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# DEFENSE SYSTEMS MANAGEMENT COLLEGE



## PROGRAM MANAGEMENT COURSE INDIVIDUAL STUDY PROGRAM

CMSEP  
A SYSTEMS APPROACH TO CONTRACT MANAGEMENT  
  
Study Project Report  
PMC 77-1  
  
Thomas A. Pawlow  
Major USAF

FORT BELVOIR, VIRGINIA 22060

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CMSEP

A SYSTEMS APPROACH TO CONTRACT MANAGEMENT

Individual Study Program  
Study Project Report  
Prepared as a Formal Report

Defense Systems Management College  
Program Management Course  
Class 77-1

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by

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May 1977

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DEFENSE SYSTEMS MANAGEMENT COLLEGE

STUDY TITLE: CMSEP: A SYSTEMS APPROACH TO CONTRACT MANAGEMENT

STUDY PROJECT GOALS:

To investigate a systems approach to contract management that can be utilized by other agencies within the DOD having cognizance over prime contractors, and identify problems encountered and lessons learned in the development of such a program.

STUDY REPORT ABSTRACT:

The purpose of the study project was to understand and evaluate a management system currently being utilized by the Air Force Contract Management Division termed Contractor Management System Evaluation Program (CMSEP) which is used in evaluating prime contractor management systems and practices.

Although CMSEP is unique to the Air Force, the study project concludes that the program has significant merit and should be considered by other agencies within DOD that are involved with contract management of prime contractors, as the program is designed to prevent adverse impact on cost, schedule or performance on government acquisitions caused by contractor management system deficiencies.

The evaluation of CMSEP did, however, provide and continues to provide important "lessons learned" in establishing and implementing a program of this magnitude. Described in this report are several problem areas that developed since the inception of the program that required and/or require management attention and action.

SUBJECT DESCRIPTORS: Contract Management  
Contractor Management System Evaluation Program (CMSEP)

NAME, RANK, SERVICE

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May 1977

## EXECUTIVE SUMMARY

The Contractor Management System Evaluation Program (CMSEP) developed by the Air Force Contract Management Division is designed to prevent adverse impact on cost, schedule or performance on government acquisitions caused by contractor management systems deficiencies. This is accomplished through continuous evaluation of the contractor's systems for existence, adequacy, and compliance with documented system requirements to ensure maximum effectiveness in attaining an efficient and economical operation.

The CMSEP emphasizes prevention of defects rather than reactive contract management. Program elements include a series of Management System Indicators (MSI's) and several condition questions associated with each MSI that are directed at a specific contractor management system and evaluated by Air Force Plant Representative personnel.

Although several problems and "lessons learned" have evolved during development and implementation, the program has "weathered the storm" and is now an effective management tool in promoting the prevention of defects by ensuring the existence and operation of adequate contractor management systems. The program is specifically tailored to plant cognizant organizations and should be considered for use by other DOD agencies that are responsible for contract management at prime contractor facilities.

### ACKNOWLEDGEMENTS

I would like to express special appreciation to the staff of Headquarters, Air Force Contract Management Division for providing much of the historical data necessary to complete this study. In addition, a special thanks is in order to the numerous individuals providing informal comments to the author concerning various aspects of the CMSEP.

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SECTION I  
INTRODUCTION

A Systems Approach

There have been several schools of thought concerning a proper definition of the management process. However, in today's environment this management process is looked upon more and more as a system, characterized by a set of regularly interacting and independent elements, the movement of which is controlled by means of a monitor or feedback device to achieve a desired end or objective. Carrying this definition one step further then, a management system is one that is geared toward the accomplishment of organizational goals and objectives designed and operated by people in performing the functions of planning, organizing, directing, controlling, etc.

Prior to the evolution of the Contractor Management System Evaluation Program (CMSEP) by the Air Force Contract Management Division (AFCMD), there was no single evaluation tool or systematic method for reviewing all essential elements of a contractor's management system during contract performance. Although many segments of a contractor's management system are addressed piecemeal through contractual reporting requirements, none provided AFCMD and the Air Force Plant Representative Office (AFPRO) with continuing visibility concerning the overall effectiveness of the contractor's management operation throughout the life of the contract.

Purpose of the Study

The purpose of the study project is to gain a thorough understanding and examine the effectiveness to date of the CMSEP. In order to do this

and set the stage for subsequent comments and profitable discussion, a definition of CMSEP must be explicitly stated and understood. The CMSEP is:

"A program designed to prevent adverse impact on cost, schedule or performance on government acquisitions, caused by contractor management systems deficiencies, through continuous evaluation of these systems for existence and adequacy, and for compliance with documented system requirements." (1:3-1)<sup>1</sup>

Additionally, the CMSEP is used in accomplishment of the AFCMD mission as defined in AFSCR 23-16:

"AFCMD acts as the primary Air Force agency performing contract management functions at contractor plants, assigned by DOD to the Air Force, for plant cognizance; supports program managers and buying agencies of the Government in accomplishing their missions through effective management; and continuously evaluates contractor management systems and practices to ensure their maximum effectiveness in attaining an efficient and economical operation." (2:1)

The concept of CMSEP relates to a systems analysis approach to contract management of major defense contractors. It is a management tool used in the surveillance of prime contractors in order to assure good design, adequate production planning and manufacturing techniques, economical procurement and estimating practices and acceptable material management systems.

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<sup>1</sup>This notation will be used throughout the report for sources of quotations and major references. The first number is the source listed in the bibliography. The second number is the page in the reference.

SECTION II  
HISTORY AND EARLY DEVELOPMENT

Management Indicators

The initial development of CMSEP can be traced to a campaign initiated by the Air Force Systems Command in November 1970 to reduce the number of recurring reports required throughout the command. (3:140) As a result of this effort, a significant number of reports required by the AFCMD from field detachments was eliminated. In place of these reports the Commander of AFCMD instituted a Management Indicator System in April 1971 during an AFCMD Commanders' Conference. The system consisted of approximately 300 questions directed at specific areas of a contractor's operations. The system was designed to provide both the AFCMD Commander, as well as detachment commanders, with a systematic and uniform management technique for reviewing all areas of contractor operations needing Air Force management visibility and control.

Of interest here is that the indicators were divided into two categories - program oriented and plant-wide oriented. In other words, some indicators were directed at operations within the plant pertaining to specific programs, i.e., F-15 configuration control, B-1 engine production planning, etc., while plant-wide indicators applied to activities conducted throughout the contractor facility regardless of program, i.e., maintenance of measuring and test equipment, contractor crew member use of check list procedures, cost estimating techniques, etc.

Each indicator was reported monthly to AFCMD and assigned a color code as follows:

- GREEN - Acceptable in the judgment of the detachment commander.
- RED - A problem existed that already has had a significant effect on cost, schedule, or performance of the product.
- YELLOW- A problem existed that could have a significant effect on cost, schedule or performance of the product.

A standard format was used for reporting that described the problem, source, impact, action required to solve the problem, action taken to date and a predicted "get-well" date. The first input was submitted by detachment commanders in July 1971. (3:140-143)

A key point to be made here is that for the first time a system had been developed that singled out from the mass of voluminous data generated by AFCMD detachments those specific areas considered vital to the management of contracts in the existing weapon system procurement environment.

During the next few years AFCMD refined the Management Indicator System by reducing and simplifying the number of indicators. In addition, a regulation was issued governing the system and AFCMD survey teams began using management indicators to assist them in evaluating contractor operations in the field. Also, red and yellow reports were now forwarded to the appropriate system program director. (4:161)

Comments on the merit and worth of Management Indicators were solicited from system program directors in the spring of 1973. Comments reflected improved communications between the system program office (SPO)



and the AFPRO but also reflected that those indicators identifying problems were of little value because the program office already knew of the existence of the problem. AFCMD responded that it was interested less in the problem itself than in what caused it, otherwise a continual job of fire fighting weapon system problems would be shared by both the AFCMD and SPO. AFCMD also expressed a concern that the contractor would not discuss the fact that improved management efficiency could have significantly reduced costs and heartburn along the way if the SPO was passive to the management indicators. The dialogue between the program offices and AFCMD pointed out a lack of understanding of the purpose and philosophy of prevention which was the intent of the management indicators. (5:61)

#### Development of MSI's and CMSEP

In an attempt to further refine the program, an internal study was conducted by AFCMD in mid-1973. The results pointed out several deficiencies which prompted the Commander of AFCMD to place a moratorium on all headquarters' reviews of management indicators late in August 1973, and to launch a large-scale reexamination of the system. Some of the deficiencies disclosed by the AFCMD study group included:

1. Emphasis was being placed on the information reporting aspects of the system rather than on the actual use of the information to provide necessary control and obtain contractor corrective action.
2. Field reception was poor. Detachment personnel considered the system just another reporting requirement and the program was not being used for management surveillance and control.



The report also addressed the question of how to obtain corrective action by the contractor if serious resistance occurred. The contractor's short-term cash flow position could be threatened by withholding progress payments, or his long-term market position affected by using the information as inputs to pre-award surveys and source selection boards. (6)

A full-scale AFCMD study team set out to upgrade and revise the Management Indicator System. The team envisioned the new system as a means of ensuring that the right people were looking in the right places at the right times to prevent adverse impacts on product costs, schedules, and performance.

As a result of the study, several major changes in the Management Indicator System were effected. Deficiencies were no longer reported by program but rather by contractor management systems since the root cause was invariably a failure in a management system. Hence "Management Indicators" became known as Management System Indicators (MSI's). The total number of MSI's was reduced to approximately 70. However, "condition questions" were developed for each MSI to probe the MSI's area of coverage. Two MSI's were made the responsibility of the detachment commander to ascertain whether the contractor's chief operating official had stated his objectives, problems, and assignments of authorities and responsibilities to his functional area managers. The new system also placed considerable emphasis on the relationship between the MSI's and the quality requirements outlined in MIL-Q-9858A. The color coding was also revised as follows:

- GREEN - Satisfactory operations within the area covered by the MSI.
- YELLOW - A condition requiring corrective action has been discovered and contractor corrective action has been or will be requested.
- RED - The detachment commander has, or intends to, become personally involved with contractor management in resolving a condition, or has brought it to the attention of the contractor's chief operating official.
- BLUE - The full impact of a condition requiring corrective action has not yet been assessed.
- BLACK - The condition question has not yet been evaluated.

The program was briefed to AFCMD personnel, detachment commanders and chiefs of the detachment's major functional divisions at an MSI conference and workshop in January 1974. This resulted in another change in the title of the program to "Contractor Management System Evaluation Program (CMSEP). In addition to the workshop, a conference of ranking aerospace industry executives from approximately 20 major facilities assembled at Kirtland AFB to discuss the new program with the Commander, AFCMD.

The CMSEP was fully implemented in February 1974 and, as a result, the headquarters-led survey teams were significantly reduced since the CMSEP now accomplished, on a continuing basis, what the surveys had done only periodically. (5:63-72)

Since mid-1974 to the present, additional refinements and changes were made to the CMSEP. The program and philosophy as it exists today will be examined in the following two chapters.

SECTION III  
PHILOSOPHY OF CMSEP

Systems Analysis

The CMSEP makes use of systems analysis or a systems approach in the evaluation of a contractor's management system and practices. This concept was emphasized by the Commander, AFCMD to all detachment commanders as early as May 1974:

"Don't lose sight of our objective for a minute. I want you to look at contractor management systems! I think we have been spending our time trying to find out if the contractors' working folks are making mistakes. If they are, it may be because they haven't been told what they are supposed to do. Have you noticed you don't see the top guy until we have a cost, schedule or performance problem? And when they do appear - what's the topic of conversation? It's an explanation of how it happened, and what they are going to do to fix it. I want them, and us, looking for the fixes before it happens!" (7:2)

This systems approach now allows the AFCMD to conduct a continuous, thorough and searching evaluation of how well a contractor is managing his operations as it oversees the spending on over 100 major Air Force, Navy, Army and NASA programs. According to the Vice Commander, AFCMD, in the July 1976 issue of Aviation Week and Space Technology, the CMSEP has endeavored to shed its "green eyeshade image" of the past:

"We are contract management now, not just contract administration, which really is a function of auditing. We are not the green eyeshade guys anymore." (8:39)

Various management systems are developed and implemented by aerospace contractors in an attempt to insure their program is completed within

cost, schedule and performance. Hence, if a problem develops that threatens this goal, this mechanism, the management system must be looked at for system deficiencies.

#### Prevention by Early Involvement

The key is for AFPRO personnel to be thinking "systems" on a daily basis. Emphasis is thus placed on the need for correction of the causes rather than the symptoms of problem areas. The philosophy of prevention rather than reaction is imperative. Causes of acquisition problems must be identified as early as possible and attention focused on getting the contractor to take corrective action. In today's environment of tight budget constraints, the government cannot afford to wait for the contractor to make a mistake and then get him to fix it. Problems must be identified early to avoid cost, schedule or performance impact. This philosophy of early involvement and prevention was stressed by the Commander of Air Force Systems Command in a letter to all Air Force buying activities emphasizing the concept and importance of CMSEP:

"The CMSEP is an important tool for maintaining confidence in our ability to manage Government contracts and should be utilized to the maximum extent practical.

The CMSEP has led to early contract administration involvement in the overall program management effort, with a resulting shift of management focus from problem correction to problem prevention. Broadening the application of CMSEP--to include information obtained from its use in pre-award surveys, source selection, and similar buying agency/program office efforts will add further strength to our contract management efforts and overall systems acquisition mission." (9)



### Continuous Evaluation

By utilizing CMSEP, all functional areas within an AFPRO cooperate in a total systems evaluation approach rather than taking a narrow view as in the past. However, in order to be effective, systems evaluation must be done on a continuous basis. In other words, AFPRO personnel need to be aware of the fact that every document or item of hardware developed by the contractor and reviewed by the government is the product of a contractor management system, and that a defect in the product might indicate a problem in the management system that produced it. This concept of continuous evaluation is paramount to the effectiveness and success of the CMSEP. (I:3.1)

### Aid to Program Managers

AFCMD's mission includes supporting program managers and buying agencies of the Government in accomplishing their mission through effective contract management. The CMSEP provides a tool for these agencies to quickly assess the sufficiency of the contractor management systems, and if an active interface is on-going between these buying agencies and AFCMD, the magnitude and frequency of program problems should be reduced. All program managers serviced by AFCMD should utilize the output of the CMSEP in assessing the contractor's management systems that, if deficient, could result in serious program impact. Within the Air Force the importance of CMSEP as a tool for program managers was emphasized by the Commander, AFSC in a recent letter to the three major product divisions:



"The Contractor Management System Evaluation Program (CMSEP) is a very useful management tool that should be utilized by System Program Directors. It supplies program managers greater visibility of the entire acquisition process. Furthermore, the independent assessments of contractor management capabilities that are part of the CMSEP reduce the need for periodic surveys of contractor operations. I urge each of you to take full advantage of this innovative approach to system management and communicate its importance to the working levels of the System Program Offices." (10)

#### Contractor Involvement

Criticism by some contractors has been directed at the CMSEP for imposing a new government management system on the contractor. The inference here is that the system requires manpower, time and effort on the part of the contractor which will result in additional costs being charged to the government. The CMSEP is NOT a contractual requirement. Contractors are neither requested or directed to establish or maintain any activity solely for the support of the CMSEP since the contractor is not contractually required to participate. However, a review of the condition questions embodied in the CMSEP discloses approximately 76% are based on contractual requirements which must be complied with by the contractors. The others are based on generally accepted good business practices which would normally be found and practiced by these types of industries. Hence, CMSEP imposes no system on contractors. It is a Government system with the analysis and administrative effort performed by Air Force Plant Representative personnel.

The philosophy of CMSEP is that of preventive contract management

utilizing a systems approach in a continuous evaluation of a contractors systems for existence, adequacy and compliance with documented system requirements. These elements, as well as the evaluation methodology, will be discussed in the next chapter.

SECTION IV  
PROGRAM ELEMENTS AND METHODOLOGY

Definitions

As previously pointed out in the definition of the CMSEP, emphasis is placed on the continuous evaluation of a contractor's systems for existence, adequacy and compliance with documented system requirements. Before discussing the evaluation process and methodology currently in use, I have extracted from AFCMDR 178-1 the key program elements that must be identified and briefly discussed.

1. Contractor Management System - The objectives, policies, and the assignment of authorities and responsibilities passed by the chief operating official to his functional area managers who, in turn, develop the implementing procedures and work instructions necessary to accomplish their assigned responsibilities. When properly structured, the contractor management system includes an internal audit capability to discipline the system.
2. Internal Self Audit - A documented method of periodic examination by contractor management to assure compliance with established policies, procedures, and work instructions.
3. Management System Indicators - The basic component of the CMSEP. Each MSI is a question directed at a discrete contractor management system. In addition, a narrative statement is included that describes that segment of the contractor management system which the MSI is intended to cover.
4. Condition Question - A series of specific questions or probes for each MSI used by AFPRO personnel to identify an existing or potential problem, and to determine the overall status of each MSI.

5. Assessment Criteria - Contain the elements used to test the adequacy of an acceptable contractor management system. These yardsticks are in the form of short statements or questions and relate to each condition question. Sources include ASPR clauses, MIL-Stds, regulations, etc., that describe the features of an acceptable management system.
6. Compliance Criteria - These are extracts from the contractor's written procedures used to determine if contractor personnel are conforming to documented system requirements.
7. Horizontal Communication - A procedure used by the AFPRO to ensure a problem identified in one functional area that may impact other functional areas is communicated to that area. This communication process is established by the AFPRO and referenced at the end of each MSI.
8. System Existence - A system is considered to exist if it is manifested in the contractor's documented policies and procedures.
9. System Adequacy - A system is adequate when it is complete and meets all contractual requirements; or if contractual requirements are not explicitly stated, is consistent with widely accepted industry or general business practices. Condition questions and assessment criteria are used to make a determination of adequacy.
10. System Compliance - The contractors conformance to documented system requirements.
11. Color Code - The method used to identify the status of each condition question based on the results of evaluation. The current color codes are as follows:
  - Black - the condition question has not yet been evaluated.
  - Green - no system deficiencies exist within the element described by the condition question.

Yellow/Green - A system deficiency has been identified which has no immediate significant impact on Government programs. However, the contractor has developed a written corrective action plan that has been approved by the AFPR and is meeting the established milestones.

Red - A system deficiency has been identified which has immediate significant impact on Government programs.

Red/Green - A system deficiency has been identified which has immediate significant impact on Government programs. However, the contractor has developed a written corrective action plan that has been approved by the AFPR and the contractor is meeting the established milestones.

12. Form 47 - The method used to communicate to the contractor the existence of a system deficiency. (See Appendix A)
13. Condition Question Folder - A folder or notebook that is maintained for each condition question. Minimum acceptable documentation has been determined by AFCMD for use by each of the AFPRO's.

Although the above terminology could easily be expanded, I have identified what I think are the key elements of the CMSEP that require a thorough understanding in order to relate the concept and philosophy of the program to the actual evaluation process. Assessment criteria and compliance criteria for each condition question may be determined and documented in the condition question folder prior to beginning the initial evaluation process. However, additions or deletions to both criteria can occur at any time. An exception to the need for assessment and compliance criteria will be explained subsequently.



Each MSI is assigned to an individual within the AFPRO who is responsible for total evaluation of that MSI and applicable condition questions. Individual condition questions can be evaluated by several individuals, however, responsibility for the overall evaluation remains with the individual responsible for the MSI.

Evaluation Responsibility.

MSI's have been developed for the following functional areas in the AFPRO:

- CM - Command Management
- EN - Engineering
- PD - Manufacturing Operations
- QA - Quality Assurance
- IR - Industrial Property
- TM - Contract Administration
- SM - Subcontract Management
- FO - Flight Operations
- SE - Safety

Within this CMSEP framework, there are three distinct types of MSI's. (See Appendix B) Two top level or command management indicators, CM-1 and CM-2, ensure that the chief operating official has stated his objectives, policies and assignments of authorities and responsibilities to his top level executives and functional managers. CM-1 addresses the contractor's technical management whereas CM-2 relates to the financial or business management systems. The responsibility for evaluation of these MSI's rests with the AFPR as they form the foundation on which the contractor management system is built, by ensuring there is a flowdown of the company's policies to lower level management. Assessment and compliance

criteria are not required at this level, as determination of existence is all that is required. The AFPR, in his judgment, determines if the contractor's objectives, policies and assignments of authorities and responsibilities collectively demonstrate the existence of a system from the top down through the organization. (1:5-1)

The evaluation of the first MSI within each functional area, i.e., PD-1 is similar to that accomplished for CM-1 or CM-2. It is accomplished at a lower level within the organization and is the responsibility of the AFPRO functional Division Chief. The Division Chief evaluates for existence within his functional area and must also judge the adequacy of the contractor's procedures and determine compliance. However, he is not required to develop formal assessment or compliance criteria as is the case with all other functional MSI's assigned within the AFPRO. All other MSI's relate to a functional contractor management system.

#### Evaluation Methodology

Since the author has experience within the functional area of Contract Administration, I will now describe the methodology and evaluation process that was developed for a relatively simple MSI condition question TM-7a, which was later incorporated as an example in AFCMDP 178-12. Although the evaluation will result in assigning a green color code, I will attempt to show what would occur during the evaluation process if a system deficiency was detected. TM-7,

"Does the contractor have an effective system  
for settlement of terminated contracts/subcontracts?"

deals with contractor termination procedures, and condition question (a)

probes a specific aspect of those procedures:

"a means for promptly stopping work to the extent directed by the termination notice and assure that subcontractors do likewise?"

Until the initial evaluation has started, this condition question would be color coded black. The development of a frequency evaluation schedule is required showing how often each condition question is evaluated, i.e., monthly, quarterly, etc. Prior to starting the evaluation, acceptable compliance and assessment criteria in many cases can be developed and approved by appropriate supervision. (See Appendix C)

The first step would be for the evaluator to determine if the system element identified by the condition question is also identified in the contractor's policies and procedures. The evaluator would document the policies and procedures that support this determination of existence. A system deficiency would exist if procedures could not be identified and a preliminary Form 47 would alert the contractor of the system deficiency. (See Appendix A for Sample Form 47). However, in this sample case, the contractor has procedures in existence that address prime contractor terminations and purchase order terminations which satisfies the requirement for existence.

Next, the evaluator determines adequacy by checking the contractor's documented system to see if it satisfies the assessment criteria that has been developed. In the case of our example, several portions of the Armed Services Procurement Regulation (ASPR) were identified as assessment criteria,

i.e., ASPR 7-203.10bi and a brief statement included explaining this requirement of ASPR. The evaluator is responsible for documenting all assessment criteria and the contractor policies and procedures that satisfy these criteria. In other words, the contractor's procedures must adequately address the assessment criteria identified by the evaluator. If not, a system deficiency would exist and again a preliminary Form 47 would identify the deficiency to the contractor. In our sample, we assume that all assessment criteria were satisfied.

Finally, the evaluator must make a compliance check. This is accomplished by the use of compliance criteria and provides for continuous evaluation of contractor implementation and compliance to his established procedures. The compliance criteria are extracted from the contractor's written procedures and the evaluator must ensure the contractor is doing what his procedures say he will do. In our example, the contractor's written procedures indicated that all departments would be notified to stop work within 24 hours after receipt of a termination notice from the Government. In this example, we used only one criteria and examined only one termination docket to check for compliance to simplify the illustration. In checking the termination docket on hand, it was found that departments were notified within 24 hours. Therefore, the condition question would be color coded green and documented accordingly in the condition question folder. (See Appendix C) I must emphasize that we discussed only a single assessment criteria and compliance criteria rather than several



that would actually be developed and used in conjunction with each condition question being evaluated.

If a system deficiency occurred at the compliance stage, the contractor would be advised by using a preliminary Form 47 identifying the deficiency and requesting corrective action. If, however, only one out of ten termination dockets reviewed showed a deficiency, this would not necessarily indicate a system deficiency, and the condition question could very well be color coded green. This is when an understanding of a systems approach becomes so important to the evaluator.

The results of our evaluation would be reviewed by AFPRO supervision and if a red or yellow condition was determined to exist and concurred in by the supervisor, a preliminary Form 47 would be used to put the contractor on notice as to the deficiency. If the contractor agreed with the evaluation, but was unable to correct the deficiency within the monthly reporting cycle, he would be required to submit a written corrective action plan and the formal Form 47 would reflect a yellow/green or red/green condition. Of course if there was disagreement on the part of the contractor, the Formal Form 47 would remain red or yellow. It should be pointed out that although the program is based on continuous evaluation, formal reporting to the contractor and AFCMD is accomplished on a monthly basis reflecting the frequency evaluation schedule established by the AFPRO. The information is also passed to the appropriate program affected.

The evaluator in our example would review any changes to the contractor's written procedures as they occur since system adequacy and



compliance would need to be re-evaluated. If there were no changes, the determination of compliance would continue on a scheduled basis.

The example of evaluation methodology previously discussed describes the sequential flow of decisions that must be made by AFPRO personnel in the evaluation of contractor management systems. It is, however, a very basic look at how the system operates. During checks for existence, adequacy and compliance, many decision points are encountered by the evaluator and supervisor that can require additional effort, meetings, etc. The purpose, remember, is preventive contract management and, in order to accomplish this, AFPRO personnel must think contractor systems in their day-to-day activities.

Other program aspects, not yet addressed in great detail based on the scope of this paper, i.e., documentation, training, etc., will be discussed in analyzing the success of the program to date in the following chapter.

SECTION V  
ANALYSIS OF PROGRAM

An Executive Management Tool

Having worked with the CMSEP for over two years, I consider this systems approach to preventive contract management an effective tool in the hands of each Air Force Plant Representative Office. If used correctly, it allows the AFPR to view the contractor's operations with a synergistic approach and avoid a fire fighting approach on a program by program basis. By continuously evaluating the contractor's systems, deficiencies can be detected early that would eventually have a cost, schedule or performance impact on all programs. To date, this fact is documented by the number of yellow or red condition questions that have surfaced at each of the detachments within AFCMD and the resulting contractor corrective action that has taken place. A few examples utilizing the philosophy of CMSEP include early detection of foreign object damage problems on the B-1 bomber engines with resultant contractor corrective action, improved methods to insure the proper alignment of contractor fixtures resulting in reduced government and contractor inspections and significantly improved proposal submittals due to inadequate cost estimating techniques and practices that were extending the negotiation cycle. As the program continues to mature, early detection of system deficiencies should continue to result in significant cost savings to the government.

A recent study of the Defense Contract Administration function conducted by OSD (Procurement) addressed the concept and philosophy of the CMSEP. The Study Team viewed the program as an effective approach to contract management and recommended it become the basis for a DCAS system that meets the following policy statement:

"The CMSE Program is based upon the fundamental principle that product quality is the direct result of management quality and that the flow of management leadership to achieve product quality must start at the very top of a contractor's organization. It is also based on the assumption that a responsible contractor dedicated to the delivery of a quality product within cost and on schedule will develop a management system in an orderly and planned manner, assure its understanding by all functional organizations and validate compliance with the system through an effective internal self-audit." (11:5)

The report concludes that the CMSEP provides a more penetrating insight into the internal operations of the contractor and should be considered for future use within the DOD.

The CMSEP did not evolve, however, without problems. In fact, the system is still experiencing some growing pains as it continues to mature. I think it is important to briefly discuss some of these concerns and "lessons learned" in the implementation of a management system of this magnitude.

#### Training and Education

A thorough understanding of a management system of this nature is required by each individual within the AFPRO. However, it is not enough to brief the workforce and consider the training block completed. If

CMSEP is to be the core management system within AFCMD, training should be a continuous thing. With transfers, new hires, military moves, etc., it is paramount that Division Chiefs insure that these individuals are knowledgeable and familiar with the program. Unfortunately, this is still not true in all cases. If an individual does not evaluate a condition question, there still must be an understanding of the program so that everyone can effectively input day-to-day findings or problems to the appropriate condition question or MSI monitor. Another problem closely related to training is the education level of those individuals conducting the analysis. Many do not have a college degree and, therefore, cannot grasp or completely understand a systems analysis approach. Although AFCMD has made significant improvements since 1971 in updating the education level of its work force, the numbers still reflect that as of 30 June 1976, only 46% of procurement employees (GS-1101, 1102, 1103, 1150) have a baccalaureate degree. This fact only reinforces the need for increased emphasis on both formal and informal training within AFCMD in not only the mechanics of CMSEP, but how to evaluate a contractors operation using a systems approach.

#### Resistance to Change

A common occurrence with any new management system is resistance to change on the part of many within the organization. The system cannot and should not be forced on these individuals. It is the responsibility of the AFPR and Division Chiefs to "sell" the approach to their people.



This was not evident in all cases in the early stages of the program. The CMSEP is not an additional workload, but rather complements and ties together all activity within the AFPRO. This fact must be understood for the program to be effective. CSCS/C, progress payments, engineering drawings, etc., are all tied together in the CMSEP. I would be naive to state that the program has been accepted by everyone within AFCMD. However, the burden rests on the shoulders of the AFPR and Divisions Chiefs to mesh the CMSEP with each individuals daily operations.

#### Revisions and Changes

Frequent updates, revisions and changes to the program have created hostility on the part of many within the AFPRO's. Although these refinements are necessary with a relatively new program, I feel strongly that these changes should be accomplished no more than annually. I base this belief on the fact that many of the interim changes create a significant amount of additional paperwork, i.e., revised frequency schedules, additional condition question folders, etc., that detract from the real meaning and purpose of the CMSEP. Hence evaluators become "turned off" because of the time spent in updating the files. Most AFPRO's establish annual frequency evaluation schedules by calendar year and thus new changes, questions, etc., should be held by AFCMD until approximately November of each year to correspond with the updating occurring at each of the AFPRO's.



Part of this uncertainty and frustration on the part of field personnel over the last 2 to 3 years can be traced to an extensive turnover of Directorate heads and Command section personnel since August 1974. During this timeframe many transfers and retirements occurred including four Commanders. Presently, this trend has slowed and the current stability should result in more confidence in the Headquarters by detachment personnel. In the past, guidance emanating from the Headquarters staff and functional directorates to field questions and inquiries has not always been consistent and, in some cases, conveyed opinion rather than AFCMD policy. To preclude this from occurring, an AFCMD focal point could be established through which all inquiries and headquarters responses would funnel to insure this necessary consistency.

#### Documentation

Documentation is an important part of the CMSEP. An audit trail needs to be available so that anyone can reach the same conclusion as the evaluator by reviewing the condition question folder. However, documentation is secondary to the actual analysis and evaluation process. In some cases, management personnel are more concerned with how the folder looks, if it is completely in order, etc., rather than reviewing the methodology used and judgments made by the evaluator in his analysis of the contractor's particular system. This approach defeats the purpose of the CMSEP and results in evaluators becoming more concerned with format than content. Each AFPR and Division Chief must insure that documentation requirements are not displacing the primary purpose of the CMSEP.

### Higher Headquarters Support

If the CMSEP is to be effective, it must be given more than lip service by the system program offices, higher headquarters and OSD. This then necessitates a thorough understanding by all program office personnel that interface with the AFPRO's and not simply by the commander of these organizations. Each program manager should be knowledgeable of and use the output of the CMSEP in dealing with the contractor. If this does not occur, the program is totally ineffective. Higher headquarters and OSD officials should also understand the concept and philosophy of the program as it can and should be used where applicable in source selection, DSARC decisions, etc. The AFPR should use every opportunity to familiarize program managers, higher headquarters officials, etc., with the program and how he is using it to get the job done.

In looking back over the last several years, I feel that the program could have been implemented somewhat slower with more emphasis in the initial stages on education, training and field feedback before full implementation. The importance of understanding a new system cannot be overlooked and was a concern to the Commander, AFCMD as early as June 1974 in a letter to all detachments,

Get down into the bowels of your organization and make certain everyone understands (1) the purpose of the CMSEP; (2) your policies and direction concerning the CMSEP; and (3) that they fully understand their role in the CMSEP - all the same way. (12)

Continued emphasis needs to be placed in this area by all detachments.

## SECTION VI

### CONCLUSIONS

The Air Force Contract Management Division has developed a unique and successful systems approach to contract management which can be used in evaluating contractor management systems and procedures. The Contractor Management System Evaluation Program (CMSEP) focuses on preventive rather than reactive contract management and is based on continuous evaluation of the contractor's systems in order to prevent adverse impact on cost, schedule or performance on government acquisitions.

The CMSEP has proven effective with AFCMD and should be considered for adoption by other Service agencies that have the responsibility for plant cognizance over prime contractors. The CMSEP ensures continuous evaluation of the contractor's management systems that affect all programs within plants. It is an excellent tool for program managers to continuously use to assess the contractor's management systems and insure that system deficiencies are corrected in a timely manner prior to cost, schedule or performance impact.

Although the CMSEP is fully implemented within AFCMD it's future success will depend on active involvement, and the full support of all program offices especially within the Air Force Systems Command. Additionally, continued effort on the part of HQ, AFCMD should be placed on insuring everyone understands the concept and philosophy of CMSEP and utilizes the systems approach and evaluation methodology in a consistent manner.



SAMPLE

AS OF DATE: \_\_\_\_\_ Month/Year

# MANAGEMENT SYSTEM INDICATOR ANALYSIS



ORGANIZATION: (Det # and Location) \_\_\_\_\_  
CONTRACTOR: (Contractor and Division) \_\_\_\_\_

MANAGEMENT #  
SYSTEM INDICATOR:  
CONDITION QUESTION:

TM-7 Does the contractor have an effective system for settlement of terminated contracts/subcontracts?

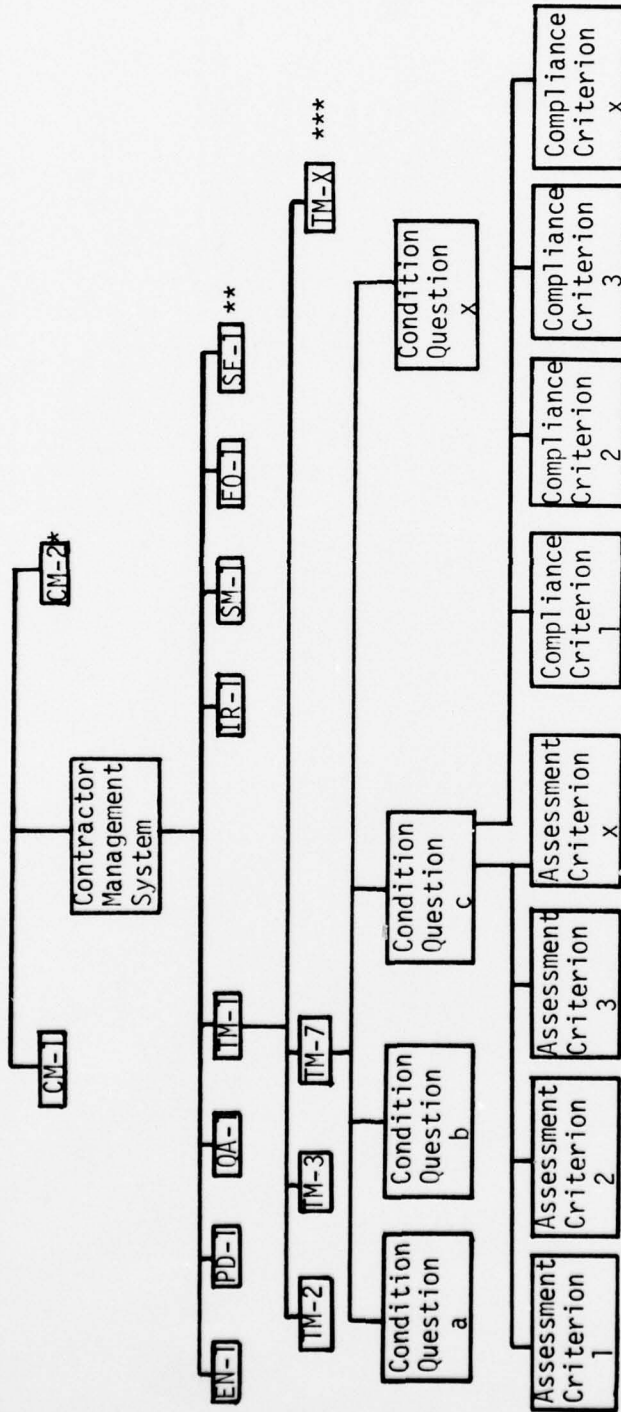
a A means for promptly stopping work to the extent directed by the Termination Notice and assure that subcontractors do likewise?

R Y R G Y/G MONTH

APPENDIX A  
FOR OFFICIAL USE ONLY (When filled in)



TYPES OF MSI'S  
WITHIN CMSEP



- \* Top Level Command Management
- \*\* Top Level Functional
- \*\*\* Other Functional



CONTRACTOR: Company B

MSI #: TM-7

MIS: Does the contractor have an effective system for settlement of terminated contracts/subcontracts?

CQ DESIGNATOR: TM -7a

CQ: A means for promptly stopping work to the extent directed by the Termination Notice and assure that subcontractors do likewise?

MSI OPR: CAPT Tom Hott

CQ OPR: CAPT Tom Hott

FREQUENCY OF CQ EVALUATION: Quarterly (Feb, May, Aug, Nov)

HORIZONTAL COMMUNICATION REFERENCE:

IR 7, 10, 11

SM 4

APPROVAL:

\_\_\_\_\_  
JOHN E. SMITH  
Chief, Contract Administration Division

Assessment Criteria

- |    |                     |   |
|----|---------------------|---|
| 1. | ASPR 7-203.10 b i   | Stop work on date and to extent specified by Termination Notice (Cost Reimbursement)                          |
| 2. | ASPR 7-203.10 b iii | Terminate all orders and subcontracts (Cost Reimbursement)  |
| 3. | ASPR 7-103.21 b i   | Stop work on state and to extent specified by Termination Notice (Fixed Price)                                |
| 4. | ASPR 7-103.21 b iii | Terminate all orders and subcontracts (Fixed Price)   |
| 5. | ASPR 7-302.10 b     | Termination for Convenience of Government   |
| 6. | ASPR 8-205 (i) (ii) | Stop work on terminated portion of prime contract and advise TCO of circumstances precluding stoppage of work |

Compliance Criteria

- |     |                    |  |
|-----|--------------------|--|
| 1.  | C.P. 3.155 E I 4   | Termination notice to departments involved within 24 hours               |
| 2.  | C.P. 3.155 E I 5   | Notify Manufacturing Division within 8 hours to stop work                |
| 3.  | C.P. 3.155 E I 6   | Handling of materials on parts affected by termination                   |
| 4.  | C.P. 3.155 E I 7   | Request for cost estimate on terminated work                             |
| 5.  | C.P. 3.155 E I 12  | Schedule for Special Test Equipment in custody of company                |
| 6.  | C.P. 3.155 E I 14  | Review excess GFAE items   |
| 7.  | C.P. 3.155 E II 1  | Prepare A320 Form credit for return of raw materials                     |
| 8.  | C.P. 3.155 E II 3  | Prepare report of terminated material                                    |
| 9.  | C.P. 3.155 E II 9  | Attach A560A termination inventory tag to material                       |
| 10. | C.P. 3.155 E III 6 | Prepare schedule for parts and approve transfer of material              |
| 11. | C.P. 3.155 E IV 1  | Screen files for open P.O.s applicable to terminated portion of contract |
| 12. | C.P. 3.155 E IV 3  | Issue telegraphic notice to suppliers within 24 hours                    |
| 13. | C.P. 3.155 E IV 6  | Establish followup with suppliers  |
| 14. | C.P. 3.155 E V 1   | Prepare list of tools terminated   |
| 15. | C.P. 3.155 E VI 1  | Determine items of work and stop work immediately                        |

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JOHN E. SMITH  
Chief, Contract Administration Division

EVALUATION RESULTS SUMMARY

- I. A. Color of Condition Question Green  
B. Date of last evaluation August
- II. Identification of Contractor's System (Existence)  
C.P. 3.155 Prime Contract Terminations, 12 Feb 71  
C.P. 6.425 Purchase Order Terminations, 28 Feb 75  
C.P. 1.421 Auditing, 18 Jun 71

III. Adequacy of Contractor's System:

- A. Completeness (Contractor procedures do exist relative to this Condition Question)

C.P. 3.155 para E I 4  
C.P. 3.155 para E I 5  
C.P. 3.155 para E IV 3

- B. Results of Assessment Criteria Application

Based on a comparison with assessment criteria Company B procedures equal or exceed these standards and the system is considered adequate for this evaluation.

<u>Assessment Criteria</u>	<u>Satisfied By</u>
1	C.P. 3.155 E I 4; C.P. 3.155 E VI 1
2	C.P. 3.155 E IV 1, 3, 6
3	C.P. 3.155 E I 4; C.P. 3.155 E VI 1
4	C.P. 3.155 E IV 1, 3, 6
5	C.P. 3.155 E I, II
6	C.P. 3.155 E I, IV

IV. Results of Compliance Check

A review of a termination docket revealed contractor is satisfactorily meeting those provisions identified in applicable Contract Procedure; therefore, condition question is color-coded green. (see worksheet)

\_\_\_\_\_  
JOHN E. SMITH  
Chief, Contract Administration Division

WORKSHEET

Date August

Person(s) Contacted Jon Jones, Contractor Coordinator - Company B

Findings:

Contract 31000-71-0-0000 Termination Docket 1C112 was selected for evaluation of this condition question for August 1975. Contract was partially terminated by the Government on 26 August 1974. Evaluator reviewed memo #014B-7856 which was dated 26 August 1974. Contractor met 24 hour criteria established by para E I 4 of C.P. 3.155. P.O. 72P110 was reviewed for work stoppage message to notify vendor of termination. Company B message ATB-756-113 dated 27 August 1974 was on file. This satisfies requirement of para E IV 3 of C.P. 3.155.

Captain Tom Hott



#### BIBLIOGRAPHY

1. AFCMD Pamphlet 178-12 15 Oct 1975, Management Analysis, CONTRACTOR MANAGEMENT SYSTEM EVALUATION GUIDE.
2. AFSCR 23-16, 17 April 1975.
3. AFCMD (AFSC) Historical Publication, HISTORY AIR FORCE CONTRACT MANAGEMENT DIVISION, July 1970-Jun 1971, Volume I Narrative.
4. AFCMD (AFSC) Historical Publication, HISTORY AIR FORCE CONTRACT MANAGEMENT DIVISION, July 1971-June 1973, Volume I Narrative.
5. AFCMD (AFSC) Historical Publication, HISTORY AIR FORCE CONTRACT MANAGEMENT DIVISION, July 1973-Jun3 1974, Volume I Narrative.
6. AFCMD Management Indicator Study, 1973.
7. Letter to all Detachment Commanders, 30 May 1974, CMSEP from Commander.
8. Aviator Week and Space Technology, 19 July 1976, page 39, Command tightens Contract Control Policies.
9. Letter, 22 Apr 1975, Contractor Management System Evaluation Program (CMSEP) TO: Divisions, Centers, AFETR, and Laboratories.
10. Letter, 3 May 1976, to SAMSO, ASD, ESD. Contractor Management System Evaluation Program.
11. DOD Study Team Reports, A Study to Improve Management of the Department of Defense Contract Administration Mission, 25 March 1976.
12. Letter, 25 June 1974, to all Detachments, CMSEP/MSI Programs from Commander, AFCMD.
13. AFCMD Regulation 178-1, Contractor Management System Evaluation Program, 15 April 1975.
14. AFCMD Regulation 178-1, Contractor Management System Evaluation Program, 15 October 1974.