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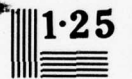


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THE DOD PROGRAM MANAGER PROFILE

STUDY REPORT

PMC 73-1

George N. Giacoppe  
Major USA

DEDICATION

To my wife Louise who has endured many  
of my studies - each a new crusade. I crusade,  
but she keeps the faith.

ACKNOWLEDGEMENTS

Many contributed to this study. General Scott made it all possible, but my indebtedness does not stop there. I also want to thank my friend, classmate and study advisor Jack Taylor for his interest and his statistics books. Dr. George Allen's helpful and constructive comments on the questionnaire precluded sheer folly. Tom Keegan, Garth Payne, and Lee Jackson provided unbelievable support - along with Tom's entire office staff. Sherril Owens took the time to plow through hundreds of questionnaires in order to help with the basic tally. Thanks.

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THE DOD PROGRAM MANAGER PROFILE

An Executive Summary

of a

Study Report

by

George N. Giacoppe  
Major USA

May 1973

Defense Systems Management School  
Program Management Course  
Class 73-1  
Fort Belvoir, Virginia 22060

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DEFENSE SYSTEMS MANAGEMENT SCHOOL

STUDY TITLE:

THE DOD PROGRAM MANAGER PROFILE.

STUDY PROBLEM/QUESTION:

How does the PM or Deputy PM relate to his program with respect to education and job preparation, motivation, performance criteria and preference for a management style?

STUDY REPORT ABSTRACT:

This study is based on a multi-part questionnaire mailed to 154 major programs. The form was sent to Program Managers and deputies with greater than 65% return.

The study indicates that a profile exists with a high degree of assurance on certain factors such as performance criteria but that other factors such as management style develop mixed responses.

The major impact of the study should be to re-examine performance criteria in school and on the job based on priorities listed in the study and to determine whether the Herzberg motivator of "growth" actually can be built into program management.

KEY WORDS: MATERIEL ACQUISITION PROJECT MANAGEMENT  
PROGRAM MANAGEMENT PARTICIPATIVE MANAGEMENT

| Student, Rank Service           | Class    | Date     |
|---------------------------------|----------|----------|
| George N. Giacoppe<br>Major USA | PMC 73-1 | May 1973 |

## EXECUTIVE SUMMARY

This study defines specific parameters normally associated with job enrichment. It is a profile of major program managers and deputies which treat specific examples of Herzberg's "motivators" which, simply stated, are: growth achievement, recognition, and responsibility. The study is based on a questionnaire which was sent to 154 major DOD programs with greater than 65% response rate.

The study addresses the following research questions:

1. "What are the important work and education experiences a PM should have in preparation for managing military programs?"
2. "How do program managers and deputies perceive program management?"
3. "Which common performance abilities are perceived as most important by program managers and deputies?"
4. "What is the predominant preference for directive or participative management?"

Essentially, the results indicate that definite profiles do develop in preferences for work experience and the performance criteria which should be applied to work and preparation for assignments (education/training). Achievement, recognition and responsibility are all needs which appear to be satisfied in the program office. Growth as measured by 1) specific career progression in program

management, and 2) promotion vis a vis contemporaries, appears to be absent from the program office.

The major impact of the study should be that educators and job performance evaluators examine and weigh performance criteria in some meaningful fashion which relates to the importance perceived by program managers. The opinion of the managers, where consistent and statistically meaningful, can assist in developing improved preparation for that kind of management by current middle managers (e.g., students at DSMS).

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THE DOD PROGRAM MANAGER PROFILE

STUDY REPORT

Presented to the Faculty  
of the  
Defense Systems Management School  
in Partial Fulfillment of the  
Program Management Course  
Class 73-1

by

George N. Giacoppe  
Major USA

May 1973

CHAPTER I  
PURPOSE AND ORGANIZATION

Purpose

The fundamental purpose of my study is to develop the management profile of program managers. Hopefully this profile can be described in usable terms so that we may better understand key operant factors in the program office. If we better understand the managers and these factors, perhaps we can eventually see what needs to be done to improve preparation for program managers. Obviously, I have no charter to change anything or even to recommend changes. I will be able to point out areas for further consideration, study and possible interest, but the changes will be left to others. This is at once the beauty and the problem of student status. I hope to introduce the germ of an idea of priorities in the study of program management. My study is one of a large set of studies. I cannot hope to fully describe program management, but I can determine key profile elements and those key abilities seen by program managers themselves to most heavily impact the program office.

Fundamental Technique/Hypothesis

My basic hypothesis will be that there is no significant polarity or single group opinion among program managers

This study represents the views, conclusions and recommendations of the author and does not necessarily reflect the official opinion of the Defense Systems Management School nor the Department of Defense.

(including PM's and Deputy PM's). In order to accept or reject this hypothesis, I will use an  $\alpha \leq .01$  criterion in the Kolmogorov-Smirnov one sample test for most elements of the questionnaire. This technique in itself should eliminate doubts in the level of confidence (99%) but it should also help detect those areas of high interest, energy, and impact. It will help establish profile priorities by virtue of manager involvement. In addition, much of the analysis will be apparent and nearly automatic. It is the synthesis which should then absorb our interest. How do we put this information together to contribute to better program management? Can we in schools be influenced to change by what appears to be important to program managers? Is there some key education and experience which will assist development of program management?

#### Research Questions

My major research questions are listed below:

1. "What are the important work and education experiences a PM should have in preparation for managing military programs?"
2. "How do program managers and deputies perceive program management?"
3. "Which common performance abilities are perceived as most important by program managers and deputies?"
4. "What is the predominant preference for directive or participative management?"

This study will describe the profile of program managers and deputies. It will not presume what that profile "should"

be except to establish a null hypothesis. Similarly, I will examine and order those personal abilities which program managers perceive as necessary to perform successfully. Obviously, these could be used to begin to examine other areas such as the curriculum of the school devoted to program management (DSMS). I will refrain from overextending this study into the detail that a curriculum study might warrant, however I commend it to anyone interested, including myself, for future consideration.

#### Limitations

The most critical limitation in scope for the study is related to the collection and analysis constraints imposed by time in general and especially by lack of key punch time. Had the results of each questionnaire been recorded on cards, correlation and cross correlation would have been simpler and more complete. This situation can be described as unfortunate but expected based on the many demands for ADP support. The data are available for further study even in their present form.

#### Definition of Terms

The terms used within this study will be commonly used and defined terms. If I feel that some doubt about a term exists, I will define it in context. No glossary is required and the technical and mathematical support are demonstrated in the appropriate appendix. All the basic data

are available to the reader who desires to duplicate my computations or challenge them.

#### Organization

In order to maintain a logical flow based on my research questions, the study will be organized by major research question. This will result in some perambulations through the questionnaire, but it groups thoughts and concepts which naturally relate to each other. Salient and repeated comments by respondents will be covered as appropriate when they impact directly on a research question, as happened in the first portion of the first research question. In addition, I will try to use the comments to critique my study and will include a brief summary of comments after coverage of the research questions.

## CHAPTER II

### REVIEW OF RELATED RESEARCH

My review of specific literature and research was brief. Although the parallel research was interesting, it was not significant in contributing to this study. Specific studies are cited and summarized below:

1. "Analysis of Selected Biographical Data from DSMS Classes," Donald E. Child (PMC 72-2)

This study indicates that Millers Analogies Test scores are poor predictors of student performance. A later study (in progress) Robert Lipinski (73-1) appears to verify that result, but goes much further in suggesting causal factors.

2. "A New Technique to Identifying Distinguished Graduates from DSMS," Lonas Robert Delcour (72-2)

This study disagrees with a student grade point average as a useful predictor of job performance of graduates. Delcour suggests using a pairing comparison technique to select distinguished graduates.

3. "The DSMS Grading System," Kenneth P. Worsham

This study is a summary of interviews which tend to discredit the current DSMS grading system. It appears to be a report of student and faculty reaction to the DSMS grading system.

4. "A Study of the Personnel Selection Process Used Within a Program Office," Alfred Banholzer.

This study is a series of the author's observations on the topic which might

provide the basis for specific study of some portion of some process. It is a difficult study from which to generalize.

5. "An Examination of the Curriculum Organization and the Methods of Instruction at the DSMS," William Robert Bendit (72-2)

This study proposes a fifty-fifty division between education and training based on faculty and student responses.

My research will address prediction of student and on the job performance only in the sense of pinpointing factors to be considered in manager development - both through job experience and education. In short, I will not provide "answers" as some of the above studies, but instead will concentrate on determining which are the correct questions to ask.

## CHAPTER III

### DATA COLLECTION AND ANALYSIS PROCEDURE

#### METHODS USED TO COLLECT DATA

I have used a simultaneously mailed questionnaire individually addressed to each program manager of 154 designated programs. In addition, each program manager was distributed sufficient forms for deputies to respond wherever deputies existed. Separate return envelopes were provided for deputies and, to date, each has been returned separately and not with the PM's questionnaire. The likelihood of collusion or coercion appears even more remote when one considers the nature of the respondents and the provision of non-attribution. Personal data were removed from questionnaires once correlation data were recorded to insure the security of responses and to support the non-attribution policy.

I used the modified Likert scales for most questions to allow uniformity and to permit introduction of respondent opinion. Each question using the Likert scale allowed for comments. This allows some interpretation to reduce my bias and will permit, by exception, discovery of unexpected bias if the respondent through notes in the comments. Due to the specific nature of the content of certain questions, e.g., 19, 20, 25, 26, 27, 28, the format of the questionnaire was modified to suit the need.

Based on common testing practice and the assistance of Dr. George R. Allen the Likert scale was modified to an even number of choices to avoid central tendency. Likewise, the polarity of questions was reversed from time to time to insure that the respondent actually read the question and understood the alternatives available. This technique avoids the "automatic mode" where the respondent reads the first few questions - sees that he is selecting a given box (e.g., 2nd box from left), and proceeds to complete several portions at the same level.

No questionnaires received after 30 April are included in the tabulations although several have been received. I established a "cutoff" in order to develop cumulative calculations.

The questionnaire was not pretested but was thoroughly reviewed (question by question) by two DSMS committees which challenged both content and format.

#### Methods Used to Analyse Data

Each returned questionnaire was interpreted for acceptance or rejection on a question-by-question basis. Multiple responses were uniformly interpreted as describing the mean of the indicated values. Markings clearly made on the lines instead of within the boxes were accepted despite my intention to force responses and avoid central tendency. In most cases, the impact was slight in that I grouped the cumulative

data to conduct the calculations for hypothesis testing.

There were three or four respondents who misinterpreted question 28 and included more information than required or repeated numbers in the selection process. I assumed a mean value where appropriate. Similarly, I allowed half values in questions 19 and 20 whenever two responses were selected simultaneously.

The demographic data were simultaneously collected, extracted and summarized with the questionnaire itself. These data are useful in completing the profile although they do not directly impact the research questions.

As an additional collection device, I asked each respondent to list the "five most significant questions" in describing the profile of a program manager. This is a control device which can be used to eliminate questions which do not receive "adequate" response frequency, to weight responses, and to reduce the size of future questionnaires of similar design and research content.

Two persons were used to record frequencies to insure that high accuracy was maintained and that consistency in interpretation of responses was achieved. This provided a "running audit" of responses as well as useful division of labor.

The data were analyzed mainly through use of the Kolmogorov-Smirnov test except for question 28 which required

a rank coefficient test. The ranking was achieved by using both the weighting factors (numbers 1 through 5) and by the total frequency of response. In effect, I used the mean of the weighted responses for each of the eleven possibilities for one ranking and the frequencies of selection for the other ranking in order to develop the measure.

Appendix I displays one questionnaire which contains all the raw data from which the analysis was made. The cumulative data were grouped for easy verification by the reader.

#### CHAPTER IV

MAJOR RESEARCH QUESTION (1): "What are the important work and education experiences a PM or deputy should have in preparation for managing military programs?"

The first six questions of the questionnaire approach this major question from several avenues. Questions one and two are concerned with that relatively narrow band of education/training available with direct application to military programs. I intended simply to obtain a utility index for directly applied schooling. The results, however, suggest that a large number of respondents were not familiar enough with the schools or their "products" to make valid judgements. In fact, the highest frequency scored for any part of those two questions was only 113 while most of the rest of the study enjoyed response rates on the order of 140-150. The mean of the frequency rates for the set was only 60.6. The questions appeared to evoke emotional and ethical responses in the comments portions which dealt with the manner in which the manager made assignments within the program office. Given a broader experience base i.e., more graduates in the field, the respondent would have felt that he were merely reporting events. As things were, many respondents resented the questions which appeared to have them compromise principle. Compromise was not intended, hence questions should have been carefully worded to evoke responses

regarding expectations of performance, or the questions should have been deferred until more graduates were in the field.

In order to simplify the analysis, I chose to group the responses in subsets of two, orienting on the side of strong or moderate agreement (or disagreement); positions 5 and 6 on the six part scale. The results of the Kolmogorov-Smirnov tests for questions one and two are listed in Appendix 2 with all tests.

The results of 1a, 1c, and 1d indicate with a high assurance that the respondents felt that the schools mentioned were beneficial. Each of the parts of question 2 appears to be less conclusive, but based on the relatively small number of DSMS graduates working in current programs, that fact is not surprising. What may be more interesting is the difference in service reactions to question 2a where Navy responses accounted for 11 of the 18 which were in the "strongly disagree" column. Initially, I felt that this might be explained by an unusually strong affinity for experience and some disdain for schools, but exactly **23** of **68** respondents (**Navy**) ~~strongly~~ <sup>moderately strongly</sup> or disagreed with the need for combat experience. The answer appears to lie with those 11 Navy respondents who feel that DSMS graduates do not stand out in productivity. This fact should be noted by the school, although the problem could be variously defined as selection

methods, hostility toward DSMS, hostility with certain graduates, etc., and speculation will not assist. Without stampeding, I would suggest that this matter be explored on one of the upcoming interview trips. Because of the non-attribution promised, I cannot simplify the interview process by decoding the questionnaires for the school. Instead, I recommend that the subject be included in interviews in a non-hurried manner. Perhaps a problem will be defined or we may discover soon that sufficient graduates are in the field to eliminate the feeling which I uncovered.

Question 3 deals with several kinds of experience which might be felt to influence program managership. Clearly, each case exceeds the null hypothesis except the experience in combat (combatant) operations. I feel that the respondents expressed a decided preference for mission oriented experience where the mission was program management. This should not be surprising, but in view of myths such as "good chess practice makes good military strategists," it is refreshing to note that program managers and deputies cite program experience and management experience (command) as preferred preparation for management.

Questions 4 and 5 tend to address the educational backgrounds which might be found on a program. A clear preference was shown for the technical/engineering background, but the choices in question 4 were grouped so that a direct

comparison is impossible. Unfortunately, the wording of question 4 also describes a "technically complex program" while question 5 speaks more broadly of "effective functioning as a program manager". The bias built into the questions coupled to the non sequitur already discussed reduce the power of the questions to support the first major research question, but they do add useful perspective to it. In short, it is useful to know that program managers prefer technical/engineering educational backgrounds for the job of program manager.

The last question of the set (6) deals with the concept of providing structure to the experience building for individuals within the program office. No distinction was made between military and civilian participants in such a concept. The response was overwhelming. Of the 152 who responded to the question, 144 supported identification of key positions in the career progression. I could detect no bias in my wording or the comments from respondents, hence this appears to be a strong expression of a collective desire for structure and clarity in the career area. I suggest that if a clearly defined progression were available as a model for program managers, we would all better understand the preparation or building phase. This study cannot hope to justify the actual identification of those positions, but it does make a strong case for

addressing the concept as a problem area - by commanders,  
personnel managers, and by the program managers themselves.

CHAPTER V

MAJOR RESEARCH QUESTION (2): "How do program managers and deputies perceive program management?"

This question is further broken down into seven components as listed below:

"Do these managers perceive program management as:

- a. Important and providing responsibility (questions 6, 7, and 8),
- b. Satisfying (questions 9c and 10),
- c. Providing recognition (question 9),
- d. Providing growth (questions 11 and 12),
- e. Providing achievement (question 9d),
- f. Challenging and providing responsibility (questions 21, 22, 23 and 24)?

This set of seven questions with several subsets was intended to probe some vital elements of manager motivation. Using the motivation theory of Dr. Frederick Herzberg as a springboard, I attempted to get additional information which describes the job.

Question 6 demonstrates strong support for clear career progression as outlined under first research question. This also indicates that the managers also see that the job is important enough to be delineated.

Question 7 deals directly with the question of a career field for military program managers. In fact, 84 of 148

respondents were in strong or moderately strong support. Again, we can be assured that this expresses the opinion of the respondents within 99% confidence limits.

Question 8 is a similar probe except that it deals with civilian program management careers. The responses are statistically significant such as 7 above (100 of 153 strongly or moderately disagreed).

Question 9a indicates high initial recognition and, not incidentally, a healthy self-esteem. Of the 152 respondents, 98 considered the selection of program managers as a highly selective or moderately highly selective process.

Question 9b indicates that only 16 respondents felt that the selection to become a program manager was actively avoided during the process. This indicates that there was some difference of opinion among the respondents but that the degree of aversion was not especially high. In addition, we can surmise that over one third of the respondents were relatively indifferent, i.e., that they neither sought nor avoided the assignment.

Nearly two thirds of the respondents in 9c felt that the assignment was highly desirable or moderately highly desirable. This, in addition to being statistically significant indicates a high degree of satisfaction with the job. The source of that satisfaction is not defined by the question, but other portions of the profile will assist us in

measuring the growth, achievement, recognition and responsibility which might have contributed to that satisfaction.

In question 9d, over half of the respondents felt that this selection was very important or moderately very important to their careers. I feel this gives a clear mandate for indicating achievement satisfaction by program managers and their deputies. Again, this was statistically significant.

Question 10 was another broad measure of job satisfaction. A convincing 96 of 151 respondents would recommend this assignment either moderately actively or most actively.

In question eleven however, the null hypothesis appears to be supported. In effect, this is a measure of growth felt by the managers and no group opinion was generated. It is interesting to note that the highest frequency happened to fall in the "very bad" - "moderately very bad" category which may indicate a potential problem source. According to Herzberg's theory of motivation, managers seek growth. If the field of program management does not provide it or if that is the perception of the managers, then an important motivation is absent. Promotion is only one measure of growth, however it is the most easily recognized - especially in the military.

Similarly in question 12, the respondents felt that promotion (growth) was disadvantaged, in that 22 of 48

respondents chose "very bad" or "moderately very bad" to describe it. This distribution, however, was not statistically significant to the 99% confidence level which will remain my measure. Perhaps this result is consistent with the desire for structure in career progression (question 6).

Questions 21 and 22 deal with the challenge and responsibility of program management. In both cases, the respondents overwhelmingly indicated that a program manager should both challenge and be responsible. Surely this aspect of Herzberg's motivation is present and positive. The data are statistically significant.

Question 23 also deals with responsibility although some bias can be detected in the careful qualifying language of the "obligation". Nevertheless, the results are impressive with 122 of 147 respondents indicating strong or moderately strong agreement.

Question 24 is a measure of responsibility in the sense that the respondent could indicate whether he was master of his own fate. Obviously the null hypothesis of an even distribution should be challenged here. One might expect a close grouping around the center. It is difficult to interpret responses on the outside of the distribution but those clustered about the mean appear to indicate that the managers felt fully responsible for their programs (success or failure). In effect, this tends to follow Herzberg's

theory and "qualifies" responsibility as a strong motivator for most senior managers in major programs.

## CHAPTER VI

MAJOR RESEARCH QUESTION (3): "Which common performance abilities are perceived as most important by program managers and deputies?"

Question 28 addresses this research question in some depth. There can be no way to completely satisfy this question because of the wide inputs which might be expected and because of the interpretations of the word "ability." Three of the respondents added the characteristic "integrity" to the list. Four added "decisiveness." Three added "technical ability." Undoubtedly these are factors which should be considered although I tend to place all but "technical ability" in the category of personal traits. A greater shortcoming of the question lies in its failure to more fully integrate "leadership" or "management of people," into the abilities list. Several of the abilities specified in 28 do contribute to "leadership" or "management of people," but the question, as worded, does not include a single choice which integrates the concept. Eleven respondents suggested adding "leadership" or "management of people" to the list. Clearly, this should have been addressed despite the difficulties which may have accrued due to the emotional impact of the word "leadership." Given the problem of establishing constraints, I chose to do so in a way which would permit expression by the respondent to examine where constraints may have been too restrictive. I feel that this technique

qualifies the sphere of validity, but it does not restrict it excessively.

In order to analyze the data, I used the technique of rank coefficient employing both the frequency of selection and the weighting of the selection (one through five with "1" assumed more important than "5.")

The Spearman rank coefficient calculated was positive (.863). The 99% confidence interval would place the coefficient within the limits of +.810 to +.916. All this indicates high positive agreement among the respondents as to their actual relative ranking. Some objection may be offered based on the fact that I did not require respondents to rank all 11 variables. I felt that with a relatively large number of respondents (154), very little difference in effect could have been produced by requiring ranking of all variables except that more respondents would have become discouraged from completing the question. Based on the ambiguity associated with determining critical abilities, I feel that the correlation achieved is both adequate and significant. It appears to be consistent with or better than most social studies correlations.

As a side note, if these criteria are critical in successful performance as alluded, we should probably consider evaluating managers by similar criteria. Four of five elements were ranked within the first five both

through frequency and through the weighted average of the ordinal number applied by respondents. The following table (in published order)\* summarizes the question:

Legend: A = Ability to write well...<sup>through</sup>  
 K = Ability to identify problems

|   | <u>RANK BY WEIGHTED<br/>AVERAGE</u> | <u>RANK BY FREQUENCY<br/>OF RESPONSE</u> |
|---|-------------------------------------|--|
| K | 1                                   | 1  |
| E | 2                                   | 2  |
| I | 3                                   | 4  |
| H | 4                                   | 5  |
| F | 5                                   | 6  |
| G | 6                                   | 3  |
| C | 7                                   | 9  |
| B | 8                                   | 10                                       |
| A | 9                                   | 8  |
| D | 10                                  | 7  |
| J | 11                                  | 11                                       |

\*Raw data are available in Appendix 3

As the reader examines the findings, he should note that the "ability to identify problems" holds the highest priority while "ability to apply regulations and procedures" is clearly last in priority. I feel strongly that this should be noted in job experience, education/training and in evaluation. Similarly, we should order other abilities in priority sequence and weight these factors when evaluating managers. The question as to whether or not this is done in practice would make an excellent study in itself. There is information available from officer evaluation reports, fitness reports, school grading/evaluation systems, curricula, even teaching techniques, performance counseling checklists, etc.

In brief, this question successfully demonstrates a preference listing which can be refined by adding more alternatives or changing and adjusting the alternatives already present. Perhaps "leadership" should be added - perhaps not. If we are considering evaluation of the performance, however I would recommend that "leadership" per se not be included because it is not directly measurable. We can measure the "ability to identify problems," or "overall communication skills ability," etc., as they appear in the question. A dedicated manager or educator can develop the subjective and objective measures to complete the feedback circuit. The message is clear that we should look to performance criteria rather than leadership traits because they are more meaningful, more easily measured, and less ambiguous. They are more meaningful because they are oriented on the mission achievement. They are more easily measured because both subjective and objective goals can be set by the evaluator and evaluated. They are less ambiguous in the sense that most managers will define the terms similarly. In the trait approach, what one manager perceives as "decisiveness," another may see as "lack of cooperation," or "lack of loyalty." Milestones can be applied to performance (substantiated subjective opinion). Opinion with regard to traits is nearly impossible to substantiate.

## CHAPTER VII

MAJOR RESEARCH QUESTION (4): "What is the predominant preference for directive or participative management?"

Undoubtedly this will be the most controversial portion of my study. Let me preface any description by stating that I have tried carefully to avoid a value judgement on the direction of the preference. Let me suggest that the preferential style would be affected by such factors as time available (program phase, etc.). The style might in turn affect other factors such as the imaginativeness demonstrated by a staff. In this research question, I am merely trying to find out what the state of nature is - not suggest ways to change. As the individual questions are unfolded, the reader will see that no single profile stands out. Perhaps this should reduce any controversy which develops.

Question 13 is a question where I anticipated no group opinion or perhaps a tendency toward central responses. However, 89 of 153 respondents felt strongly or moderately strongly in disagreement with the proposal of more civilian program managers. This is statistically significant and indicates a "directive" nature. The strength would increase if the civilian respondents were deleted from the sample.

Question 15 was a broad question which related to adding civilians in general. The distribution here appears to

be near predicted although there is some grouping toward the center, it is not within 99% confidence limits. This state of nature could easily reflect the differing program needs and appears to have no relationship to management style.

Question 16 indicates a preponderant perception that program/project staffs are imaginative. Of 149 respondents, 92 felt their staffs were imaginative or moderately imaginative. The null hypothesis is strongly rejected and a participative climate is indicated by a large number of managers.

Similarly, question 17 is statistically significant in that an extremely small number of respondents felt their staffs needed "much direction" or "moderately much direction." There was some central grouping and a rather large number (46) felt that their staffs needed moderately little direction. Again, a participative climate is indicated by the distribution of responses, but it is mainly a rejection of overdirection. This is an important differentiation in describing the collective management style. The acceptance of "little direction" or "moderately little direction" is not statistically significant although the distribution is slightly higher than the expectation.

Question 18 indicates a strong directive approach with 135 of 151 respondents generally indicating that the PM sets

goals with the advice of his staff. This would appear to indicate that staff participation in organizational goal setting is restricted. One may properly ask, "Is that inconsistent with the other findings which point to a participative climate?" The answer is "probably not." In other words, it is entirely possible that many PMs feel comfortable in setting organizational goals - because of role differentiation, time constraints or even superior knowledge.

Question 19 indicates a strong preference for perceiving potential conflict as distributive. This is characteristic of a directive climate but also it is often a part of the program environment where external forces (e.g., budget cuts) set up a distributive climate almost automatically. The choice (a) is statistically significant.

Of 132 respondents, 72 describe a distributive characteristic with respect to potential conflict. This approach to conflict (distributive) is characteristic of some directive climates. Other directive climates can be found where even the possibility of conflict can precipitate an additional directive. "There will be no conflict." The latter approach appears to be less realistic since it may well lead to passive aggression which is usually more difficult to control than conflict.

Question 20 indicates a strong preponderance for "brush fire" type operators. It is difficult to believe that 62

of 134 respondents reflected identical program phases. In effect, I suggest that the perception of "short fuse" decisions helps create a directive climate - regardless of the validity of the perception or the real cause of the situation.

In summary, there does not appear to be a predominant preference for directive or participative management but the tendency toward one style or the other is strongly influenced by the environment. It would also appear that the type of decision may influence the climate. The two factors may well be complementary although this study is not cross correlated to select "high directive profiles" and compare their responses to "high participative profiles." Considerable data are available, but the scope of correlations is exponential to a single cumulative study.

## CHAPTER VIII

### SUMMARY OF OTHER FINDINGS

#### Summary of Comments

Question 29 was intended to serve as an additional priority listing of the important questions to ask and it further was viewed as a template to cut down the length of future iterations of any similar questionnaire.

The five most crucial questions according to frequency are as listed below:

| <u>Order</u> | <u>F</u> | <u>Question No.</u> | <u>Topic</u>                                 |
|--------------|----------|---------------------|--|
| 1            | (87)     | 3                   | Job experience factors                       |
| 2            | (86)     | 28                  | Performance abilities                        |
| 3            | (51)     | 22                  | Manager challenging validity of requirements |
| 4            | (49)     | 9                   | Selection process                            |
| 5            | (41)     | 23                  | Cancellation recommendation                  |

---

The entire frequency list appears in Appendix 4 without topic description or ordering. It should be clear from the table above that experiences and performance are stressed and that from questions 22 and 23 that a "yes man" approach is shunned. It should also be interesting to note that the selection process drew much attention but that tenure on the job got no responses. I feel that question 29 provides internal corroboration and consistency to the other findings of the study.

In questions 25 and 26 I attempted to get some measure of what managers felt assignment periods were - versus what they should be. The data are grouped in summary in Appendix 5. I did not perform a Kolmogorov-Smirnov test on these data because I arbitrarily established year groups and may have biased any test of that sort. The summary of desired tenure versus expected tenure is described below:

|                | <u>0-18 mos</u> | <u>19 mos-3½ yrs</u> | <u>3½-5½ yrs</u> | <u>&gt;5½ yrs</u> |
|----------------|-----------------|----------------------|------------------|-------------------|
| #25 (desired)  | 0               | 42                   | 90               | 28                |
| #26 (expected) | 7               | 63                   | 59               | 29                |

This indicates that expected tenure is shorter than desired tenure in several cases, but the shift is not unreasonable in scope and the frequency for long tenure (> 5½ years) is similar in both cases. By way of explanation, I interpreted "duration of program" as greater than 5½ years for the purposes of this analysis.

In question 27 I tried to get qualifying information which might hint at experience and education which has proven helpful to managers. Although these results are difficult to quantify, some trends did develop.

Unfortunately, because of the "free response" aspect of the question, much of the interpretation may be challenged. However I feel that the following few items would be agreed to by nearly anyone else. The first three schools in order of preference were: DSMS (f=38); 2) Graduate Business/

Management School (f = 28); and 3) the Industrial College of the Armed Forces (f = 17). The first three assignments in order of preference were: 1) Program/Project Office (f = 28); 2) Operations/Command (f = 18); and 3) Procurement (f = 16). R & D experience was a close fourth with f = 14. Many respondents expressed satisfaction with their preparation. Overall it seemed clear that the respondents knew what they needed but that perhaps due to the variety of programs and assignments within these programs that the question was superfluous. It tends to support other questions regarding education and experience. I would rewrite that question to make it more usable in format, however.

The response rate was so low on question 14 that no valid conclusion can be drawn from it.

## CHAPTER IX

### SUMMARY AND SUGGESTIONS FOR ADDITIONAL RESEARCH

#### Summary and Conclusions

The study was a valuable exercise for me to view program managers. I addressed the research questions through a behavioral/educational outlook and the responses were, on the whole, usable and easily understood. Perhaps no "great truth" was unearthed and yet program managers and deputies do hold some group perceptions which must be accounted for in preparation for those higher assignments in weapons acquisition.

The study helped me to understand program managers but it will also assist anyone who works in the education or training of those entering program management. I commend it to career and personnel planners so that perhaps the problem of career progression can be addressed. I commend it to the staff and faculty at DSMS because it will help them continue to keep an eye on relevance in the classroom. It may also give hints at the priority of performance factors which should be used in establishing an educational system and evaluating that system and the people in it (students, staff and faculty).

I would personally enjoy a curriculum study which builds upon the perceptions highlighted in this study. I would especially like to deepen my study in the area of refining the priorities determined for abilities associated

with performance and the techniques for evaluation in an academic environment. Perhaps the pertinent question is "How can we best create a relevant performance environment in a school?"

The goals of my study were met within an abridged scope. I have sufficient data for comparing perceptions of subgroups Army, Air Force, Navy both as Program Managers and Deputies. If I expand the scope, these comparisons will absorb my immediate attention. I will then broaden the scope as discussed above, but I feel compelled to use all the data I now have before creating more.

As a final caution, the profile must be seen in context. There is no stereotyped program manager - although these managers may have some perceptions in common. I am confident that this study will generate more questions than it answers, but perhaps we learn more from the search than the discovery.

BIBLIOGRAPHY

1. Allen, George R. The Dissertation or Thesis Process. Washington, D.C.: (manuscript), 1972.
2. Seigel, Sidney. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill Book Company, 1956.

Appendix 1

Indicate your preference by a check of "x" in the appropriate block on the scales indicated below. Write in any additional comments you wish to make or examples you may care to cite in the space below each question.

1. a. I have attended the ten-week DWSMC course at Wright-Patterson AFB, Ohio, and it benefited me in my program management assignments.

|                      | Strongly Disagree | MODERATE | SLIGHT | SLIGHT | MODERATE | Strongly Agree |
|----------------------|-------------------|----------|--------|--------|----------|----------------|
| FREQUENCY            | 2                 | 3        | 1      | 4      | 10       | 14             |
| CUMULATIVE FREQUENCY | 2                 | 5        | 6      | 10     | 20       | 34             |

Comments:

- b. I have attended the twenty-week Program Management Course at Fort Belvoir, Virginia, and it benefited me on my program management assignment.

|                      | Strongly Disagree |   |   |   |   | Strongly Agree |
|----------------------|-------------------|---|---|---|---|----------------|
| FREQUENCY            | 1                 | 0 | 0 | 3 | 1 | 1              |
| CUMULATIVE FREQUENCY | 1                 | 1 | 1 | 4 | 5 | 6              |

Comments:

- c. I attended the three-week Executive Refresher Course at Fort Belvoir, Virginia, and it benefited me in my program management assignment.

|                      | Strongly Disagree |   |   |   |   | Strongly Agree |
|----------------------|-------------------|---|---|---|---|----------------|
| FREQUENCY            | 1                 | 2 | 0 | 3 | 1 | 2              |
| CUMULATIVE FREQUENCY | 1                 | 3 | 3 | 6 | 7 | 9              |

Comments:

- d. Courses of this nature are not a significant factor in preparation for program management.

|                      | Strongly Disagree |    |    |    |    | Strongly Agree |
|----------------------|-------------------|----|----|----|----|----------------|
| FREQUENCY            | 44                | 33 | 2  | 17 | 2  | 3              |
| CUMULATIVE FREQUENCY | 44                | 77 | 79 | 96 | 98 | 101            |
|                      |                   |    |    |    |    | 6              |
|                      |                   |    |    |    |    | 107            |
|                      |                   |    |    |    |    | 113            |

Comments:

2. How many personnel in your program office have attended the twenty-week Program Manager Course (PMC) at the Defense Systems Management School?

No. of Military \_\_\_\_\_  
 No. of Civilians \_\_\_\_\_

a. PMC graduates are more productive than non-attendees:

|                      |                |    |    |    |    |                   |
|----------------------|----------------|----|----|----|----|-------------------|
|                      | Strongly Agree | 1  |    | 3  |    | Strongly Disagree |
| FREQUENCY            | 3              | 14 | 22 | 11 | 9  | 18                |
| CUMULATIVE FREQUENCY | 3              | 18 | 40 | 51 | 63 | 81                |
| Comments:            |                |    |    |    |    |                   |
|                      |                | 4  |    | 43 |    |                   |

b. Compared to non-attendees, I would put PMC graduates in more important program office positions:

|                      |                |    |    |    |    |                   |
|----------------------|----------------|----|----|----|----|-------------------|
|                      | Strongly Agree |    |    | 3  |    | Strongly Disagree |
| FREQUENCY            | 9              | 19 | 27 | 10 | 12 | 14                |
| CUMULATIVE FREQUENCY | 9              | 28 | 55 | 65 | 77 | 91                |
| Comments:            |                |    |    |    |    |                   |
|                      |                |    |    | 58 |    |                   |

c. I give the tougher tasks to my PMC graduates in my organization:

|                      |              |    |    |    |    |               |
|----------------------|--------------|----|----|----|----|---------------|
|                      | Almost Never |    |    | 5  |    | Almost Always |
| FREQUENCY            | 8            | 8  | 20 | 15 | 10 | 3             |
| CUMULATIVE FREQUENCY | 8            | 16 | 36 | 51 | 61 | 64            |
| Comments:            |              |    |    |    |    |               |
|                      |              |    |    | 41 |    |               |

d. Compared to non-attendees, I accept the recommendations of my PMC graduates:

|                      |              |    |    |    |    |               |
|----------------------|--------------|----|----|----|----|---------------|
|                      | Almost Never |    |    | 9  |    | Almost Always |
| FREQUENCY            | 6            | 7  | 16 | 22 | 3  | 1             |
| CUMULATIVE FREQUENCY | 6            | 13 | 29 | 51 | 54 | 55            |
| Comments:            |              |    |    |    |    |               |
|                      |              |    |    | 38 |    |               |

3. For my present job, I feel that prior experience is required:

a. In combatant operations.

|                      |                  |    |    |    |     |     |                   |
|----------------------|------------------|----|----|----|-----|-----|-------------------|
|                      | 1 Strongly Agree |    |    |    | 2   |     | Strongly Disagree |
| FREQUENCY            | 21               | 24 | 27 | 20 | 29  | 26  |                   |
| CUMULATIVE FREQUENCY | 22               | 46 | 73 | 95 | 124 | 151 |                   |
| Comments:            | 75               |    |    |    |     |     |                   |

b. In support of combat operations.

|                      |                |    |     |     |     |     |                   |
|----------------------|----------------|----|-----|-----|-----|-----|-------------------|
|                      | Strongly Agree | 1  |     |     | 2   |     | Strongly Disagree |
| FREQUENCY            | 27             | 36 | 36  | 20  | 16  | 10  |                   |
| CUMULATIVE FREQUENCY | 27             | 64 | 100 | 122 | 138 | 154 |                   |
| Comments:            | 28             |    | 102 |     |     |     |                   |

c. In a command position.

|                      |                |    |     |     |     |     |                   |
|----------------------|----------------|----|-----|-----|-----|-----|-------------------|
|                      | Strongly Agree |    |     | 1   |     |     | Strongly Disagree |
| FREQUENCY            | 40             | 34 | 41  | 17  | 9   | 7   |                   |
| CUMULATIVE FREQUENCY | 40             | 74 | 115 | 113 | 142 | 149 |                   |
| Comments:            | 116            |    |     |     |     |     |                   |

d. As a manager of a small program office.

|                      |                |    |     |     |     |     |                   |
|----------------------|----------------|----|-----|-----|-----|-----|-------------------|
|                      | Strongly Agree |    |     | 3   |     |     | Strongly Disagree |
| FREQUENCY            | 30             | 40 | 41  | 23  | 13  | 2   |                   |
| CUMULATIVE FREQUENCY | 30             | 70 | 111 | 137 | 150 | 152 |                   |
| Comments:            | 114            |    |     |     |     |     |                   |

e. In a program office.

|                      |                |     |     |     |     |     |                   |
|----------------------|----------------|-----|-----|-----|-----|-----|-------------------|
|                      | Strongly Agree | 1   |     |     | 1   |     | Strongly Disagree |
| FREQUENCY            | 57             | 51  | 25  | 10  | 9   | 0   |                   |
| CUMULATIVE FREQUENCY | 57             | 109 | 134 | 145 | 154 | 154 |                   |
| Comments:            | 58             |     | 135 |     |     |     |                   |

f. In a laboratory or functional area in support of a program office.

|                      | Strong Advantage |    |     |     |     | Strong Disadvantage |
|----------------------|------------------|----|-----|-----|-----|---------------------|
| FREQUENCY            | 21               | 37 | 59  | 2   | 24  | 8                   |
| CUMULATIVE FREQUENCY | 21               | 58 | 117 | 119 | 143 | 152                 |
| Comments:            |                  |    |     |     |     |                     |

4. A manager with a college degree in fields such as liberal arts, law, accounting, business, etc. could manage a technically complex program.

|                      | Strongly Disagree |    |    |    |     | Strongly Agree |
|----------------------|-------------------|----|----|----|-----|----------------|
| FREQUENCY            | 31                | 30 | 19 | 2  | 32  | 10             |
| CUMULATIVE FREQUENCY | 31                | 61 | 80 | 82 | 114 | 149            |
| Comments:            |                   |    |    |    |     |                |

5. A technical/engineering degree is essential to effective functioning as a program manager.

|                      | Strongly Agree |    |    |    |    | Strongly Disagree |
|----------------------|----------------|----|----|----|----|-------------------|
| FREQUENCY            | 27             | 43 | 2  | 1  | 24 | 10                |
| CUMULATIVE FREQUENCY | 27             | 70 | 72 | 73 | 97 | 148               |
| Comments:            |                |    |    |    |    |                   |

6. Key executive (line) and key functional (staff) assignments in the materiel acquisition process should be identified as career steps for those who would opt to become a program manager:

|                      | Strongly Support |     |     |     |     | Strongly Discourage |
|----------------------|------------------|-----|-----|-----|-----|---------------------|
| FREQUENCY            | 60               | 54  | 28  | 2   | 5   | 3                   |
| CUMULATIVE FREQUENCY | 60               | 116 | 144 | 146 | 151 | 152                 |
| Comments:            |                  |     |     |     |     |                     |

7. A program management career field for military officer is needed:

|                      | Strongly Discourage |    |    |    |     | Strongly Support |
|----------------------|---------------------|----|----|----|-----|------------------|
| FREQUENCY            | 6                   | 14 | 13 | 31 | 38  | 46               |
| CUMULATIVE FREQUENCY | 6                   | 20 | 33 | 64 | 102 | 148              |
| Comments:            |                     |    |    |    |     |                  |

8. A career field in program management for civilians is not needed:

|                      | Strongly Agree |    |    |    |     | Strongly Disagree |
|----------------------|----------------|----|----|----|-----|-------------------|
| FREQUENCY            | 7              | 15 | 15 | 16 | 49  | 1                 |
| CUMULATIVE FREQUENCY | 7              | 22 | 37 | 53 | 102 | 153               |
| Comments:            |                |    |    |    |     |                   |

9. Would you describe the selection to become a program manager:

|                      | A Highly Selective Process |    |     |     |     | Not a Highly Selective Process |
|----------------------|----------------------------|----|-----|-----|-----|--------------------------------|
| FREQUENCY            | 46                         | 52 | 23  | 7   | 16  | 8                              |
| CUMULATIVE FREQUENCY | 46                         | 98 | 121 | 128 | 144 | 152                            |
| Comments:            |                            |    |     |     |     |                                |

|                      | Actively Sought |    |     |     |     | Actively Avoided |
|----------------------|-----------------|----|-----|-----|-----|------------------|
| FREQUENCY            | 28              | 41 | 44  | 16  | 2   | 1                |
| CUMULATIVE FREQUENCY | 28              | 69 | 113 | 129 | 131 | 147              |
| Comments:            |                 |    |     |     |     |                  |

|                      | Highly Desirable |    |     |     |     | Not Highly Desirable |
|----------------------|------------------|----|-----|-----|-----|----------------------|
| FREQUENCY            | 53               | 44 | 32  | 8   | 2   | 1                    |
| CUMULATIVE FREQUENCY | 53               | 97 | 129 | 137 | 139 | 149                  |
| Comments:            |                  |    |     |     |     |                      |

|                      | Very Important to your Career |    |     |     |     | Very Unimportant to your Career |
|----------------------|-------------------------------|----|-----|-----|-----|---------------------------------|
| FREQUENCY            | 48                            | 34 | 35  | 17  | 3   | 6                               |
| CUMULATIVE FREQUENCY | 48                            | 82 | 117 | 137 | 140 | 146                             |
| Comments:            |                               |    |     |     |     |                                 |

10. Would you recommend assignment in the program management field to your peers and juniors?

|                      |                   |   |    |    |    |     |               |
|----------------------|-------------------|---|----|----|----|-----|---------------|
|                      | Recommend Against | 1 |    |    |    |     | Most Actively |
| FREQUENCY            | 2                 | 5 | 12 | 35 | 40 | 56  |               |
| CUMULATIVE FREQUENCY | 2                 | 8 | 20 | 55 | 95 | 151 |               |
| Comments:            |                   | 3 |    |    |    |     |               |

11. Compared to command assignments held by your peers, how would you rate your chances for promotion to the next higher grade? (MILITARY ONLY)

|                      |           |    |    |    |    |     |          |
|----------------------|-----------|----|----|----|----|-----|----------|
|                      | Very Good |    |    | 3  |    |     | Very Bad |
| FREQUENCY            | 16        | 12 | 19 | 16 | 19 | 20  | 1        |
| CUMULATIVE FREQUENCY | 16        | 28 | 47 | 66 | 85 | 105 | 106      |
| Comments:            |           |    |    |    |    |     |          |

12. Compared to assignments outside the program office (e.g., in the functional directorates of a major command such as research and development, procurement, etc.), how would you rate your chances for promotion to the next higher grade? (CIVILIAN ONLY)

|                      |          |    |    |    |    |    |           |
|----------------------|----------|----|----|----|----|----|-----------|
|                      | Very Bad |    |    | 1  |    |    | Very Good |
| FREQUENCY            | 14       | 8  | 9  | 4  | 8  | 4  |           |
| CUMULATIVE FREQUENCY | 14       | 22 | 31 | 36 | 44 | 48 |           |
| Comments:            |          |    |    | 32 |    |    |           |

13. More programs should be managed by civilian program managers.

|                      |                |    |    |    |    |     |                   |
|----------------------|----------------|----|----|----|----|-----|-------------------|
|                      | Strongly Agree |    |    | 4  |    |     | Strongly Disagree |
| FREQUENCY            | 12             | 15 | 12 | 21 | 34 | 54  | 1                 |
| CUMULATIVE FREQUENCY | 12             | 27 | 39 | 64 | 98 | 152 | 153               |
| Comments:            |                |    |    | 43 |    |     |                   |

|           |                      |
|-----------|----------------------|
| FREQUENCY | CUMULATIVE FREQUENCY |
| 71        | 71                   |
| 34        | 108                  |
| 24        | 132                  |

19. Select the item which best describes potential conflict situations.
- a. Distributive (e.g., what engineering department gains, configuration control department loses).
  - b. Integrative (compromise where nobody loses).
  - c. We allow no conflict situations to develop.
- Comments:

|           |                      |
|-----------|----------------------|
| FREQUENCY | CUMULATIVE FREQUENCY |
| 13 1/2    | 13 1/2               |
| 21 1/2    | 35                   |
| 62        | 97                   |
| 37        | 134                  |

20. Circle the item which best describes the majority of decisions in your program.
- a. Long lead time - Short implementation period
  - b. Long lead time - Long implementation period
  - c. Short lead time - Short implementation period
  - d. Short lead time - Long implementation period
- Comments:

21. A program manager should never recommend that his program be cancelled.

|                      |                |   |    |    |    |  |                   |   |     |
|----------------------|----------------|---|----|----|----|--|-------------------|---|-----|
|                      | Strongly Agree |   |    |    |    |  | Strongly Disagree | 1 |     |
| FREQUENCY            | 3              | 5 | 3  | 3  | 30 |  | 108               |   |     |
| CUMULATIVE FREQUENCY | 3              | 8 | 11 | 14 | 44 |  | 152               |   |     |
|                      | Comments:      |   |    |    |    |  |                   |   | 153 |

22. A program manager should challenge the validity of requirements.

|                      |                   |   |   |    |    |  |                |   |     |
|----------------------|-------------------|---|---|----|----|--|----------------|---|-----|
|                      | Strongly Disagree |   |   |    |    |  | Strongly Agree | 1 |     |
| FREQUENCY            | 4                 | 2 | 2 | 10 | 34 |  | 104            |   |     |
| CUMULATIVE FREQUENCY | 4                 | 6 | 8 | 18 | 52 |  | 156            |   |     |
|                      | Comments:         |   |   |    |    |  |                |   | 157 |

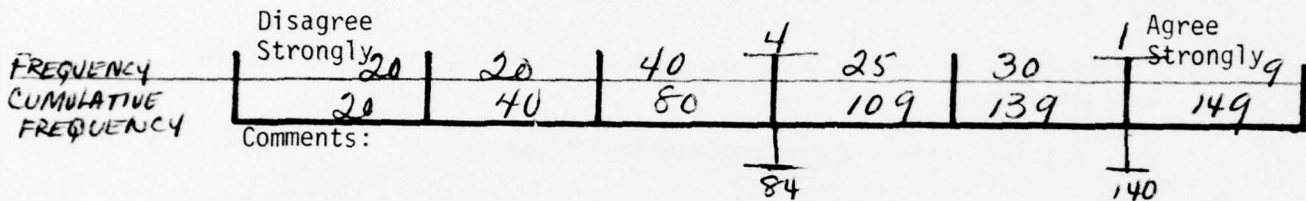
14. If you believe that more civilians should be assigned as program managers, what types of programs should they be placed in charge of?

\_\_\_\_\_

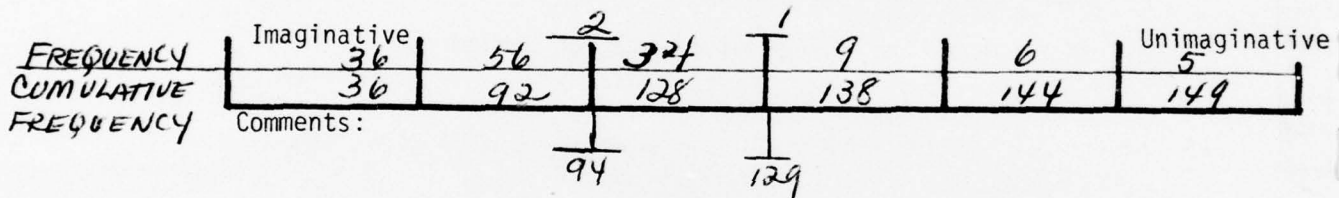
\_\_\_\_\_

\_\_\_\_\_

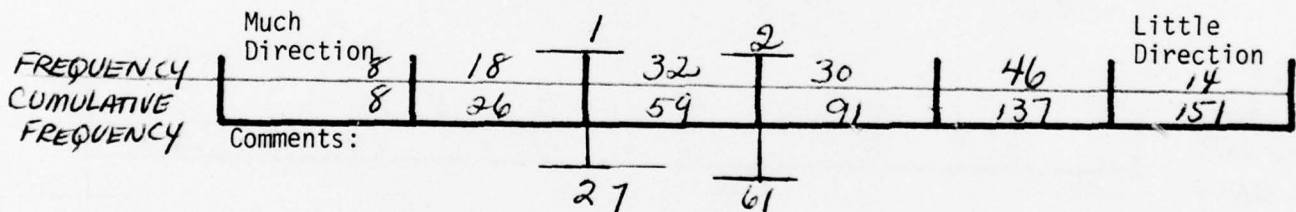
15. If you could expand your personnel base, would you add mostly civilians?



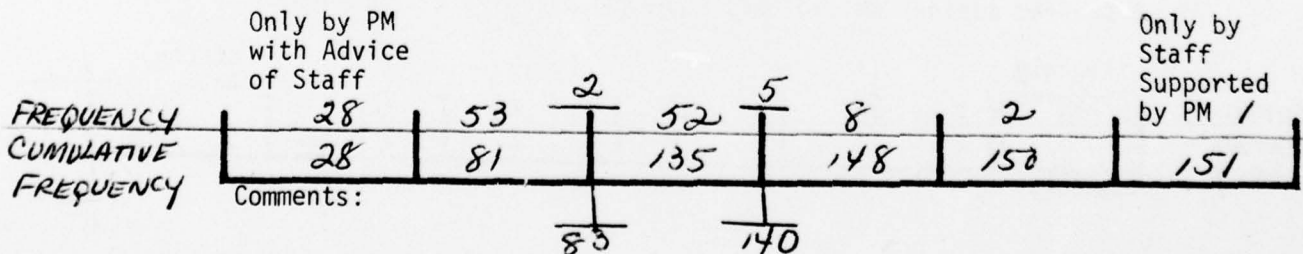
16. How would you describe your program/project staff?



17. How much direction does your staff require?



18. Organization goals within your program/project office are set:



23. If a program manager is convinced that his program will not meet stated requirements, he is obligated to state the costs (technical performance, schedule & dollars) to complete as well as to recommend cancellation to the decision maker.

|                      | Strongly Agree |     |     |     |     | Strongly Disagree |
|----------------------|----------------|-----|-----|-----|-----|-------------------|
| FREQUENCY            | 92             | 30  | 7   | 4   | 6   | 7                 |
| CUMULATIVE FREQUENCY | 92             | 122 | 129 | 133 | 139 | 147               |
| Comments:            |                |     |     |     |     | 140               |

24. How do you perceive your responsibility for program success/failure?

|                      | Only Responsible for Success |   |    |     |     | Only Responsible for Failure |
|----------------------|------------------------------|---|----|-----|-----|------------------------------|
| FREQUENCY            | 5                            | 2 | 28 | 69  | 28  | 1                            |
| CUMULATIVE FREQUENCY | 5                            | 7 | 35 | 104 | 132 | 133                          |
| Comments:            |                              |   |    |     |     | 137                          |

25. How long do you think a program manager should be in his job? \_\_\_\_\_ Yrs.

26. What do you expect your tenure as program manager to be? \_\_\_\_\_ Yrs.

27. Had you an opportunity to groom yourself for your job, and knowing what you now know, what types of assignments and what military and civilian courses of instruction would have benefited you the most?

Assignments

Schools

|       |       |
|-------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

28. Select five of the following abilities in order of their importance in successful performance as a program manager. Rank them using #1 for the most important criterion and #5 for the last of your selections.

Weighted average  
Ranking Order  
FREQUENCY

|    |    |  |
|----|----|--|
| 9  | 8  | Ability to write well and present complex issues clearly.  |
| 8  | 10 | High persuasion abilities.                                 |
| 7  | 9  | Ability to brief frequently and well.                      |
| 10 | 7  | Ability to interface with high ranking officers/officials. |
| 2  | 2  | Overall high communication skills ability.                 |
| 5  | 6  | High ability in interpersonal relations.                   |
| 6  | 3  | Ability to think imaginatively.                            |
| 4  | 5  | Technical ability to analyze complex problems.             |
| 3  | 4  | Ability to think in the broadest range possible.           |
| 11 | 11 | Ability to apply regulations and standing procedures.      |
| 1  | 1  | Ability to identify problems.                              |

29. Additional Instructions: After completing the questionnaire, please look over the questions asked and list below the five most significant questions (by number) for describing the overall profile of a program manager.

**SEE APPENDIX 4**

30. List any one aspect which you feel is more important than those we have included in questions 1 thru 28.

**SEE COMMENTS IN BODY OF STUDY**

Appendix 2

## STATISTICS

In order for the reader to verify the statistical analysis, I have included the process of analysis by way of example using question 1a.

If the reader wishes to check any specific analysis, he should consult the cumulative frequencies displayed in Appendix 1.

The null hypothesis ( $H_0$ ) is that there is no significant identifiable group opinion, i.e., that responses will be distributed evenly across all choices.

The hypothesis of test ( $H_1$ ) is that there is a significant difference in choices (a group opinion) at the 99% confidence interval.

|               |        |        |       |                                   |
|---------------|--------|--------|-------|-----------------------------------|
| $E_0(X) =$    | 1/3    | 2/3    | 3/3   | $D_A =$ actual largest difference |
| $S_{34}(X) =$ | 5/34   | 10/34  | 34/34 | ence                              |
| $d =$         | 58/204 | 76/204 | 0     | $D_c =$ critical difference       |
| $D_A =$       |        | 76/204 |       | (table value)                     |

$$N = 34 \quad (\text{use } N = 30, \alpha = .01)$$

$$D_c = .29 \quad (\text{from Table E, } \underline{\text{Non-Parametric Statistics}}, \text{ Siegal})$$

$$D_A > D_c, \text{ Hence, reject } H_0, \text{ accept } H_1.$$

The entire acceptance/rejection table is included on the following page.

## HYPOTHESIS ACCEPTANCE TABLE

$\alpha = .01$

QUESTION NO      ACCEPT  $H_0$       REJECT  $H_0$

|       |     |     |
|-------|-----|-----|
| 1a    |     | x   |
| 1b    | x   |     |
| 1c    |     | x   |
| 1d    |     | x   |
| 2a    | x   |     |
| 2b    | x   |     |
| 2c    | x   |     |
| 2d    |     | x   |
| 3a    |     | x   |
| 3b    | x   |     |
| 3c    |     | x   |
| 3d    |     | x   |
| 3e    |     | x   |
| 3f    | x   |     |
| 4     | x   |     |
| 5     |     | x   |
| 6     |     | x   |
| 7     |     | x   |
| 8     |     | x   |
| 9     |     | x   |
| 9a    |     | x   |
| 9b    |     | x   |
| 9c    |     | x   |
| 10    |     | x   |
| 11    | x   |     |
| 12    | x   |     |
| 13    |     | x   |
| 14    | N/A | N/A |
| 15    | x   |     |
| 16    |     | x   |
| 17    |     | x   |
| 18    |     | x   |
| 19    |     | x   |
| 20    |     | x   |
| 21    |     | x   |
| 22    |     | x   |
| 23    |     | x   |
| 24    |     | x   |
| 25-29 | N/A | N/A |

Appendix 3

SELECTION FREQUENCY AND SUM OF SELECTIONS

28. Select five of the following abilities in order of their importance in successful performance as a program manager. Rank them using #1 for the most important criterion and #5 for the last of your selections.

| NO. TOTAL         |     | FREQUENCY |  |  |
|-------------------|-----|-----------|--|--|
| Ranking Order:    |     |           |  |  |
| 145               | 56  |           |  | Ability to write well and present complex issues clearly.  |
| 145               | 42  |           |  | High persuasion abilities.                                 |
| 176               | 55  |           |  | Ability to brief frequently and well.                      |
| 233               | 60  |           |  | Ability to interface with high ranking officers/officials. |
| 316 $\frac{1}{2}$ | 114 |           |  | Overall high communication skills ability.                 |
| 233               | 74  |           |  | High ability in interpersonal relations.                   |
| 322 $\frac{1}{2}$ | 106 |           |  | Ability to think imaginatively.                            |
| 242 $\frac{1}{2}$ | 84  |           |  | Technical ability to analyze complex problems.             |
| 264 $\frac{1}{2}$ | 93  |           |  | Ability to think in the broadest range possible.           |
| 51                | 12  |           |  | Ability to apply regulations and standing procedures.      |
| 317 $\frac{1}{2}$ | 137 |           |  | Ability to identify problems.                              |

~~29. Additional Instructions: After completing the questionnaire, please look over the questions asked and list below the five most significant questions (by number) for describing the overall profile of a program manager.~~

~~30. List any one aspect which you feel is more important than those we have included in questions 1 thru 28.~~



Appendix 4

QUESTION 29

| <u>QUESTION #</u> | <u>FREQUENCY</u> | <u>RANKING ORDER</u> |
|-------------------|------------------|----------------------|
| 1                 | 11               | 17                   |
| 2                 | 3                | 27                   |
| 3                 | 87               | 1                    |
| 4                 | 10               | 19.5                 |
| 5                 | 30               | 9                    |
| 6                 | 38               | 7                    |
| 7                 | 15               | 14                   |
| 8                 | 9                | 23                   |
| 9                 | 49               | 4                    |
| 10                | 17               | 13                   |
| 11                | 22               | 12                   |
| 12                | 10               | 19.5                 |
| 13                | 9                | 23                   |
| 14                | 4                | 25.5                 |
| 15                | 4                | 25.5                 |
| 16                | 13               | 15                   |
| 17                | 10               | 19.5                 |
| 18                | 28               | 10                   |
| 19                | 9                | 23                   |
| 20                | 12               | 16                   |
| 21                | 23               | 11                   |
| 22                | 51               | 3                    |
| 23                | 41               | 5                    |
| 24                | 40               | 6                    |
| 25                | 10               | 19.5                 |
| 26                | 0                | 28                   |
| 27                | 37               | 8                    |
| 28                | 86               | 2                    |
|                   |                  |                      |

Appendix 5

QUESTION 25

| 0-18 mos | 19 mos - 3 1/2 yrs | > 3 1/2 ≤ 5 1/2 yrs | > 5 1/2 yrs |
|----------|--------------------|---------------------|-------------|
| 0        | 15                 | 16                  | 1           |
| 0        | 2                  | 9                   | 6           |
| 0        | 7                  | 8                   | 2           |
| 0        | 10                 | 18                  | 5           |
| 0        | 4                  | 11                  | 13          |
| 0        | 2                  | 13                  | 0           |
| 0        | 2                  | 15                  | 1           |
| 0        | 42                 | 90                  | 28          |

QUESTION 26

| 0-18 mos | 19 mos - 3 1/2 yrs | > 3 1/2 ≤ 5 1/2 yrs | > 5 1/2 yrs |
|----------|--------------------|---------------------|-------------|
| 1        | 18                 | 11                  | 1           |
| 1        | 1                  | 3                   | 8           |
| 2        | 7                  | 8                   | 0           |
| 0        | 18                 | 11                  | 4           |
| 2        | 3                  | 6                   | 12          |
| 0        | 9                  | 14                  | 0           |
| 1        | 7                  | 6                   | 4           |
| 7        | 63                 | 59                  | 29          |

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