKGP5,1,4)
15
16 COMMENT ----- SUBPROGRAM -----
17
18 SET LENGTH = 60
19 COMMENT /K/LOCUS --> /JOBS/KLOCUS SPSS-OAP 22APR85
20 COMMENT THIS IS A PROCEDURE FILE
21 SELECT IF PRE
22 SELECT IF PERCAT = 0
23 IF (DAFSC=4021) AND (V004>=4) DAFSC=2000
24 IF (DAFSC=4051) AND (V004>=3) DAFSC=2000
25 SELECT IF ANY(DAFSC,4021,4024,4051,5054)
26 SELECT IF NOT(WRKGP2='41')
27 SELECT IF NOT(WRKGP2='42')
28 SELECT IF NOT(WRKGP2='48')
29 RECODE CMD
30   (1,2,3,6 = 1)
31   (4,5,7 = 2)
32   (ELSE = SYSMIS)
33 INTO LOCUS /
34   V019 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) /
35 COMPUTE FY = TRUNC(JUL+725)/1000)
36 SELECT IF NOT(MISSING(LOCUS))
37 SELECT IF FY GE 1
38 COMPUTE FY=80+FY
39 COMPUTE LOCUS.FY = (LOCUS*100)+FY
40
41 VAR LABELS
42   LOCUS 'NATURE OF ORGANIZATION'
43   FY 'FISCAL YEAR DATA COLLECTED'
44   LOCUS.FY 'LOCATION & FY: CHAR1=LOCUS CHAR2&3=FY' /
45 VALUE LABELS
46   LOCUS
```

```

47          1 'CENTRALIZED'
48          2 'DECENTRALIZED' /
49  FY
50          81 'FY-1981' 82 'FY-1982' 83 'FY-1983'
51          84 'FY-1984' 85 'FY-1985' /
52  LOCUS.FY
53          181 'CENTRALIZED-81'
54          182 'CENTRALIZED-82'
55          183 'CENTRALIZED-83'
56          184 'CENTRALIZED-84'
57          281 'DECENTRALIZED-81'
58          282 'DECENTRALIZED-82'
59          283 'DECENTRALIZED-83'
60          284 'DECENTRALIZED-84' /
61  V019
62          1 'DEFINITE CAREER'
63          2 'LIKELY CAREER'
64          3 'UNCERTAIN'
65          4 'LIKELY NOT CAREER'
66          5 'DEFINITE NOT CAREER' /
67  COMMENT ----- BEGIN PROCEDURES -----
68  DISCRIMINANT GROUPS = LOCUS(1,2)
69          / VARIABLES = V800 TO V825 V019
70

```

## Bibliography

1. Air University. Organizational Assessment Package Output. LMDC/Directorate of Research, Maxwell AFB AL, 23 April 1982.
2. Blackburn, Maj Ronald L. and Capt Randall Johnson. Turnover of Junior Officers. MS thesis, LSSR 5-78B. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1978 (AD-A062 994).
3. Brickman, Capt Jerry M. and Mr. Gunars J. Fricson. Evaluation of Potential Moderators to the Core Job Dimensions--Job Satisfaction Relationship. MS thesis, LSSR 105-83. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1983 (AD-A135 609).
4. Department of the Air Force. Maintenance Management Policy. AFR 66-1. Washington: HQ USAF, 15 April 1984.
5. -----. Maintenance Management Policy. AFR 66-1. Washington: HQ USAF, 2 January 1980.
6. -----. Officer Classification. AFR 36-1. HQ USAF, 1 January 1984.
7. -----. Production Oriented Combat Maintenance. AFR 66-5. Washington: HQ USAF, 15 July 1979.
8. Fancher, Capt Samuel W. A Qualitative Analysis of Supervision in SAC Minuteman ICBM Maintenance. MS thesis, LSSR 112-83. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1983 (AD-A135 599).
9. Flanigan, Capt Joanne M. and Capt Laurence J. R. Little. A Model of Aircraft Maintenance Officer Turnover. MS thesis, LSSR 20-80. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1980 (AD-A087 089).
10. Ginovsky, John. "Logistics Chief: Maintenance Role Underrated," The Air Force Times, 15 April 1985.

11. Glaser, Edward M. Productivity Gains Through Work-life Improvements. New York: Harcourt Brace Jovanovich, 1976.
12. Hamilton, Lt Col Kenneth L. and Maj Lawrence O. Short. "An Examination of the Reliability of the Organizational Assessment Package (OAP)." Technical Report LMDC-TR-81-2. LMDC, Maxwell AFB AL, July 1981.
13. Herzberg, Frederick. Work and the Nature of Man. Cleveland: The World Publishing Company, 1966.
14. -----, Bernard Mausner, and Barbara Block Snyderman. The Motivation to Work. New York: John Wiley and Sons, Inc., 1976.
15. Hightower, Capt Janice M. "Temporal Stability of the Factors of the Organizational Assessment Package." Technical Report LMDC-TR-82-2. LMDC, Maxwell AFB AL, December 1982.
16. ----- and Maj Lawrence O. Short. "Factor Stability of the Organizational Assessment Package." Technical Report LMDC-TR-82-1. LMDC, Maxwell AFB AL, August 1982.
17. House, Robert J., H. Jack Shapiro, and Mahmoud A. Wahba. "Expectancy Theory as a Predictor of Work Behavior and Attitude: A Re-evaluation of Empirical Evidence," Decision Sciences, 5 (3): 481-506 (July 1974).
18. Hunt, John W. and Peter N. Saul. "The Relationship of Age, Tenure, and Job Satisfaction in Males and Females," Academy of Management Journal, 18 (4): 690-702 (December 1975).
19. McKethan, William. Career Management Staff Officer. Telephone interview. Air Force Manpower and Personnel Center, Randolph AFB TX, 27 February 1985.
20. Morrison, Donald F. Multivariate Statistical Methods. New York: McGraw-Hill Book Company, 1976.
21. Personnel Psychology, "A Longitudinal Study of Leader Reward Behavior, Subordinate Expectancies, and Satisfaction," 1 (31): 119-129 (Spring 1978).
22. Porter, Lyman W. and Edward E. Lawler. Managerial Attitudes and Performance. Homewood IL: Richard D. Irwin, 1968.



23. Price, James L. The Study of Turnover. Ames IA: The Iowa State University Press, 1977.
24. Statistical Package for the Social Sciences. Chicago: SPSS, Inc., 1983.
25. Szilagyi, Andrew D., Jr. Management and Performance. Glenview IL: Scott Foresman and Company, 1984.
26. Work in America: Report of a Special Task Force to the Secretary of Health, Education and Welfare. Cambridge MA: MIT Press, 1973.

## VITA

Captain Richard J. Williams was born in Chicago, Illinois, February 14, 1950. Upon graduation from Gordon Technical High School there, he entered the United States Air Force in September 1968. He served as a weapons control technician on F-106 and AC-130 aircraft and instructed electronic principles. He earned his bachelors degree in Vocational Education specializing in communications-electronics at Colorado State University.

In October 1978, Captain Williams received his commission. He served as an Aircraft Generation Branch OIC at Griffiss AFB, New York, Unit Deputy Commander for Maintenance at Galena AFS, Alaska and Aircraft Generation Squadron Maintenance Supervisor at Hill AFB, Utah.

From Utah, Captain Williams was assigned to the Air Force Institute of Technology where he earned a Master of Science Degree in Logistics Management. His follow-on assignment is to 12th AF Headquarters at Bergstrom AFB, Texas.

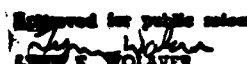
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Thesis Advisor: Paul A. Reid, Lt Col, USAF			
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This study analyzed a subset of data from the Leadership and Management Development Center (LMDC) data base containing responses to the Organizational Assessment Package (OAP) survey administered to aircraft and munitions maintenance officers in the maintenance career field. The data consists of demographic data and responses to attitudinal questions organized into twenty-one statistical factors. A literature review related job satisfaction, factors of job satisfaction, and maintenance organization to factors measured by the OAP. Discriminant analysis was used to attempt to discriminate between the job satisfaction of maintenance officers in centralized and decentralized maintenance organizations. No significant difference in the job satisfaction of OAP factors related to job satisfaction could be found between maintenance officers in centralized and decentralized maintenance organizations. The research was concluded with recommended areas for further research.

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