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Assessment Of The Air Force's Planning For The Technology Repair Center Concept

Department of Defense

Planning for operational or organizational change contributes significantly to the success or failure of the change. This report identifies opportunities for improving procedures for managing future operational or organizational changes in the Department of Defense.

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JULY 2, 1976



UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

LOGISTICS AND COMMUNICATIONS
DIVISION

B-172707

The Honorable
The Secretary of Defense 5

Dear Mr. Secretary:

This is our report on the Air Force's planning for redistributing depot-level maintenance workload by technology rather than by weapons system. The report identifies opportunities for your Department to improve its procedures for managing operational or organizational changes.

This report contains recommendations to you on page 5. As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions he has taken on our recommendations to the House and Senate Committees on Government Operations not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the Director, Office of Management and Budget; the Secretary of the Army; and the Chairmen and ranking minority members of the House and Senate Committees on Appropriations, Government Operations, and Armed Services.

Sincerely yours,

Fred J. Shafer

Fred J. Shafer
Director

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ABBREVIATIONS

DOD	Department of Defense
GAO	General Accounting Office
TRC	technology repair center

D I G E S T

Projected dollar and manpower reductions in the depot maintenance area have motivated the Air Force to study possible ways of reducing costs without decreasing support capability.

After evaluating the alternatives of a phaseout of one of the five Air Logistics Centers and of a continual reduction of manpower at all five Centers, the Air Force decided that the best means to reduce maintenance costs while insuring high usage of depot maintenance facilities and capabilities was to redistribute depot-level maintenance workload by technology rather than by weapons system. This redistribution, which concentrates the workload into a single repair facility when items require similar skills, equipment, and facilities in the repair process, is called the technology repair center concept.

FINDINGS AND CONCLUSIONS

The Air Force recognized the need for operational change and developed the proper mechanics for planning it. However, the benefit-cost projections used to justify the technology repair center concept may be questionable because (1) the depot maintenance cost accounting system could not provide adequate data on Air Logistics Center maintenance operations, (2) the audit trail was insufficient to verify some benefits, and (3) the tracking mechanism used could not isolate benefits and costs attributable to the technology repair center concept from other ongoing projects. Due to these limitations a precise evaluation of the claimed benefits and costs was impracticable. (See pp. 2 to 5.)

RECOMMENDATIONS

The shortcomings noted in this report are not unique to the Air Force. GAO made similar observations in its assessment of the Army's reorganization during the 1970s (B-172707, Aug. 13, 1973). In view of the new cost-saving initiatives under consideration by the Department of Defense, GAO recommends that, for future operational or organizational changes, the Secretary of Defense insure that

- the services' cost accounting systems can provide adequate data on depot operations for making valid benefit-cost comparisons,
- adequate benefit-cost audit trails are established, and
- the tracking system used can isolate benefits and costs associated with the change from those of other ongoing projects.

AGENCY COMMENTS

The Department of Defense agreed that procedural improvements which would provide for better management of future operational or organizational changes are needed. The Department said that action already underway will substantially implement the recommendations made by GAO.

The Department of Defense believes that its current efforts to establish a uniform depot maintenance cost accounting system will provide adequate data on depot operations, allowing valid benefit-cost comparisons.

The Department of Defense will ask the Secretaries of the military services to insure that reviews of proposed major operational or organizational changes include an examination of the most appropriate planning for establishing benefit-cost audit trails.

The Department of Defense agreed that benefit-cost tracking systems should, to the extent practicable, isolate benefits and costs associated with a change from those of other ongoing projects.

The implementation of these corrective actions should improve management's ability to monitor changes of this type in the future. GAO plans to assess the effectiveness of these improvements in the future.

CHAPTER 1

INTRODUCTION

The concept of technology repair centers (TRCs) is the culmination and synthesis of a number of discrete yet ultimately interrelated efforts on the part of the Air Force to economize resources without decreasing support capability in the depot maintenance area.

The TRC concept is an operational realignment involving a selective concentration of depot maintenance workloads into a single repair facility when items require similar skills, equipment, facilities, and tools in the repair process. The concept presently applies to only two categories of repair--aerospace ground equipment and exchangeables--comprising about 14.8 million direct labor hours of a total of about 46.1 million direct labor hours for the entire depot maintenance program. The Air Force Logistics Command claimed that when consolidating workloads by technologies rather than by supply class or weapons system, the following benefits would accrue.

- The streamlining of depot maintenance management.
- Elimination of 1,153 overhead spaces.
- Concentration of maintenance functions into fewer buildings.
- Increased facility utilization.

The Air Force Logistics Command estimated the implementation of TRCs would cost about \$26 million but would result in recurring annual savings of \$18 million by eliminating overhead spaces. In addition, the Air Force Logistics Command would realize a one-time savings of \$18 million due to the cancellation or reduction of 16 depot plant modernization program projects.

CHAPTER 2

PLANNING FOR OPERATIONAL CHANGE:

AN ASSESSMENT OF THE TECHNOLOGY

REPAIR CENTER CONCEPT

Operational change, such as the one resulting from implementation of the TRC concept, is an accepted method of improving operations; however, improved management does not automatically result from such a change nor do benefits automatically accrue. Operational change can cause turmoil which can cause decreased productivity.

We evaluated the Air Force's TRC proposal in terms of four actions.

1. Diagnosing realignment problems.
2. Planning for change.
3. Implementing the change.
4. Following up on the change.

DIAGNOSING REALIGNMENT PROBLEMS

Determining if a problem exists and to what extent it exists is essential to any realignment analysis. If an analysis is to be more than an academic exercise, it must determine (1) the specific problems to be corrected, (2) the causes of these problems, and (3) the forces that are likely to work for and against change.

In our opinion, the Air Force adequately diagnosed its operational problems and seemed to establish rational and achievable goals. The rationale for the TRC concept was supported by a number of discrete yet ultimately inter-related efforts at the Air Force Department level which addressed problems related to Department of Defense (DOD) maintenance workload policy.

PLANNING FOR CHANGE

Our way of planning for change is to (1) diagnose the problem; (2) identify the objectives to be sought, including agreement by the key managers who will bring about the change; (3) consider alternative ways of achieving the

objectives and selection of a course of action from among the alternatives; and (4) define the plan for bringing about the change, including appropriate and realistic milestones.

We found that three of the four planning steps were successfully accomplished. Our examinations of the third step disclosed weaknesses as discussed below.

1. The objectives of the TRC concept were clearly defined.

--Streamline depot maintenance management and reduce overhead.

--Increase facility utilization from about 67 percent to about 83 percent.

--Reduce excess maintenance facilities.

--Improve productivity.

2. The Air Force considered three alternative approaches for meeting these goals.

--Perpetuate the present five Air Logistics Centers while absorbing continual manpower cuts through attrition and reduction-in-force.

--Reduce the number of Air Logistics Centers from five to four.

--Redistribute the depot-level maintenance workload by technology rather than by weapons system. This is the TRC concept.

3. The Air Force selected the TRC concept, and the factors the Air Force used to select this alternative appear to be reasonable. However, the claimed benefits and costs may be questionable because (1) the cost accounting system did not provide adequate data on Air Logistics Center maintenance operations, (2) the audit trail was insufficient to verify some benefits claimed, and (3) the benefit-cost tracking system did not isolate TRC-related benefits and costs from those of other ongoing projects. 1/

1/The cost accounting system has not been approved by the Comptroller General. The Air Force plans to submit this system as part of a major logistics management information system under development.

For example, we found that the depot maintenance cost accounting system did not record actual direct labor hours for the repair of an item nor accumulate individual job costs but used a computer extrapolation of standard direct labor hours which distorted unit repair costs. Similar shortcomings were noted by the Air Force Audit Agency in various reports as well as in our report entitled "An Industrial Management Review of the Maintenance Directorate, San Antonio Air Materiel Area, San Antonio, Texas" (B-159896, Apr. 11, 1974). We were unable to document or find a complete audit trail which could relate the positions eliminated to the Air Force's claimed personnel savings. We found that facility costs amounting to about \$12 million, which should have been charged to the TRC implementation because it directly benefited TRC maintenance activities, were charged to the Air Force's depot plant modernization program.

4. The TRC implementation plans seem reasonable in view of (1) the dialog within the Air Force before and after the TRC concept announcement, (2) the participation of all Air Logistics Centers in some aspect of the realignment, and (3) the establishment of realistic milestones for the realignment.

IMPLEMENTING THE CHANGE

Implementing any complex operational change requires careful planning and monitoring. A change of the magnitude of TRC involving ongoing activities must be implemented in a well-planned time sequence that will not disrupt required operations. Furthermore, since the organization's employees can greatly affect the success of the change, they must be convinced that the changes are for the best and are rational. If these requirements are not met, the changes, no matter how well engineered, may not meet the objectives.

We believe that the Air Force developed the mechanics necessary for the operational realignment. It developed time-phased schedules and other reports to monitor most aspects of the realignment at the key implementation milestones. However, the noted lack of an audit trail for claimed benefits and of a tracking mechanism which separates the TRC benefits and costs from those of other ongoing projects resulted in distorted progress reports.

The Air Force informed its employees on realignment-related matters. They briefed union officials and presented

closed-circuit television films to depot personnel explaining the realignment action.

FOLLOWUP ON CHANGE

Followup on change is important because it allows managers to fully weigh the benefits and costs of their decisions. It permits the measurement of progress toward stated goals and provides managers with an opportunity to make additional refinements. It also develops a history and permits an evaluation of the results of the changes which can be useful in evaluating alternatives on future changes.

The Air Force established the mechanics for followup. However, we believe that as a consequence of the aforementioned cost accounting, audit trail, and benefit-cost tracking problems, the followup phase will produce inadequate information.

CONCLUSIONS

The Air Force recognized the need for operational realignment and developed the proper mechanics for planning for this change. However, the benefit-cost projections used to justify the TRC concept may be questionable because (1) the current depot maintenance cost accounting system could not provide adequate data on depot maintenance operations, (2) the audit trail was insufficient to verify some benefits claimed, and (3) costs and benefits attributable to TRC were not isolated from those attributable to other ongoing projects. These limitations made a precise evaluation of the claimed TRC benefits and costs impracticable.

RECOMMENDATIONS

The shortcomings noted in this report are not unique to the Air Force. GAO made similar observations in its assessment of the Army's reorganization for the 1970s (B-172707, Aug. 13, 1973). In view of the new cost-saving initiatives DOD is considering, we recommend that for future operational or organizational changes the Secretary of Defense insure that

- the services' cost accounting systems can provide adequate data on depot operations for making valid cost-benefit comparisons,
- adequate benefit-cost audit trails are established, and

--the tracking system used can isolate benefits and costs associated with the change from those of other ongoing projects.

AGENCY COMMENTS

On May 18, 1976, the Department of Defense furnished comments on this report. (See app. I.)

DOD agreed that procedural improvements which will provide for better management of future operational or organizational changes are needed. It said that action already underway will substantially implement the recommendations made by GAO.

DOD believes that its current efforts for establishing a uniform depot maintenance cost accounting system will provide adequate data on depot operations to allow valid benefit-cost comparisons.

DOD will ask the Secretaries of the military services to insure that reviews of proposed major operational or organizational changes include an examination of the planning appropriate for establishing benefit-cost audit trails.

DOD agreed that benefit-cost tracking systems should, to the extent practicable, isolate benefits and costs associated with a change from those of other ongoing projects.

The implementation of these corrective actions should improve management's ability to monitor changes of this type in the future. GAO plans to assess the effectiveness of these improvements in the future.



ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301

INSTALLATIONS AND LOGISTICS

1 8 MAY 1976

Mr. Fred J. Shafer, Director
Logistics and Communications Division
United States General Accounting Office
Washington, D. C. 20548

Dear Mr. Shafer:

This letter is in reference to your draft report, "Assessment of the Air Force's Planning for the Technology Repair Center Concept" (OSD Case #4319). We are pleased to learn your findings support, in general, the Air Force efforts to improve maintenance through application of its Technology Repair Center (TRC) concept.

We agree with your recommendation for procedural improvement which will provide for better management of future operational or organizational changes. Action already underway will substantially implement the recommendation that the Secretary of Defense insure that

- o The Services' cost accounting systems can provide adequate data on depot operations for making valid cost/benefit comparisons
- o Adequate benefit/cost audit trails are established
- o The tracking system used can isolate benefits/costs associated with the change from those of other on-going projects.

Our comments and progress toward implementation of the three parts of the recommendation are summarized below:

Part No. 1 - We believe our current efforts for establishing a uniform depot maintenance cost accounting system will fully satisfy the first part of your recommendation. As your office probably is aware, guidance already has been issued to the Services (DoDI 7220.29-H, "DoD



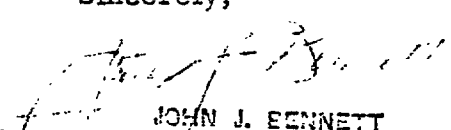
Depot Maintenance and Maintenance Support Cost Accounting and Production Handbook" published 21 October 1975.) The Handbook guidance includes a requirement for job order cost accounting which will be used to gather depot maintenance costs. Standard costs will be used for reporting costs of direct materials and direct labor only when such costs and related variances are appropriately accounted for at the job order level. The guidance is being implemented at five activities on a pilot basis; full implementation at all maintenance depots is planned for 1 October 1976.

Part No. 2 - The Service Secretaries will be asked to assure that reviews of proposed major operational and organizational changes include a critical examination of the planning appropriate for establishing benefit/cost audit trails.

Part No. 3 - We agree benefit/cost tracking systems should, to the extent practical, isolate benefits/costs associated with a change from those of other on-going projects. In some instances allocation of the cost/benefits between interrelated projects may circumstantially rest with management judgment. The important thing is that best judgment be exercised and that any benefits derived from a change be allocated to the project to which the related costs are charged. In the instance of the TRC and Depot Plant Modernization Programs, we believe good management judgment was exercised by the Air Force in the allocation of cost/benefits between the Programs and that benefits were properly associated with related costs. Nevertheless the GAO recommendation to refine the ability to isolate cost/benefits will be included as part of the action to the Military Departments noted under Part No. 2 above.

We consider the GAO recommendation appropriate, and welcome the opportunity to comment on the draft report.

Sincerely,


JOHN J. BENNETT
Principal Deputy Assistant Secretary of Defense
(Installations and Logistics)

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FOR ADMINISTRATION OF THE
ACTIVITIES DISCUSSED IN THIS REPORT

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Donald Rumsfeld	Nov. 1975	Present
James R. Schlesinger	July 1973	Nov. 1975
William P. Clements, Jr. (acting)	May 1973	June 1973
Elliot L. Richardson	Jan. 1973	May 1973
DEPUTY SECRETARY OF DEFENSE:		
William P. Clements, Jr.	Jan. 1973	Present
Kenneth Rush	Feb. 1972	Jan. 1973
ASSISTANT SECRETARY OF DEFENSE (INSTALLATIONS AND LOGISTICS):		
Frank A. Shrontz	Feb. 1976	Present
Dr. John J. Bennett (acting)	Apr. 1975	Feb. 1976
Arthur I. Mendolia	Apr. 1973	Mar. 1975
Hugh McCullough (acting)	Feb. 1973	Apr. 1973
Barry J. Shillito	Jan. 1969	Feb. 1973
<u>DEPARTMENT OF THE AIR FORCE</u>		
SECRETARY OF THE AIR FORCE:		
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James W. Plummer (acting)	Nov. 1975	Jan. 1976
Dr. John L. McLucas	July 1973	Nov. 1975
Dr. Robert C. Seamans, Jr.	Jan. 1969	July 1973
ASSISTANT SECRETARY OF THE AIR FORCE (INSTALLATIONS AND LOGISTICS):		
Richard J. Keegan (acting)	Feb. 1976	Present
Frank A. Shrontz	Oct. 1973	Feb. 1976
Richard J. Keegan (acting)	Aug. 1973	Sept. 1973
Lewis E. Turner (acting)	Jan. 1973	Aug. 1973

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