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GAO

United States
General Accounting Office
Washington, D.C. 20548

General Government Division

B-249779

March 30, 1993

148875

The Honorable Michael B. Donley
Acting Secretary of the Air Force

Dear Mr. Secretary:

Total Quality Management (TQM) is a management approach that strives to achieve continuous improvement of quality through organizationwide efforts based on facts and data. TQM also focuses business processes on meeting the needs of customers, both internal and external. Although TQM traditionally has been associated with private sector organizations and their efforts to remain competitive and profitable, in recent years federal organizations have been attempting to implement TQM to cope with budget restrictions and better serve the public.

We recently surveyed federal installations to determine the extent of their use of TQM and learned that 68 percent of the installations surveyed were implementing TQM.[1] An installation, as defined by the Office of Personnel Management, is a unit with a specifically designated head who is not subject to on-site supervision by a higher level installation head and who has been delegated some degree of authority in the performance of personnel management functions. Our survey covered over 2,800 installations, such as Internal Revenue Service Centers, Social Security offices, military depots, and Air Force bases. One hundred fifty-one installations of the Department of the Air Force were included in this survey, and the purpose of this correspondence is to provide you a brief summary of the results as they apply to the Air Force as well as to compare Air Force results with the total results of all surveyed installations. We believe this information--particularly data on barriers to TQM--can be useful in your planning and as a baseline for judging future efforts.

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[1]Quality Management: Survey of Federal Organizations (GAO/GGD-93-9BR, Oct. 1, 1992).

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STATUS OF TQM

As figures 1 and 2 show, a significant number of government installations and Air Force installations reported implementing TQM. Figure 1 shows that about 68 percent of the federal installations responding to our survey reported they were starting or already implementing TQM. Figure 2 shows that 98 percent of the 151 Air Force installations responding to our survey reported that they were working on various phases of TQM. Additionally, three of the remaining five Air Force installations reported that they planned to implement TQM.

Figure 1: Percentage of Government Installations Implementing TQM

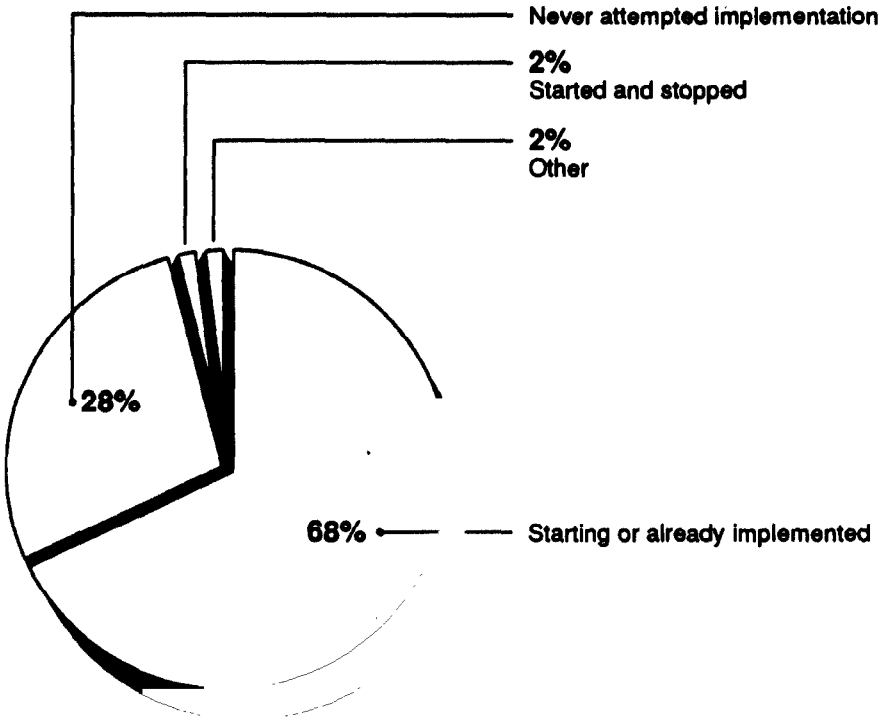
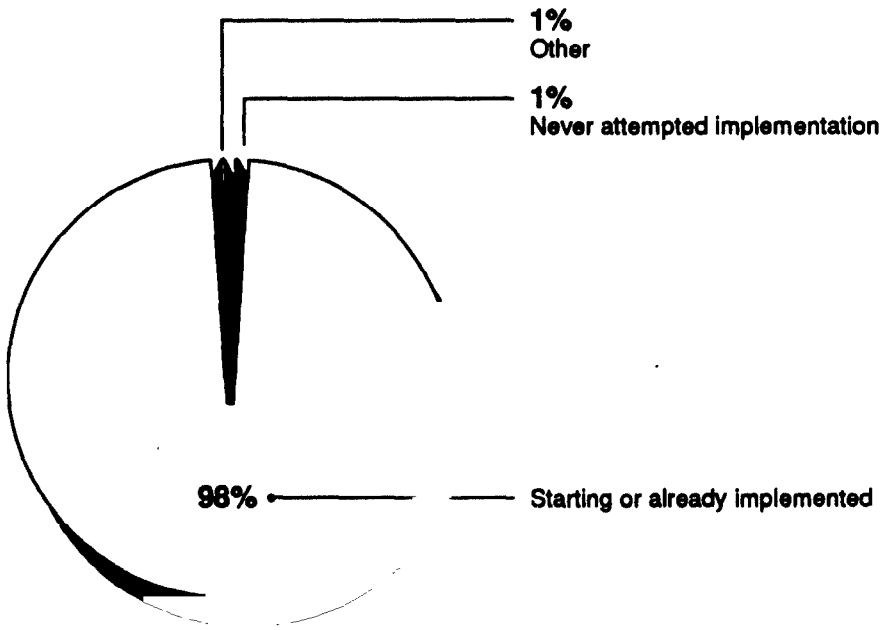
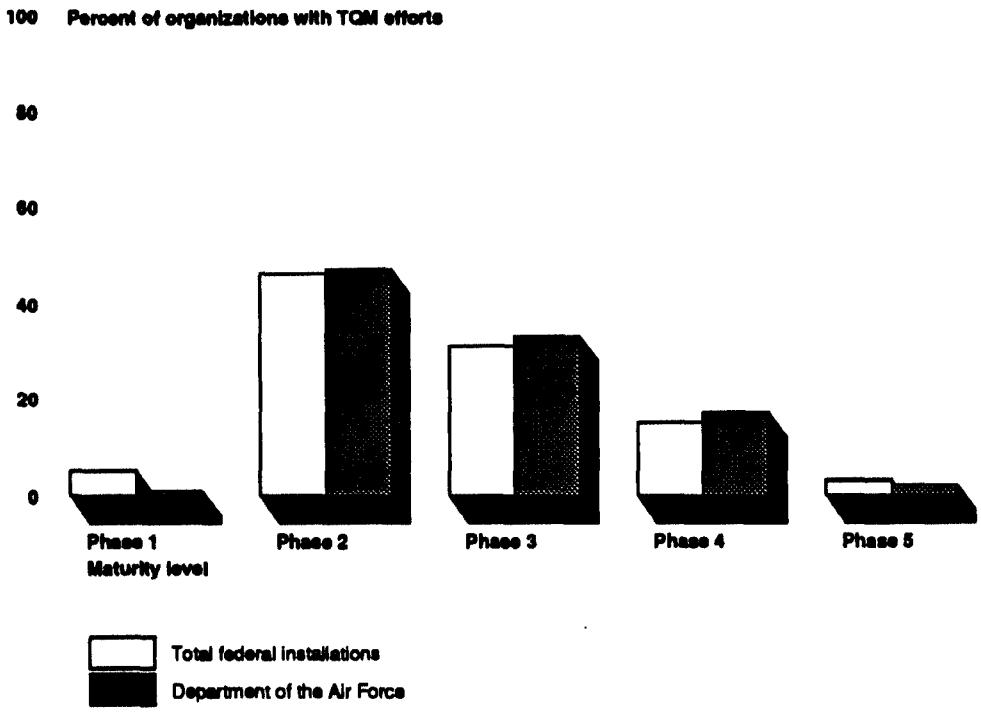


Figure 2: Percentage of Air Force Installations Implementing TQM



To obtain a picture of the status of federal TQM efforts, we asked installations to report their efforts in terms of a five-phase maturity scale. Maturity definitions ranged from Phase 1, preliminary TQM efforts, to Phase 5, institutionalized efforts that are achieving significant benefits (see enc. I for definitions). As figure 3 shows, 51 percent of the total federal installations responding to the survey reported being in Phase 1 or 2, while 48 percent of the Air Force installations reported still being in these early phases. The fact that many installations are in the early phases reflects the relative newness of Air Force efforts; 62 percent of the installations implementing TQM reported beginning TQM efforts within the past 2 years.

Figure 3: Status of TQM



In our survey of federal installations, we asked respondents about the extent of their involvement in 43 activities commonly undertaken by organizations involved in TQM. Such activities include providing training in TQM tools for employees, establishing quality councils or steering groups, and establishing problem-solving teams. Installations reported that their involvement in these activities increased as maturity increased. In other words, installations identifying themselves as more mature in TQM also more frequently said they were doing the 43 activities commonly associated with TQM.

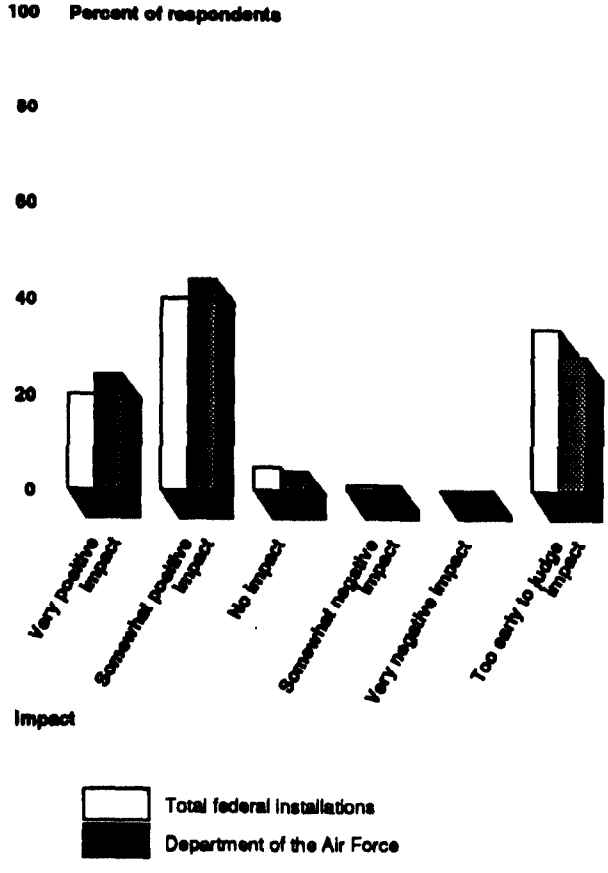
Comparing Air Force installations' involvement in these activities with reported maturity phases, we discovered that the Air Force generally reflected the same trend as in the total

survey--that is, as Air Force installations' maturity increased, they more frequently reported doing TQM activities. For example, 54 percent of the combined Phase 1 and Phase 2 installations provided training in TQM tools for employees, whereas 96 percent of the combined Phase 4 and Phase 5 organizations provided such training.

BENEFITS OF TQM

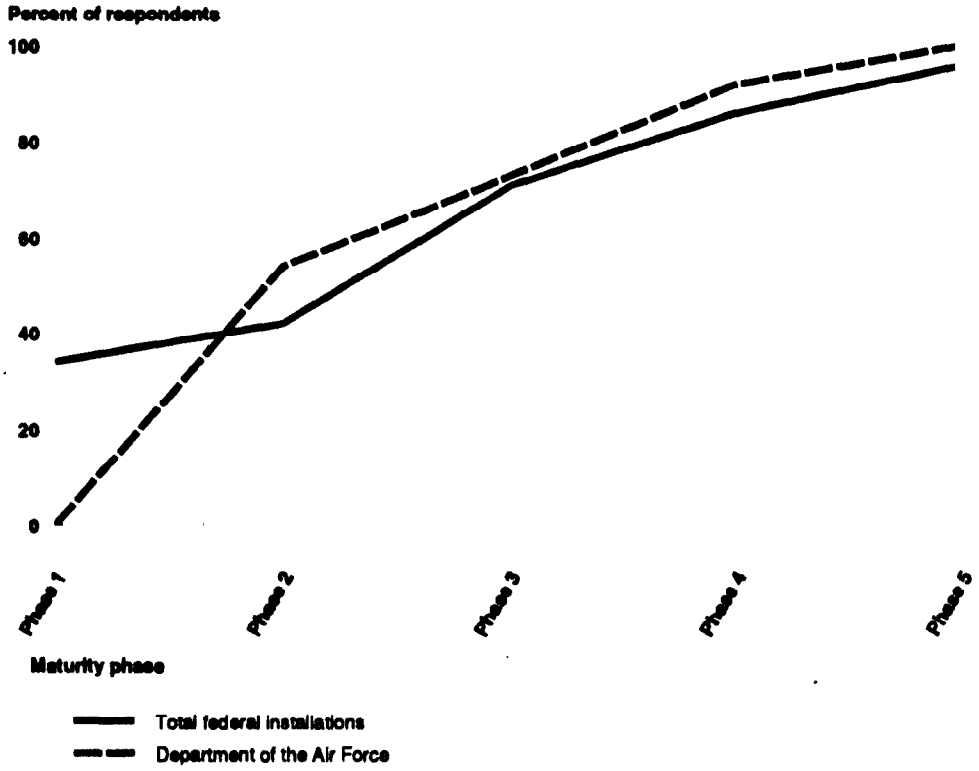
We considered benefits in two ways: (1) effect on external customers as reflected by overall organizational performance and (2) effect on internal customers as reflected by internal operating conditions. We asked respondents to assess TQM's effect on organizational performance in terms of productivity, reductions in costs, quality of products and services, overall service to customers, customer satisfaction, and timeliness. To depict the overall impact, we developed an index that is the average of responses to our questions on the degree of impact. Figure 4 compares Air Force and total federal responses and shows that 67 percent of the Air Force installations reported positive benefits, very few saw negatives to TQM, and 28 percent felt it was too soon to judge benefits. These results are similar to the overall survey results.

Figure 4: Impact of TQM on Performance



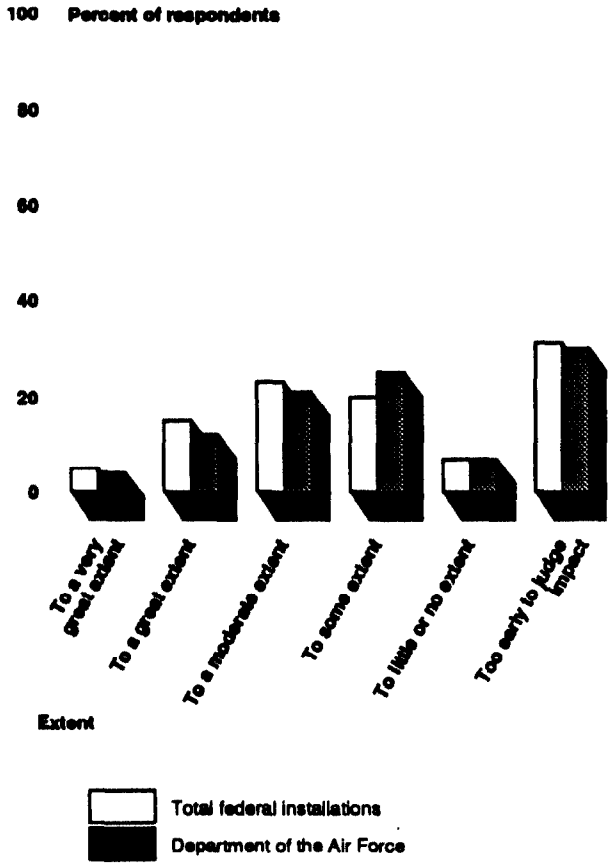
Reported benefits increased as maturity increased. We compared the composite index of responses on external benefits with maturity phases and learned that more mature installations reported greater benefits. Figure 5 shows, by maturity phase, the percentage of total federal respondents and the Air Force respondents reporting somewhat positive to very positive benefits. Except for Phase 1, we found Air Force results to be very similar to total federal results.

Figure 5: Respondents Reporting Increased Organizational Performance



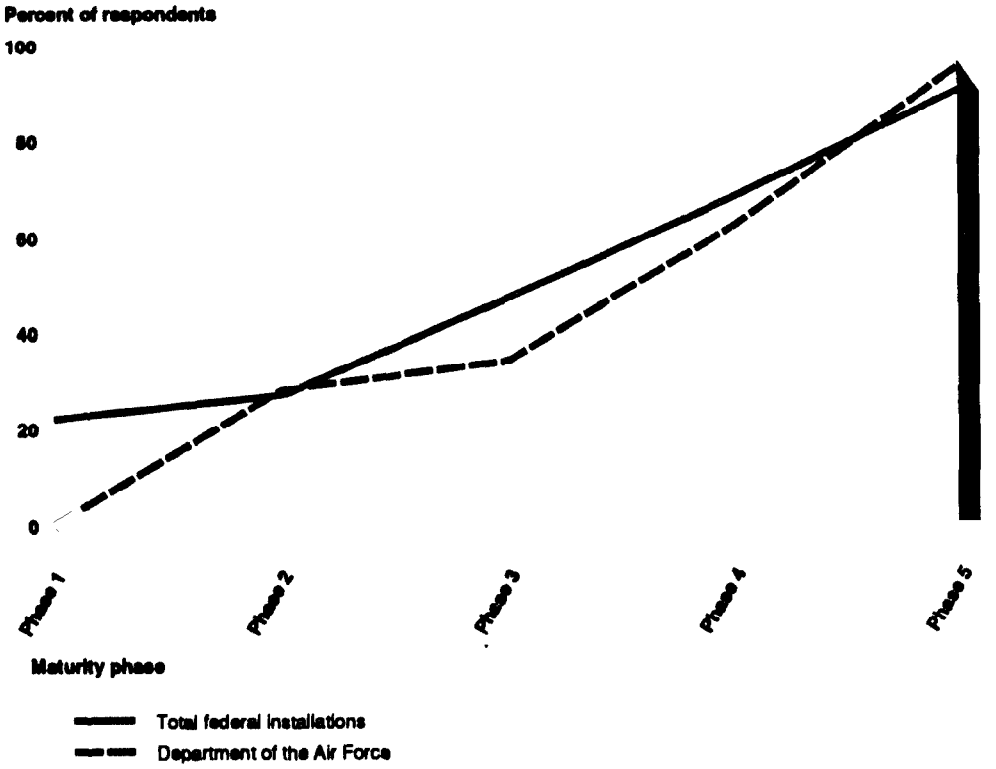
For internal operating conditions, we asked the installations to identify the impact of TQM on each of 13 internal operating conditions, such as communications and labor-management relations. To illustrate the benefits, we developed an index in the same manner as for the organizational performance indicators. Figure 6 compares the Air Force and total federal responses and once again shows that Air Force installations generally reported about the same benefits as the total of all surveyed federal installations.

Figure 6: Extent of Positive Impact on Internal Operating Conditions



In a manner similar to the overall organizational benefits, we compared the composite index of benefits with maturity phases and noted that reported internal conditions improved as maturity increased. Figure 7 shows the percent of respondents reporting a moderate to very great positive impact, by maturity phase, for both Air Force and the total federal respondents.

Figure 7: Respondents Reporting Positive Impact on Internal Operating Conditions



BARRIERS TO TQM

We asked all the federal installations we sent our recent survey to about the significance of 21 potential barriers to implementing TQM that had been identified through our research. Nine barriers were said to be moderate to very major problems by 39 percent or more of the total federal respondents.

As figure 8 shows, Air Force respondents generally concurred with the category of barriers identified by the total federal survey and the extent of the impact of these barriers. It should be noted that many of these barriers are related to employee issues, such as (1) employees do not believe they are empowered to make changes, (2) employees lack sufficient information on how to use TQM tools, and (3) employees lack information and training on TQM concepts and theory.

Figure 8: Respondents Reporting Barriers Are Moderate to Very Major Problems to Implementing TQM

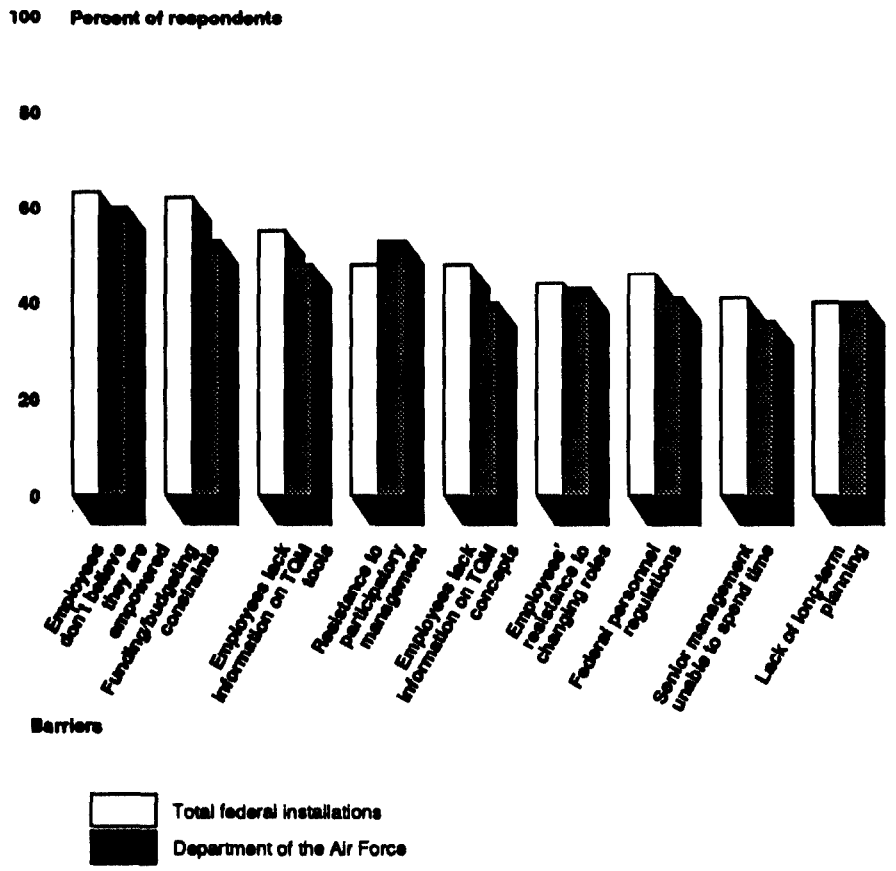
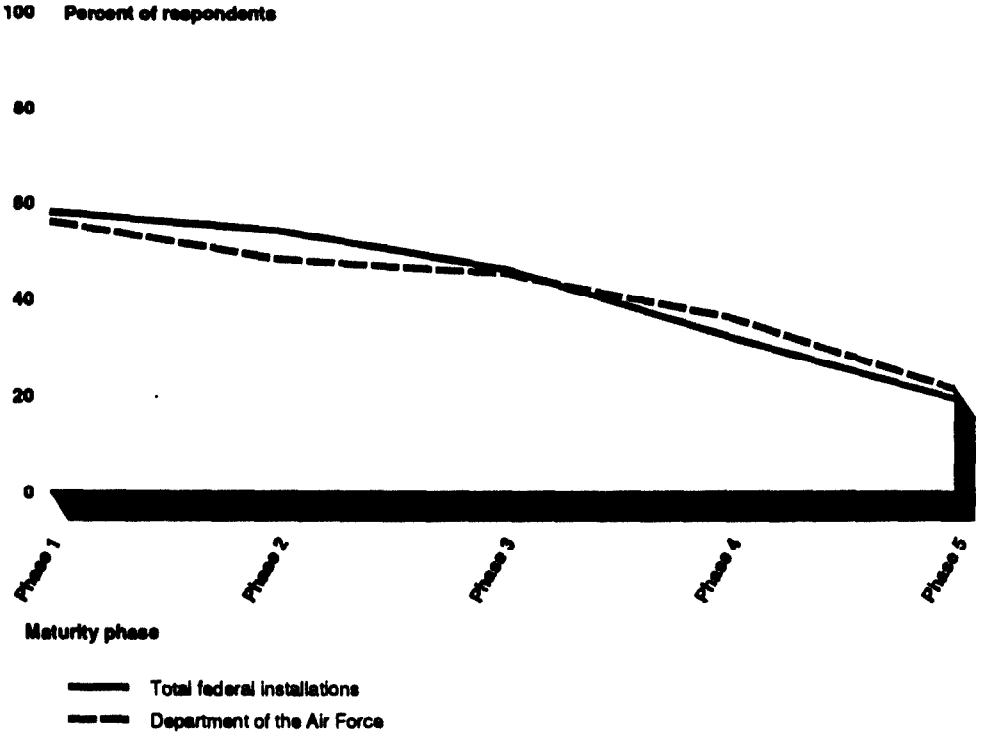


Figure 9 shows a composite index for the nine major barriers, by phase, reported by both the Air Force and total federal respondents. It illustrates that as maturity level increased, both Air Force installations and all of the federal installations surveyed viewed barriers as being less troublesome and significant.

Figure 9: Respondents Reporting Barriers Decrease With Maturity Level



SUMMARY

Our survey of federal TQM efforts indicated that as installations invested more time and effort in TQM activities, they matured in

the implementation of TQM, found that the barriers became less difficult, and reaped greater benefits. Although some differences were reported between Department of the Air Force TQM experiences and those of all federal respondents, overall Air Force respondents' message generally appeared to be similar.

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We have enclosed a copy of our report Quality Management: Survey of Federal Organizations (GAO/GGD-93-9BR, Oct. 1, 1992) to provide information on the background; results; and objective, scope, and methodology of the total survey.

We hope you will find this information useful in guiding your quality management initiatives and in improving service to your customers under today's budget constraints. We will make copies of this correspondence available to others upon request.

The major contributors to this correspondence are listed in enclosure II. If you have any questions, please call me on (202) 512-8387.

Sincerely yours,

J. William Gadsby
Director, Government Business
Operations Issues

PHASES OF TQM IMPLEMENTATION

PHASE 1 - DECIDING WHETHER TO IMPLEMENT TQM

Management is researching or deciding whether to implement TQM, but no formal decisions or activities have been initiated by top management. A few employees may have attended quality conferences or network meetings, but the installation as a whole has yet to be informed or involved in a TQM project.

PHASE 2 - JUST GETTING STARTED

TQM efforts are in the early planning and implementation phase. Management has made a formal decision to start TQM and has communicated this to the organization. The organization's mission and vision have been articulated. A few quality structures, such as quality councils, steering committees, or teams, have been established, and some awareness training has been given. Preliminary quality planning has been done. Pilot programs or newly initiated installationwide efforts to improve quality are included in this phase.

PHASE 3 - IMPLEMENTATION

Specific TQM processes designed to improve quality are in place. TQM training for management and employees is beyond the orientation/awareness stage and focuses on TQM tools and techniques and team-related activities. Measures of quality and productivity have been identified and specific goals have been set.

PHASE 4 - ACHIEVING RESULTS

The installation has a sustained TQM effort and has begun to achieve and document significant results. Systemic, cross-functional, and/or organizational achievements from the TQM effort have been realized.

ENCLOSURE I

PHASE 5 - LONG-TERM INSTITUTIONALIZATION

The installation has incorporated all of the principles and operating practices of TQM throughout much of the organization. The installation has documented substantial improvements in quality and customer satisfaction resulting from these efforts and is making consistent and continuous improvement throughout. An installation in this phase may have been recognized as a Quality Improvement Prototype Award winner or may be a recipient of the President's Award for Quality.

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