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Evaluation of Productivity Gain Sharing in Six Navy Organizations

Karyll N. Shaw
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13. ABSTRACT (<i>Maximum 200 words</i>) This report describes the Navy's general approach to Productivity Gain Sharing (PGS) as well as the PGS systems in six organizations. Factors that are conducive to the successful implementation of PGS are described. Findings of Time 1 data collection in a planned, on-going evaluation process are presented and discussed. Approximately \$12.8 million in gains was documented for FY88 and FY89 across the six PGS sites. Factors existing in the internal and external environments of the organizations are discussed in terms of their impact on the long-term success of the gain sharing systems.					
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Foreword

Previous research has shown Productivity Gain Sharing (PGS) to be an effective tool to reduce costs, increase productivity, and improve organizational climate. The purpose of this report is to describe the general approach to PGS adopted by the Navy, and show how it is applied in six Navy sites. An evaluation of the preliminary results of these PGS sites was performed. Factors contributing to the success of future implementations of PGS systems in Navy organizations were delineated.

This effort was conducted under the support of the Office of the Under Secretary of Defense, (Personnel and Readiness), Defense Civilian Personnel Management Service (Work Force Quality and Productivity Division) within reimbursable Work Unit O&M, DOD.

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Summary

Problem and Background

In response to two executive orders and based on the success of several incentive programs in its organizations, the Department of the Navy endorsed Productivity Gain Sharing (PGS) as a means to achieve productivity improvements. A goal was set to implement PGS in 10 organizations by the end of 1988.

Previous research has shown gain sharing to be an effective tool to reduce costs, increase productivity, and improve organizational climate. However, organization-wide PGS systems had not been developed or tested in Navy organizations.

Objective

The purpose of this report is to describe the Navy's general approach to PGS as well as the characteristics of six organizations' PGS systems, and to provide an evaluation of preliminary results of those six PGS systems. In addition, the report attempts to delineate factors that may enhance or detract from successful future implementation of PGS systems in Navy organizations.

Approach

A longitudinal approach to the evaluation of PGS was developed by the Navy. This approach includes the assessment of situational, structural, and implementation factors, as well as potential outcomes of the gain sharing systems.

Time-1 data were collected at six PGS sites. Questionnaires were completed by all hierarchical levels of employees assessing perceptions of organizational climate, understanding and support of PGS, and perceptions of top-management support for the system. Top management completed an additional survey assessing perceptions of environmental conditions which might affect PGS success. The PGS coordinators and/or comptrollers' offices provided data pertaining to organizational characteristics, the design of the PGS system itself, and potential outcomes of gain sharing.

Results

Approximately \$12.8 million in gains was documented for FY88 and FY89 across the six PGS sites. Half of these gains were allocated to the organizations and half to the employees. The average annual payout per employee was \$477.80. The average quarterly distributions ranged from \$0 to \$492 per employee. Costs of PGS design and implementation totaled approximately \$321,056, so the "return on investment" appears to be quite substantial.

Several conditions exist, however, which may detract from the future success of PGS in these and other Navy organizations. Gain sharing's success depends on top management's continued support of the system and for strong employee involvement systems as well. A positive organizational climate with open communication is another factor critical to PGS success. According to employees' perceptions, these factors do not appear to exist in these organizations.

While employees believed they could improve their performance and thereby contribute to the gain sharing pool, understanding of the PGS system was low across the sites. Finally, the decreasing levels of workload or tighter competition for existing work for Navy organizations, given the reductions in the overall defense budget, provide a major threat to PGS success.

Conclusions

The fact that gain sharing has been implemented in a variety of organizations, some in nonmanufacturing (harder to measure) environments, and the amount of gains achieved in these six organizations indicate that PGS systems can be designed successfully to attain desired results.

Several factors conducive to PGS success need to be established or strengthened in these and other Navy organizations, however, in order for PGS to contribute to the long-term success of the organization. Top management support for gain sharing principles, including employee involvement, must be developed and demonstrated to employees. Communications about the PGS plan itself, quarterly results, and organizational goals must be provided in a timely and complete manner, so that employees will understand how they can contribute to the organization's success.

The general threat of reduced workload, base closings, and reductions in personnel now felt across Navy organizations is a major threat to successful PGS implementation at this time. However, after it becomes clearer that certain organizations have the workload to support productivity gains, and given top-management support of PGS principles, the initial results of gain sharing reported here demonstrate that such organizations can achieve substantial gains under PGS systems.

Recommendations

1. Efforts should continue to establish additional PGS sites in the Department of Defense.
2. PGS sites should be organization-wide and should include comprehensive employee involvement systems in the design.
3. The evaluation of the PGS sites in this report should be continued to obtain longitudinal data.

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Introduction

Problem

In Executive Order 12552 of 25 February 1986, President Reagan directed the Federal Government to improve the quality and timeliness of its service to the public, and to achieve a 20% increase in the productivity of appropriate functions by 1992. In this order, productivity was defined as the efficiency with which resources are used to produce a government product or service at specified levels of quality and timeliness (Executive Order 12552, 1986).

Executive Order 12637 of 27 April 1988, modified the previous executive order. In this order, the overall goal for the federal establishment was to achieve an annual average increase in productivity of 3% in appropriate functions. This new order defined "appropriate functions" as those that produced measurable outputs in the form of products and services for the public, and defined "public" broadly to include any customer outside the organization. In contrast with the first order, the second also explicitly directed federal managers to encourage employee involvement in work-related decisions (Executive Order 12637, 1988).

In response to the executive orders and a subsequent Office of Management and Budget (OMB) bulletin (OMB, 1987), the Department of the Navy developed a productivity plan (Assistant Secretary of the Navy, 1987). The Department of Defense (DOD) had already issued a guide for developing gain sharing programs (Deputy Assistant Secretary of Defense, 1985), in part, because of the many successful gain sharing plans already tested in the Navy (Doehnert, 1989). In fact, the guide listed 22 individual or group incentive or gain sharing plans implemented in DOD organizations, 13 of which were at Navy sites. The U.S. Navy endorsed (through the Office of the Assistant Secretary, Specification Control Advocate General) productivity gain sharing (PGS) as a means to achieve productivity improvements and set a goal of implementing PGS in ten organizations by the end of 1988.

Purpose

This report will describe the Navy's approach to establishing PGS plans in several Navy organizations and evaluate the results of PGS in some of these organizations.¹

Background

The Gain Sharing Concept

Incentives for motivational purposes were an integral part of scientific management and have been in use since the late 1800's. Scientific management approaches resulted in the development of individual piece-rate systems in the 1920's, followed by group-based systems in the 1930's. According to Naff and Pomerleau (1988), discussion of gain sharing as an incentive system originally appeared in a trade journal in 1889. An entrepreneur named Towner proposed to return to each work unit the "gains" earned by comparing the unit's costs and productivity (Towner, 1889, cited in Naff and Pomerleau, 1988).

¹The authors wish to express their appreciation to several researchers who contributed to the design and evaluation of these PGS plans: Barrie Cooper, David Dickason, Sam Landau, Michael White, Amy Culbertson, Arthur Farkas, Delbert Nebeker, James Riedel, Paul De Young, Robert Plummer, and Janice Kasumovic.

According to Lawler (1990) there are at least 1,000 gain sharing plans in the United States and Europe today. Gain sharing initially was used primarily in small, manufacturing organizations. However, during the 1970's large companies such as General Electric, Motorola, TRW, Dana, 3M, and Firestone installed gain sharing in some of their manufacturing plants. This trend of using gain sharing in specific units of large corporations is continuing with the result that many more gain sharing plans have been adopted in recent years. Dana has most of its employees covered by a gain sharing plan; Rockwell, Amoco, and Mead have recently installed gain sharing systems.

Another interesting trend is the development of gain sharing systems in service and high-technology organizations. Because of the relative ease of measuring output, manufacturing locations had been the sites of choice up until the 1980's. Recently, however, service organizations have installed gain sharing plans. Holiday Inn base their system on revenue and quality of service, for example, and similar approaches have been tried by Taco Bell and other restaurant chains. Xerox has used gain sharing in its service units and Lincoln National Life includes its claims processors in its gain sharing system. Gain sharing in high technology organizations also has been tried. Honeywell and TRW have plans covering part of their defense contracting businesses. Thus, gain sharing has expanded from application in small manufacturing organizations to a wide variety of companies (Lawler, 1990).

Probably the best known version of gain sharing is the *Scanlon Plan*, first developed in the 1930's (see White [1979] for a history of this plan). Since that time, gain sharing has existed in organizations in various forms and with different titles, among them: the Lincoln Electric Plan, Rucker Plan, and Improshare. The philosophies of these plans vary as well, from the importance of full employee involvement in improving organizational practices and performance (e.g., Scanlon Plans) to more traditional incentive plans (e.g., early Improshare Plans), which focus on the tie between economic rewards and performance, without any focus on employee involvement (see Miller & Schuster [1987] for a discussion of philosophical differences among gain sharing plans).

Defining Gain Sharing

The United States General Accounting Office (GAO) has defined gain sharing as:

“incentive systems that measure gains in employee productivity and share the savings generated between employees and the organization. The primary objective of gain sharing programs is to create conditions under which workers and management benefit by moving on parallel paths towards the common goal of improved productivity. Gain sharing programs can be based solely on financial incentives, or they can combine financial bonus systems with employee participation systems that elicit and act upon suggestions from employees on how to do the work more efficiently and effectively.” (U.S. GAO, p. C-103)

Notwithstanding the GAO definition, most writers agree that employee involvement is a critical component of a successful gain sharing system (Bullock & Bullock, 1982; Doyle, 1983; Bullock & Lawler, 1984; Lawler, 1986). Gain sharing, according to Bullock and Lawler, is “an organizational system of employee involvement with a financial formula for distributing organization-wide gains” (1984, p. 23). Doyle (1983) identifies three principal elements of gain sharing: management practices, employee participation, and shared rewards.

Management practices include providing direction through setting strategic objectives and providing information so that everyone can contribute in a meaningful way to achievement of the organization's objectives. Employee participation can take several forms, from a committee structure (as in Scanlon Plans), to quality circles, and to formal suggestion systems. Doyle (1983) provides an analogy comparing management practices to the head of the gain sharing system, employee participation processes to the body, and shared rewards to the food to keep the system going.

Conditions Affecting the Success of Gain Sharing

White (1979) reviewed the Scanlon Plan literature to identify the factors related to that gain sharing plan's success. Three groups of variables were identified:

1. Situational factors, such as size, extent of technology, and organizational climate.
2. Personnel characteristics (which include the attitude of the chief executive officer, management, and other supervisory personnel toward participation), background characteristics of the workforce (e.g., experience, skill, tenure, gender), and expectations of success or failure before the plan is begun.
3. Process variables such as how long the company has had the plan, the amount and usefulness of feedback given to employees, and the extent to which too much emphasis is placed on the bonus compared to the nonfinancial aspects of the plan.

In a multifirm study, White (1979) examined size, number of years under the plan, employees' perceived participation level, expected level of plan success, managerial attitudes toward participation and the plan itself, and whether managers were rewarded for using participative practices. He concluded that plan success is positively related to employees' perceived participation, attitudes of supervisory and managerial personnel, and how long a firm has had the plan.

In a longitudinal analysis of a single manufacturing firm's Scanlon Plan, Schuster (1984) found improvements in output per hour, level of employment, and voluntary turnover measures. He noted that management was very supportive of the plan and implemented over 70% of the employee suggestions made under the plan.

Bullock (1987) examined the effects of gain sharing on teamwork and cost savings in a manufacturing facility. His results supported the study's hypotheses that several aspects of teamwork would improve following gain sharing implementation. In addition, although employees perceived they had to work less hard under gain sharing than before the plan was implemented, the firm showed significant productivity improvement as well as a cost savings of \$500,000 during the first year (bonuses to employees averaged \$1,500 for that year).

The GAO (1986) reported that cost savings and reductions in sick leave usage, work backlogs, and overtime appear to result from gain sharing efforts. That report also identified several factors which are conducive to gain sharing success. These included continuous top management support for the plan, involvement systems, definable and accurate performance measures, adequate workload to absorb productivity increases, union participation, and good feedback to employees throughout the plan's operation.

Much of the literature points to the importance of top management support for the gain sharing system, including the employee involvement structure. Yasai-Ardekani (1989) found that management's willingness to utilize more participative systems depends on their environmental conditions. If the environment presents constraints (e.g., financial or competitive), management tends to close ranks and rely on formalized, top-down systems of communication. Thus, it might be that such environments are not conducive to gain sharing with its emphasis on high levels of employee involvement.

Bullock and Lawler (1984) developed a heuristic model of gain sharing for use in their review of 33 gain sharing case studies. The model analyzed the case studies in terms of structural factors (the characteristics of the gain sharing plans themselves such as involvement structure, bonus formula, etc.), implementation factors (e.g., how the plans were designed and implemented, by whom, how long it took, whether voted on or unilaterally implemented), and situational factors (e.g., characteristics of the organizations and their environments, size, technology, market conditions, management style). They found that most gain sharing plans reviewed had formal involvement systems and were based on labor productivity formulas, with the employees' share of the gains paid in a monthly payout. The plans were installed for several reasons, including improvement of labor-management cooperation, organizational effectiveness, and pay. In most cases, employees had favorable attitudes toward gain sharing, and outside consultants were used to help design the plans.

In describing the situational factors, the authors (Bullock & Lawler, 1984) noted that plans had been installed in both union and nonunion organizations of all sizes and management styles. Most plans were in manufacturing plants and most cases reported that the environment was favorable to gain sharing. In terms of outcomes, two thirds of the plans were successful. Improvements in such areas as productivity and cost savings, individual attitudes and quality of worklife, ideas and suggestions, labor-management cooperation, and pay and bonuses were documented in the majority of cases. Although not every case reported improvements in every area, most cases reported improvements in many areas and considered the plan a success.

Table 1 gives the factors that are conducive to gain sharing success, according to Lawler (1986, 1992). Table 2 lists potential outcomes of a successful PGS system. As seen in Table 1, the research suggests the optimal site for PGS implementation already has an employee involvement system (participative management), a high level of trust between management and employees, an open communication, and a clear, traceable performance measures.

Table 2 illustrates the diversity of potential outcomes of PGS. Some outcomes immediately affect the bottom line (decreased costs, increased productivity) while others have less quantifiable and perhaps longer-term effects (e.g., increased teamwork, better understanding of work processes).

Lawler (1986) points out that the most frequent reasons gain sharing plans fail include:

1. *Communication*—if employees are to understand the plan and trust that they will receive gains if their performance improves, open communication must exist.
2. *Management attitudes*—if unfavorable toward participative approaches, plan's philosophy will result in poor fit and plan will fail.
3. *Union cooperation*—full cooperation is needed.

Table 1

Conditions That Affect Gain Sharing Success^a

Organizational Characteristic	Favorable Condition
Size	Less than 1,000 employees
Performance Measures	Definable, practical and with a good history, stable technology and market conditions
Market for output (or workload)	Can absorb productivity/service improvements
Product costs	Controllable by employees
Organizational climate	Open—high level of trust
Management attitudes	Supportive of a participative style of management
Union status	No union, or one favoring cooperation
Overtime history	Little use of overtime
Capital investment plans	Little investment planned
Comptroller	Trusted—able to explain financial measures
Communication policy	Open—willing to share performance and financial results, willing to educate employees on the understanding of the PGS plan
Management	Technically competent, good communications skills, able to deal with suggestions and new ideas
Corporate (headquarters) position	Favorable to plan
Work forces	Technically knowledgeable, interested in participation and higher pay, knowledgeable about finances
Plant support services	Availability of parts and materials to accomplish the work; supportive maintenance and engineering functions
Supervisory skills	Competent in problem-solving and team-building skills, willing to change

^aBased on Lawler (1981).

Table 2

Potential Outcomes of Successful Gain Sharing Systems

Acceptance of change (e.g., technology) increases, because better efficiency leads to gains to share
Better understanding of work processes and cost factors
Current union may be strengthened because of plan's success
Decreased costs
Decreased usage of sick leave
Decreased use of overtime
Decreased work backlogs
Employees expect more efficient management and better planning
Employees try to work smarter, not just harder/faster (employees produce ideas)
Improved productivity
Increased levels of employment (as well as effort)
Increased teamwork and coordination
More flexible administration of union-management relations
Nonunionized locations tend to remain so

4. *Formula construction*—rigid bonus formulas that do not reflect employee behavior or cannot adapt to changing conditions will lead to failure.

5. *Payout level*—lack of payouts, because performance levels to be reached before bonuses will be paid are set too high.

6. *Plan focus*—plans need to include all costs that are in control of the employees, not just labor costs (i.e., if only labor costs are included, other costs may “be allowed” to go up so labor costs are included, other costs may “be allowed” to go up so labor costs can be decreased).

Navy Productivity Gain Sharing Plans

As noted earlier, the Navy set a goal of implementing PGS in ten organizations by the end of 1988. To assist in achieving this ambitious goal, the Navy Personnel Research and Development Center (NPRDC) was asked to perform a PGS readiness assessment of 21 “pilot” activities, as well as to provide direct technical assistance to several selected organizations in developing a PGS system. Additionally, NPRDC was asked to provide an overall evaluation of all implemented PGS systems in the Navy.

By mid-FY88 the readiness assessment was completed and several sites had been identified as having the potential to develop a successful PGS plan by the end of FY88 (NPRDC, 1988). By the end of FY89, the following Navy organizations had implemented organization-wide incentive systems:

1. Naval Aviation Depot—Cherry Point
2. Naval Aviation Depot—Jacksonville
3. Naval Aviation Depot—North Island
4. Naval Supply Center—Oakland
5. Naval Supply Center—Pensacola
6. Navy Regional Data Automation Center—Norfolk
7. Charleston Naval Shipyard
8. Portsmouth Naval Shipyard

Following the emphases of some of the writers noted above and both of the Executive Orders, gain sharing in the Navy was based on three principles: (1) that PGS has an organization-wide focus (which may require a shift in managerial philosophy toward a supportive culture, including integration with the organization’s strategic plan); (2) that PGS has at its root a well-developed employee involvement system that can identify and correct problems in the way work is acquired, processed, and distributed to customers; and (3) that gains in productivity will be shared among employees and the organization, and eventually with customers through lower prices.

The development of a Navy PGS system has several phases. These include assessment, design, implementation, and monitoring/evaluation. Each phase requires the careful identification, analysis, and resolution of several issues. The entire process from assessment to implementation is likely to take up to a year, involving several organizational members’ inputs.

Given the diversity of the Navy PGS organizations (type of work done, technologies used, productivity measurement systems, current organizational practices), the PGS plans differed across these organizations in several ways. The aviation depots intended their PGS plans to be integrated

with their Total Quality Management initiatives, which followed the Deming approach (Deming, 1986). The supply center at Oakland integrated its PGS plan with its Crosby-based quality improvement process (Crosby, 1979) and entitled the integrated plan *Productivity through Quality*. In addition, Oakland's gain sharing system initially was designed as six subplans, corresponding to relatively independent work processes at the supply center, rather than one organization-wide gain sharing system. Later, the supply center changed to a single plan. The plans at the two shipyards are more consistent with profit sharing systems than with gain sharing systems, since they pay out gains after 1- or 2-year periods, based on the total cost savings on competitively-bid overhaul projects. Finally, the plans were implemented at different times, so that by the end of FY89 some were 2 years old (e.g., Cherry Point) and some had just begun (e.g., Jacksonville).

Navy Productivity Gain Sharing Evaluation Process

NPRDC researchers have developed a longitudinal approach to evaluating PGS (see Farkas & Culbertson [1988] for a full description of the evaluation model and hypotheses). The approach includes assessment of situational, structural, and implementation factors, as well as potential outcomes of a successful gain sharing system.

The data collected for this report entail the first stage of the evaluation process and only reflect Time 1 data (i.e., the first data collection point) for six of the eight organizations (the two shipyards were not included in the evaluation process since they were profit sharing plans without involvement systems, and in one case, covered only a small segment of the workload and workforce, which does not fit the Navy's description of PGS). As indicated above, the plans were quite new in five out of six of the organizations (at the time of data collection, only one site had a plan in effect for more than 9 months). As noted in the published research, the positive effects of gain sharing should not be expected to accrue in such a short time span (White, 1979; Bullock and Lawler, 1984; Lawler, 1990). Nevertheless, the data provide descriptions of some of the structural, situational, and implementation factors inherent in the Navy PGS systems and several outcome variables as well.

Method

Research Plan

As indicated above, a longitudinal research design was planned for the on-going PGS evaluation. The method described in this report refers to Time 1 data collection only.

Sample

Data were collected at six sites at which the PGS plan had been implemented by the end of FY89. The set of organizations included three air depots, one data automation center, and two supply centers.

A survey was administered to each site. For these self-report measures, four hierarchical levels were randomly sampled at each site: (1) top management, defined as department heads and above; (2) mid-level management; (3) first-level supervisors; and (4) nonsupervisory employees. Sample sizes for the separate hierarchical levels were determined using the method described by Krejcie and Morgan (1965) for maintaining a .05 confidence level. This meant that for top management, and often for mid-management, the entire population was surveyed.

NPRDC's PGS project team contacted the PGS coordinators at each of the sites to schedule the on-site data collection, which was conducted by the NPRDC team members. For the self-report measures, respondents were randomly assigned to times during which they would receive the instructions and complete the survey. (Top management completed the surveys at their scheduling discretion and returned them to the NPRDC researchers.) Wherever possible, computerized surveys were used (otherwise, paper and pencil methods were utilized). Data for the performance outcomes were provided by the comptroller, or designee, at each site.

The selected sample was distributed across the four hierarchical levels as follows: top management ($n = 81$), mid-level management ($n = 407$), first-level supervision ($n = 560$), and nonsupervisory employees ($n = 1,713$). The total sample size for the self-report measures was 3,031 (270 respondents did not indicate their hierarchical level). The total sample was 76.7% male and mostly white (72.2%). Of those who responded, 92.5% were civilian (as opposed to military). Approximately 66% had attended college, with 29.7% completing a baccalaureate degree or more. The median education level was "some college." The median age was within the 36-40 years response category, and the median length of service in the organization was between 10-11 years. Demographic data for the four hierarchical levels is detailed in Figure 1.

Instruments and Measures

Appendices A to C² contain the instruments used for data collection. Appendix A assessed structural, implementation, and situational factors (Bullock & Lawler, 1984), as well as PGS performance outcomes, and was completed by the comptroller or designee. Structural factors that were assessed included the sharing rate, length of baseline period and performance periods, number of PGS performance periods, and the proportion of employees covered by the plan. The make-up and representativeness of the PGS design team, the time taken to develop the PGS system, and the costs of development were the implementation factors assessed. Situational factors included organization size (number of employees) and number of overtime hours.

Even though the gain sharing systems were quite new in most of the organizations included in Time 1 data collection, several potential performance outcomes were assessed. The total gains, the number of PGS payouts, and the average dollar amount of PGS payouts per employee were collected from all six sites (see Appendix A).

All respondents in five of the six sites completed the Organizational Assessment Survey (Appendix B) (data from the Oakland Supply Center were not available for analysis because they were given a different version of the survey). This instrument was designed to assess four general areas: (1) organizational climate, (2) understanding of the PGS system, (3) attitudes toward the PGS system, and (4) demographic information. The organizational climate scales were adapted from Gordon and Cummins (1979), these included:

1. Organizational clarity—8 items
2. Decision making structure—7 items
3. Organizational integration—5 items
4. Management style—6 items
5. Performance orientation—3 items

²Each appendix contains items designed for other purposes or for use later in the on-going evaluation and are not described here.

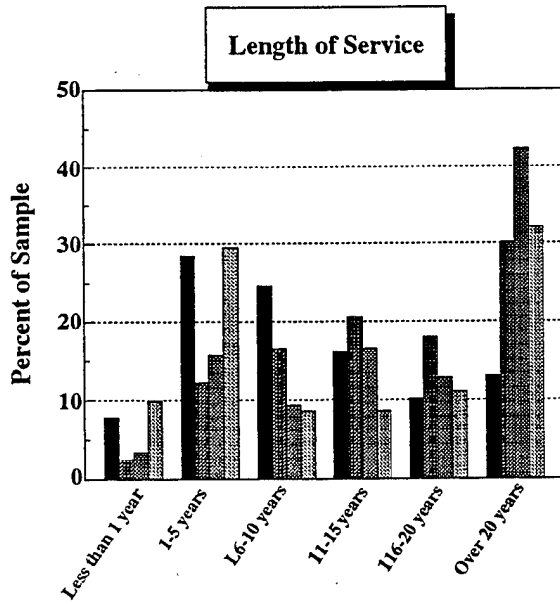
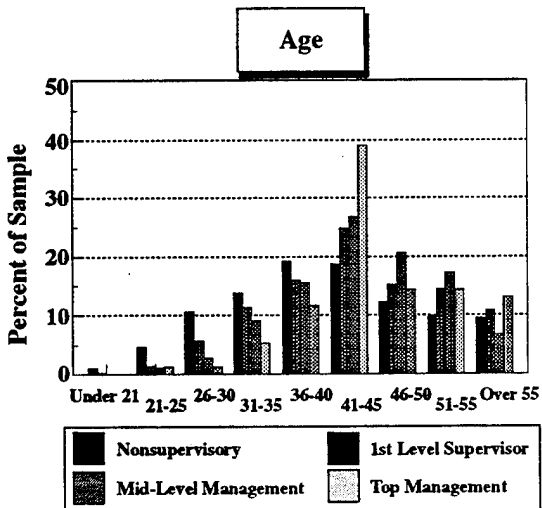
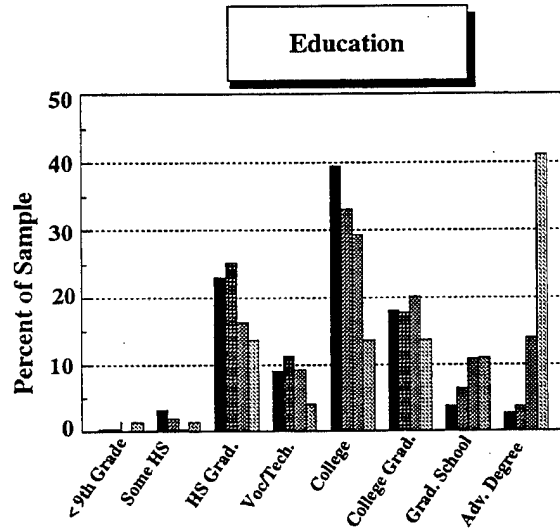
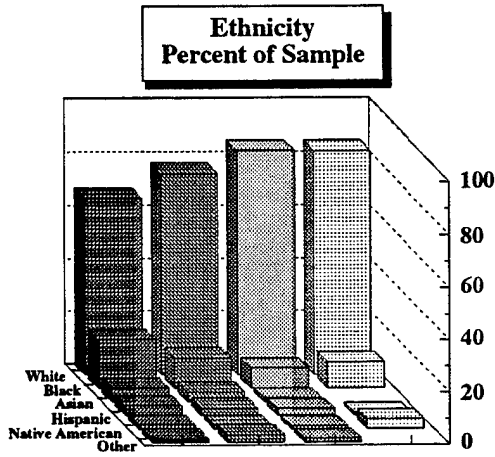
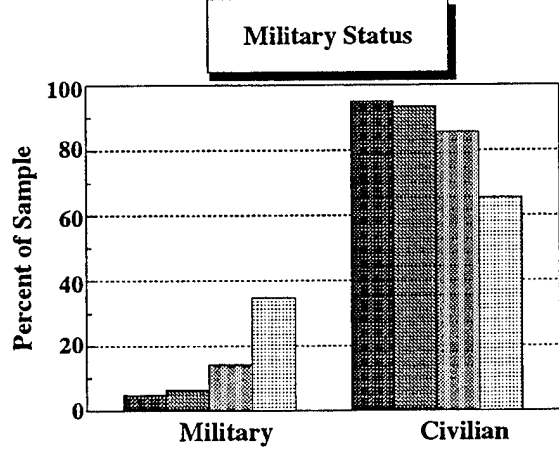
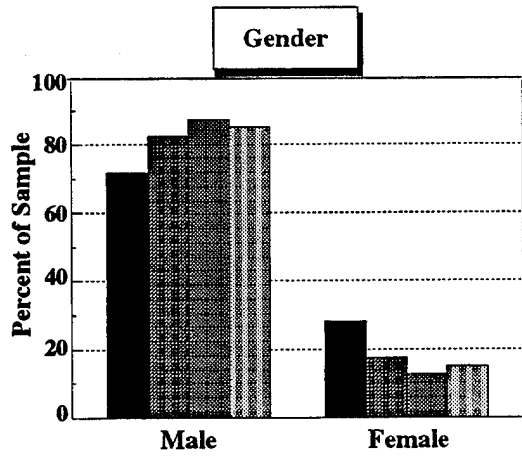


Figure 1. Demographic data by organizational level of employee.

6. Organizational vitality—5 items
7. Compensation—4 items
8. human resources development—6 items

Job satisfaction was measured using a 10-item scale designed by Taylor and Bower (1972). The PGS-related items were designed by the NPRDC researchers to (1) assess participants' approval of the PGS plan—11 items, (2) understanding of the plan—4 items, (3) perceived outcome of PGS goals—10 items, (4) ability to improve the system—9 items, and (5) management support for PGS and employee involvement—6 items each.

Top management completed an additional survey (see Appendix C) which assessed its perceptions of some additional situational variables. Scales to measure external environmental constraints (financial and regulatory—15 items each) and the extent of external competition for workload (3 items) were adapted from Yasai-Ardekani (1989). Scales to measure perceived environmental uncertainty (9 items) were based on Duncan (1972). Scales assessing the feasibility of the performance measurement system (3 items) and the nature of the technology (routine or nonroutine—2 items) were designed for the study by NPRDC researchers. A summary of the measures utilized for Time 1 PGS evaluation is given in Table 3.

Table 3

Summary of Evaluation Measures

Situational Factors	Productivity Gain Sharing (PGS) Outcome Measures
<ol style="list-style-type: none"> 1. Size (number of employees) 2. External constraints—financial 3. External constraints—regulatory 4. Extent of competition 5. Perceived environmental uncertainty 6. Technology (routine or nonroutine) 7. Feasibility of measurement system 8. Management support for PGS 9. Management support for employee involvement 10. Overtime hours 	<ol style="list-style-type: none"> 1. From organizational databases <ol style="list-style-type: none"> a. Amount of gains b. Number of PGS payouts c. Average amount of payout/employee 2. Organization Climate Measures <ol style="list-style-type: none"> a. Organizational clarity b. Decision making structure c. Organizational integration d. Management style e. Performance orientation f. Organizational vitality g. Compensation h. Human resources development i. General satisfaction 3. PGS Attitude Measures <ol style="list-style-type: none"> a. Fairness of PGS plan b. Understanding of PGS plan c. Support for PGS goals d. Individual ability to affect gains
<p>Structural Factors</p> <ol style="list-style-type: none"> 1. Employee-organizational sharing rate 2. Length of baseline period 3. Length of performance periods 4. Number of PGS performance periods 5. Average percentage of employees covered by plan 	
<p>Implementation Factors</p> <ol style="list-style-type: none"> 1. Time taken to develop PGS system 2. Costs of PGS design 3. Make-up of PGS design team 	

It should be emphasized that in five of the six PGS sites, the plan had been in effect for only 1-3 quarters of FY89. As noted above, expectations of gain sharing success in such a short time span would be naive. However, the data were collected as part of the longitudinal research design; these FY89 data will be useful for the on-going evaluation process to determine trends in outcome measures results.

Results

The results are presented in accordance with Table 3 categories.³ The various situational, structural, and implementation factors are described, as well as some of the outcome measures. Since many of these factors are included in Table 1 as conducive to gain sharing success, the results will be discussed in terms of whether the factor may help ensure PGS success.

Situational Factors

Size—The size of the six gain sharing sites ranges from 405 to 4,705 employees (the average size was 2,386 and the median size was 2,585 employees). Over 92% were civilian, rather than military employees. Although gain sharing has been implemented in organizations of varying sizes, smaller organizations (1,000 employees or fewer) are thought to have an advantage in successful implementation of gain sharing, probably due to the relative ease of communication within small firms compared to larger ones. Four of the six Navy PGS organizations are over 1,000 employees. This could be a factor which might mitigate the gain sharing results at the larger sites.

Use of overtime—Extensive reliance on overtime is not conducive to gain sharing success. For Navy organizations, like many others, meeting schedules is crucial and overtime is used to meet schedules. Improved productivity may mean reducing the need for overtime; reducing overtime will add to the gain sharing pool. However, the gain sharing payout may not be as high as overtime pay. Thus, reliance on overtime (by the organization to meet its schedules, and by the employees to meet their financial needs) reduces the chances of gain sharing success.

For the year before PGS implementation, the six PGS sites used an average 42,673.28 hours of overtime per quarter. The median usage per quarter was 30,900 hours. On a per employee basis, this means that each employee was receiving an average of 24.20 hours of overtime pay per quarter (due to the unavailability of the number of employees, one organization was not used to calculate the average overtime per employee). Thus, the PGS sites relied on overtime, some to a much greater extent than others (the range was 1,019 - 124,157.25 hours per quarter). This situational factor could diminish PGS's chances of success, if the overtime pay cannot be made up by gains.

Environmental constraints—Table 4 presents the internal consistency (Cronbach's alpha) of each scale and the correlations between the environmental constraint scales. These statistics were generated from the questionnaire administered to top management, assessing their perceptions of the extent of financial constraints, regulatory constraints, competition for workload, and the frequency and unpredictability of environmental change (environmental uncertainty). Ideally, we want high internal consistency because this shows that the items making up a scale do a good job of reflecting the characteristic. We also want low intercorrelations between scales because this reflects the fact that these are distinctly different characteristics. All measures of internal

³Note that for some results, items with different scales may be combined. In these instances (e.g., Figures 3 and 4) the items are converted to common scale units.

Table 4

**Scale Internal Consistencies and Correlation Between
Environmental Constraints**

Scales	Internal Consistency (Cronbach's Alpha)	Scale Intercorrelations			
		1	2	3	4
1. Financial Constraint	0.70		.78	-.06	.16
2. Regulatory Constraint	0.80			-.03	.14
3. Competition for Workload	0.91				.24
4. Environmental Uncertainty	0.90				

consistency were within acceptable ranges. Similarly, with one exception, the correlations between the different scales were acceptably low. The exception was the high correlation (.78) between the financial and regulatory constraint scales, suggesting these scales might be measuring just one characteristic of environmental constraints.

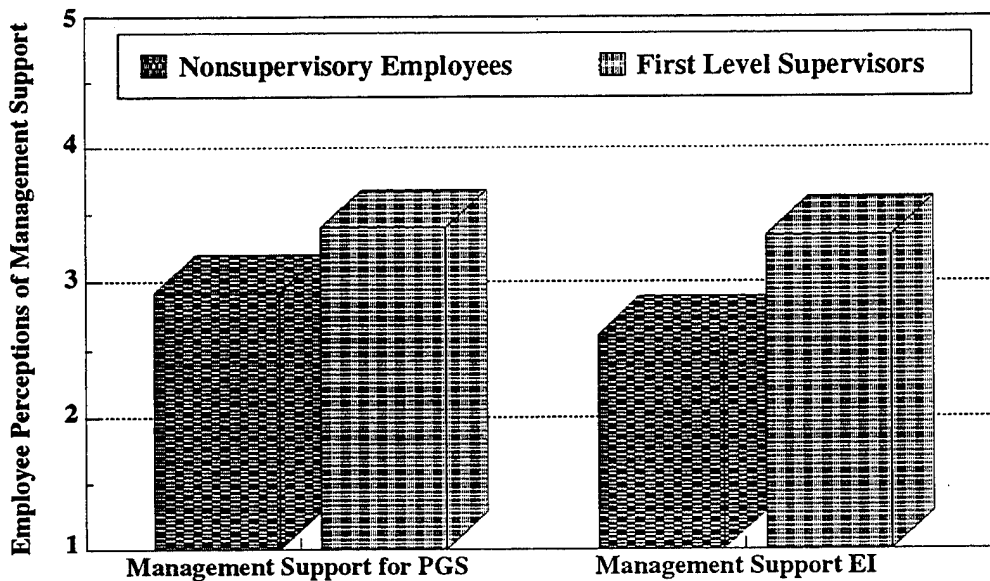
Using a scale of 1 = very small extent and 7 = very large extent, the mean level for perceived environmental uncertainty was 3.35. The mean levels for the other scales were: financial constraints (3.35), regulatory constraints (3.49), and competition for workload (3.98). All of these constraints are within the moderate range. Given the wording of the scale items, the perceptions of financial and competitive constraints suggest some limits on availability of workload to support PGS. This could be a serious constraint.

Type of technology—Top managers responded to two 7-point items concerning the extent to which the technology was routine. The mean response was equal to 4.16, indicating a relatively routine technology.

Measurement System—Three items comprised a scale to measure the adequacy of the current measurement system. Cronbach's alpha for this scale was .83 and the mean score was 4.91 on the same 1- to 7-point scale described above. Top management viewed the current measurement system as adequately tracking quantity and quality of output. A good measurement system will help ensure the success of PGS.

Top Management Support—Scales were developed to assess employees' perceptions of top management support for PGS and for employee involvement. Cronbach's alpha was .88 for perceived support of PGS and .90 for perceived top management support of employee involvement, the two scales were relatively highly intercorrelated ($r = .76$). All participants responded to these 6-item, 5-point scales with 1 = to a very small extent and 5 = to a very large extent.

Figure 2 shows the mean responses for perceived top management support of PGS (3.02) and perceived top management support for employee involvement (2.90). As can be seen in Figure 2 employees (which includes nonsupervisors and first level supervisors only) perceive only a moderate amount of top management support (which includes headquarters management, not just the organization's management). These figures suggest a problem area, since a majority of respondents did not indicate a high level of perceived top management support. The literature continually stresses top management support and a strong employee involvement system as critical for gain sharing success.



Note. PGS = productivity gain sharing, EI = employee involvement.

Figure 2. Employee perceptions of management support for PGS and employee involvement.

Structural Factors

Information concerning several components of the PGS plans themselves was gathered from the six gain sharing sites.

Sharing rate—All Navy gain sharing sites utilize a 50% sharing rate between the organization and employees. In other words, the Employees Kept 50% of the gains and the organization kept the remaining 50%.

Baseline period—The baseline periods ranged in length from 12 to 36 months (the average baseline was 18 months).

Performance period—All six sites use the fiscal year quarter as the performance period.

Number of performance periods—As indicated above, the length of PGS implementation at the time the data were collected ranged from just under 1 to 8 quarters.

Plan coverage—The “rules” for which employees are eligible for payouts varies from site to site, depending on the nature of work, the way workers are assigned to work, and different philosophies about whether to include in a payout someone who has retired from the organization. Given these differences, the percentage of civilian employees covered by the plan ranged from 87.5% to 100%. The average percentage across the six sites was 94.43%. (Under current law, military employees are not eligible for monetary gain sharing payouts, they comprise slightly more than 7% of these organization’s employees.)

Implementation Factors

Time to develop PGS—The time spent to develop the PGS system ranged from 3 to 11 months, with an average of 5.83 months (median = 5 months).

Costs of PGS design and implementation—The costs of PGS design and implementation ranged from \$9,500 to \$122,445 (the mean cost was \$53,586 and the median was \$34,655). The majority of these costs were labor costs associated with the time team members spent on the design and implementation. Of the total cost of design and implementation for the six sites (\$321,056), 11.6% were materials costs.

PGS team make-up—The size of the PGS design teams ranged from 5 to 35 members. The average size was 15. Across the six sites, 82% of the organization's departments were represented on the team; at each site, at least half of the organization's departments were represented on the teams. Only one organization did not have union representation on its design team (all had one or more unions representing workers).

Outcome Measures

Number of payouts—As stated above, the number of performance periods ranged from one to eight. The number of payouts (based on gains being made) ranged from zero to eight, with only one organization not making payouts at the time of the data collection. The median number of payouts was two.

Amount of gains and payouts—For FY88 and FY89 the six PGS sites have documented approximately \$12.8 million in gains. Half of these gains were allocated to the organizations and half to the employees in these organizations. The average payout per employee was \$477.80. The average quarterly payouts per employee ranged from \$0 to \$492. Given the environmental constraint conditions (especially workload concerns) and the situational problem of perceptions of low management support, these results are quite remarkable.

Climate measures—Table 5 shows the internal consistency of each scale (Cronbach's alpha) and the correlations between the nine climate scales. All internal consistency measures were at acceptable levels, with the exception of the performance orientation scale (0.57). Some of the intercorrelations among the scales are relatively high (greater than .60).

Table 5

Scale Internal Consistencies and Correlations Between Climate Scales

Scale	Internal Consistency (Cronbach's Alpha)	Scale Intercorrelations								
		1	2	3	4	5	6	7	8	9
1. Organizational Clarity	.88		.68	.63	.53	.52	.63	.34	.49	.42
2. Decision Making	.90			.74	.65	.57	.78	.42	.65	.53
3. Organizational Integration	.82				.64	.52	.68	.39	.57	.48
4. Management Style	.85					.53	.63	.38	.62	.52
5. Performance Orientation	.57						.52	.33	.46	.39
6. Organizational Vitality	.83							.38	.61	.50
7. Compensation	.78								.41	.54
8. Human Resources Development	.85									.62
9. General Satisfaction	.81									

Figure 3 shows the mean responses (by level in the hierarchy) for the respondents' attitudes toward various aspects of the organizational climate. All items were on a 7-point scale with 1 = to a very small extent and 7 = to a very large extent. These figures show that the majority of the respondents are moderately dissatisfied with most aspects of the climate in their organization. Top management generally had a more favorable attitude toward the climate than the other respondents. Of all the climate aspects, compensation received the lowest rating.

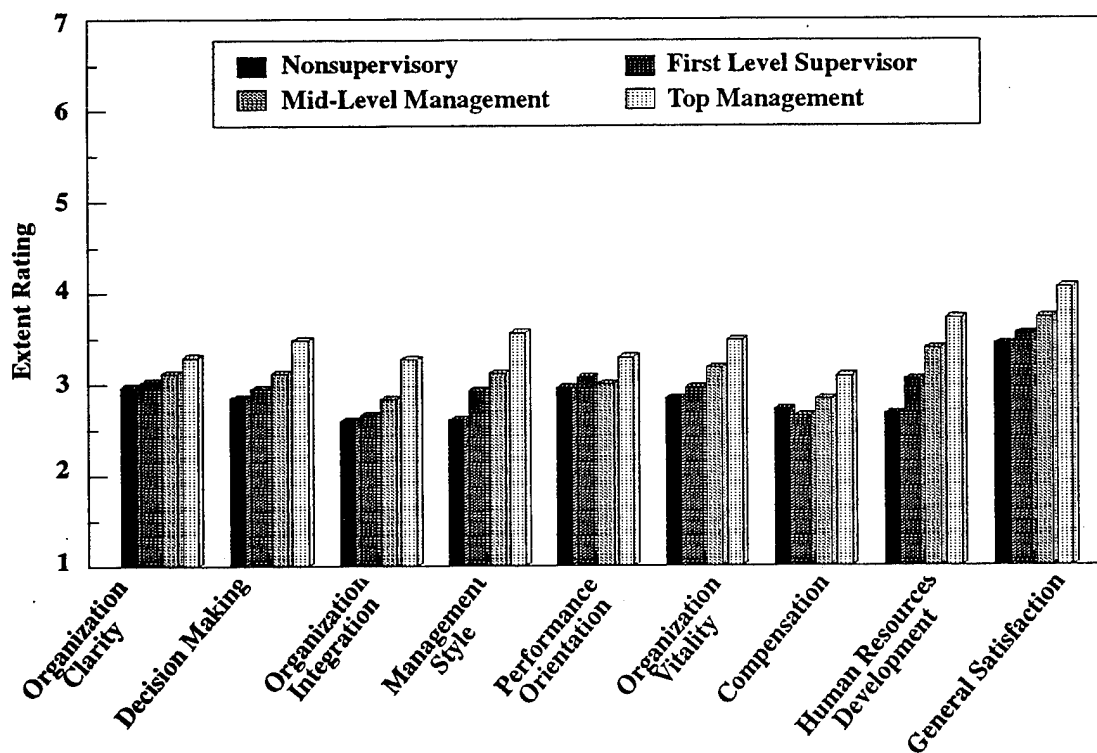


Figure 3. Attitude toward climate by organizational level of employee.

Figure 4 presents the mean responses for various aspects of the organizational climate broken down by organization. Items were again scaled on a 7-point scale with 1 = to a very small extent and 7 = to a very large extent. These data show that on an organizational level, most respondents were somewhat dissatisfied with the organizational climate. The exception was general job satisfaction. Although there appear to be differences between the organizations, it would be unwise to conclude these are meaningful differences for the climate variables. Due to inherent differences in the organizations and their environments, a longitudinal study would be needed to adequately assess these differences.

Since this is Time 1 data, the climate scale information might also be considered as a situational variable rather than an outcome variable. That is, a positive climate is viewed as conducive to PGS success. At the beginning of PGS, the climate information is not very encouraging.

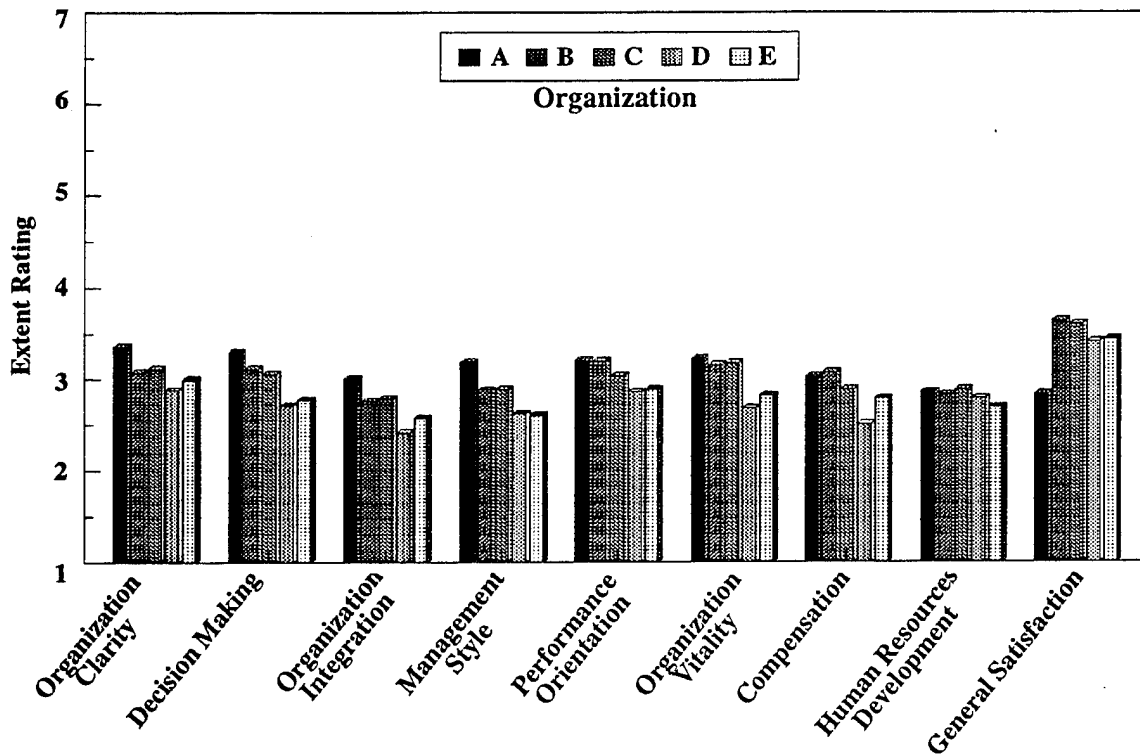


Figure 4. Attitude toward climate by organization.

PGS attitude measures—Table 6 presents the internal consistency measures and correlations between the four PGS scales. The intercorrelations are mostly within the moderate range (.5 to .7), except for the correlation between approval of the system and the perceived outcome of PGS goals (0.84). The internal consistency is high and shows that the scales are reliable. The moderately high intercorrelations show that to some extent, these scales are measuring some common attributes of PGS.

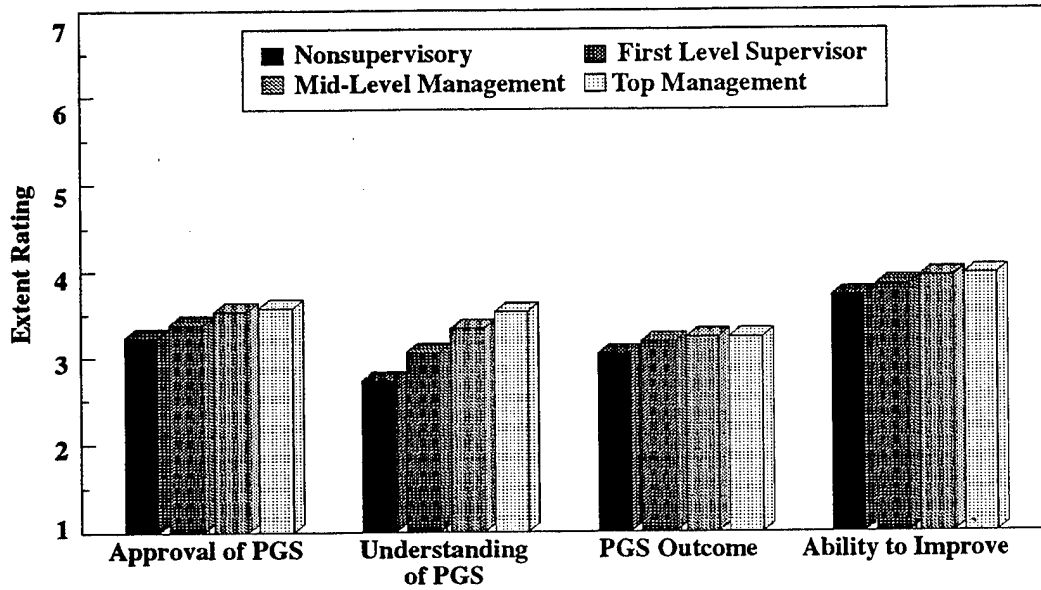
Table 6

Scale Internal Consistencies and Correlations Between PGS Scales

Scale	Internal Consistency (Cronbach's Alpha)	Scales Intercorrelations			
		1	2	3	4
1. Approval of PGS	0.89		.70	.84	.69
2. Understanding of PGS	0.81			.71	.54
3. PGS Outcome	0.93				.66
4. Ability to Improve	0.87				

Note. PGS = productivity gain sharing.

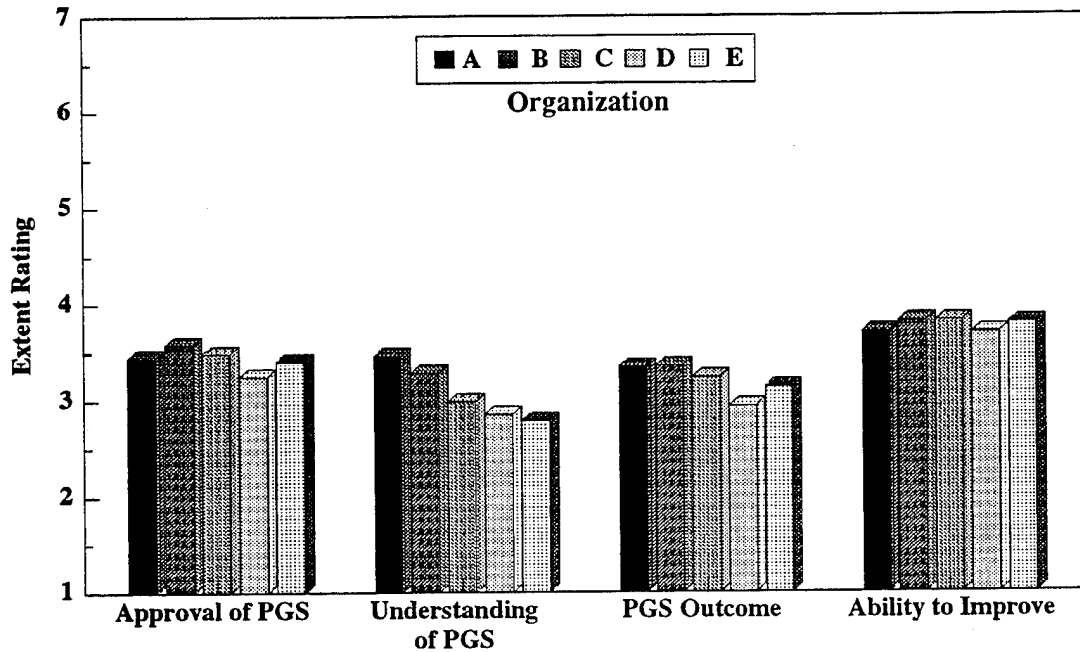
Figure 5 presents the mean responses by organizational level of employee for employee attitudes toward PGS. Items were again scaled on a 7-point scale with 1 = to a very small extent and 7 = to a very large extent. As previously shown, top management is generally more positive than other employees. Overall, all employees felt that they had the ability to improve the system and generally supported PGS. Understanding of PGS and attitudes about the outcome are quite low for all employees.



Note. PGS = productivity gain sharing.

Figure 5. Attitudes toward PGS by organizational level of employee.

Figure 6 represents the same PGS categories as Figure 5 broken down by organization. Although there appear to be differences between the organizations, it would be unwise to conclude these are meaningful differences for the PGS variables. In general, it appears that the understanding of PGS is quite low for some of these organizations.



Note. PGS = productivity gain sharing.

Figure 6. Attitudes toward PGS by organization.

Discussion

The six PGS sites in the Navy accrued over \$12 million in gains during the FY88 and FY89 periods. Of course, the organization that had the system for 2 years is the source of most of these gains, but over \$4 million was gained in the latter half of FY89 by the other organizations. These gains, when compared to the costs of developing these systems, are substantial. The fact that gain sharing has been implemented in a variety of organizations, some with nonmanufacturing (harder to measure) technologies, is a sign that gain sharing systems can be designed successfully to fit a company's operations (Ringham, 1984).

However, many factors existing in these organizations may mitigate against the long-term success of gain sharing. The competition for workload, especially now, in the face of the reductions in DOD overall, presents a major threat to PGS. The size of the organizations will make it difficult to create open communication systems so that the climate factors can be improved. The perception that top management does not support PGS or employee involvement must be changed for PGS to succeed. Several of the leading causes of gain sharing failures (Lawler, 1986) exist in these Navy organizations.

Given the existence of these mitigating factors, the success that PGS has witnessed thus far may be viewed as very promising. Employees are relatively dissatisfied with compensation levels, believe they have the ability to improve the system and contribute to the gains, and show support for PGS. Employees do not understand the plans well, however, and additional training is needed to gain this understanding.

The current status of PGS at these six sites is troubling. All gain sharing systems have been suspended by the Secretary of the Navy until 1998. It is hoped that these systems will be able to resume, and as data are collected at later points in time, clear indications of the effects of PGS in the Navy will be able to be assessed.

Recommendations

1. Efforts should continue to re-establish the sites in this report, and to establish additional PGS sites in the Navy and DOD.
2. PGS sites should be organization-wide and should include comprehensive employee involvement systems in the design.
3. The evaluation of the existing PGS sites in this report should be continued to obtain longitudinal data (Time-2, Time-3, etc.).

References

- Assistant Secretary of the Navy, Shipbuilding and Logistics. (10 February 1987). *Department of the Navy total performance/productivity independent action plan*. Washington, DC: Author.
- Bullock, R. J. (1987). *Improving teamwork through gainsharing*. Paper presented at the Annual Meeting of the Academy of Management, New Orleans.
- Bullock, R. J., & Bullock, P. F. (1982). *Gainsharing and Rubik's cube: Solving system problems*. *National Productivity Review*, 2(1), 396-407.
- Bullock, R. J., & Lawler, E. E. (1984). Gainsharing: A few questions, and fewer answers. *Human Resource Management*, 23(1), 23-40.
- Crosby, P. (1979). *Quality is free*. New York: McGraw-Hill.
- Deming, W. E. (1986). *Out of the crisis* (2nd ed.). Cambridge, MA: Massachusetts Institute of Technology.
- Deputy Assistant Secretary of Defense: Manpower, Installations and Logistics. (March 1985). *Guide for the design and implementation of productivity gainsharing programs* (DOD Directive 5010.31G). Washington, DC: Department of Defense.
- Doehnert, K. C. (April 1989). *Department of the Navy productivity gain sharing*. Washington, DC: Naval Sea Systems Command.
- Doyle, R. J. (1983). Gainsharing—a total productivity approach. *Journal of Contemporary Business*, 11(2), 57-70.
- Duncan, R. B. (1972). Characteristics of perceived environments and perceived environmental uncertainty. *Administrative Science Quarterly*, 17, 313-327.
- Executive Order 12552 of 25 February 1986. Productivity improvement program for the Federal Government. *Federal Register*, 51(40), 7041-7043.
- Executive Order 12637 of 27 April 1988. Productivity improvement program for the Federal Government. *Federal Register*, 53(83), 15349-15351.
- Farkas, A., & Culbertson, A. (September 1988). *Productivity gain sharing evaluation model*. San Diego, CA: Navy Personnel Research and Development Center.
- Gordon, G. G., & Cummins, W. (1979). *Managing management climate*. Lexington, MA: Lexington Books/Heath.
- Krejcie, R. V., & Morgan, D. W. (1965). Determining sample size for research activities. *Educational and Psychological Measurement*, 10, 607-610.
- Lawler, E. E. (1981). *Pay and organizational development*. Reading, MA: Addison-Wesley.
- Lawler, E. E. (1986). *High-involvement management*. San Francisco, CA: Jossey-Bass.
- Lawler, E. E. (1990). *Strategic pay: Aligning organizational strategies and pay systems*. San Francisco, CA: Jossey-Bass.

- Lawler, E. E. (1992). *The ultimate advantage: Creating the high-involvement organization*. San Francisco, CA: Jossey-Bass.
- Miller, C. S., & Schuster, M. H. (1987). Gainsharing plans: A comparative analysis. *Organizational Dynamics*, 16(1), 44-67.
- Naff, K. C., & Pomerleau, R. (1988). Productivity gainsharing: A federal sector case study. *Public Personnel Management*, 17, 403-419.
- Naval Aviation Depot Cherry Point. (Sep 1988). *Productivity gain sharing (PGS) plan*. Cherry Point, NC: Author.
- Naval Aviation Depot North Island. (April 1989). *Productivity gain sharing (PGS) plan*. San Diego, CA: Author.
- Naval Supply Center Oakland. (1989). *Productivity gain sharing plan*. Oakland, CA: Author.
- Naval Supply Center Pensacola. (1989). *Productivity gain sharing plan*. Pensacola, FL: Author.
- Navy Personnel Research and Development Center. (December 1988). *Productivity gain sharing readiness assessment*. San Diego, CA: Author.
- Navy Regional Data Automation Center Norfolk. (1989). *Productivity gain sharing plan*. Norfolk, VA: Author.
- Office of Management and Budget Bulletin No. 87-12. (14 May 1987). *Productivity improvement program for the federal government*. Washington, DC: Author
- Ringham, A. J. (1984). *Designing a gainsharing program to fit a company's operations*. *National Productivity Review*, 3, 131-144.
- Schuster, M. (1984). The Scanlon plan: A longitudinal analysis. *Journal of Applied Behavioral Science*, 20, 23-38.
- Taylor, J. C., & Bower, D. G. (1972). *Survey of organizations*. Ann Arbor, MI: University of Michigan.
- Towner, H. R. (1889). Gain sharing. *Transactions, A.S.M.E.*, 10.
- U.S. General Accounting Office. (September 1986). *Gainsharing: DOD efforts highlight an effective tool for enhancing federal productivity* (GAO/GGD-86-143BR). Washington, DC: U.S. Government Printing Office.
- White, J. K. (1979). The Scanlon plan: Causes and correlates of success. *Academy of Management Journal*, 22, 292-312.
- Yasai-Ardekani, M. (1989). Effects of environmental scarcity and munificence on the relationship of context to organizational. *Academy of Management Journal*, 32, 131-156.

Appendix A
Archival Data Form

Archival Data Form

The following questions request information concerning your Productivity Gain Sharing (PGS) system. If you have been involved with the system since its beginning, you probably will have the information we need. If not, please consult with those who may have the data required. If you have any questions, please call Dr. Karyll Shaw (DSN) 553-7946 or Michael White (DSN) 553-7954 at NPRDC.

For questions which are not applicable to your activity, place the abbreviation N/A in the answer blank.

Name of Activity _____

Unit Identification Code _____

Date _____

Name of PGS Point of Contact _____ Department _____

Phone: (DSN) _____ (Commercial) _____

Assessment Phase

1. When did your activity start its PGS assessment? Month _____ Year _____

2. Did you have an assessment team? Yes _____ No _____

If not, who made the decision to begin the design phase (develop the PGS plan)? Please give the person(s) position in the organization, rather than their name(s).

3. How many people were on the assessment team? _____

4. What was the grade level of the assessment team leader Grade _____

5. What were the lowest and highest grade levels on the assessment team (leader excluded)?
Lowest Grade _____
Highest Grade _____

6. How many different departments are in your activity?
(Department are defined as the first level of line supervisor below the CO level.) _____

7. Which departments were represented on the assessment team?

8. Which union(s), if any, were represented on the assessment team?

1. _____
2. _____
3. _____
4. _____
5. _____

9. How many total labor hours did the assessment team work on the PGS assessment?

10. What was the total cost in labor hours for the PGS assessment phase?

\$ _____

11. What other costs, if any, were associated with PGS assessment?

Note. Other costs might be: software development, hardware purchases, photocopying costs, travel (etc.)

1. _____ \$ _____
2. _____ \$ _____
3. _____ \$ _____
4. _____ \$ _____
5. _____ \$ _____
6. _____ \$ _____
7. _____ \$ _____

12. When was the PGS assessment phase completed?

Month _____ Year _____

Design Phase

13. When was the PGS design phase started?

Month _____ Year _____

14. How many people were on the design team?

15. What was the grade level of the design team leader?

Grade _____

16. What were the lowest and highest grade levels on the design team (leader excluded)?

Lowest Grade _____
Highest Grade _____

17. How many different departments were represented on the design team? _____

18. Which departments were represented on the design team?

19. Which union(s), if any, were represented on the design team?

1. _____
2. _____
3. _____
4. _____
5. _____

20. How many total labor hours did the design team work on the PGS Design? _____

21. What was the total cost in labor hours for the PGS design phase?

\$ _____

22. What other costs, if any, were associated with PGS design?

Note. Other costs might be: software development, hardware purchases photocopying costs, travel (etc.).

1. _____ \$ _____
2. _____ \$ _____
3. _____ \$ _____
4. _____ \$ _____
5. _____ \$ _____
6. _____ \$ _____
7. _____ \$ _____

23. When was the PGS design phase completed?

Month _____ Year _____

Implementation Phase

24. When was the PGS implementation phase started? Month _____ Year _____

25. How many people were on the implementation team? _____

26. What was the grade level of the implementation team leader? Grade _____

27. What were the lowest and highest grade level on the implementation team (leader excluded)?
Lowest Grade _____
Highest Grade _____

28. How many different departments were represented on the implementation team? _____

29. Which departments were represented on the implementation team?

30. Which union(s), if any, were, represented on the implementation team?

1. _____

2. _____

3. _____

4. _____

5. _____

31. How many total labor hours did the implementation team work on the PGS implementation? _____

32. What was the total cost in labor hours for the PGS implementation phase? \$ _____

33. What other costs, if any, were associated with PGS implementation?
Note. Other costs might be: software development, hardware purchases, photocopying costs, travel (ect.).

1. _____ \$ _____
 2. _____ \$ _____
 3. _____ \$ _____
 4. _____ \$ _____
 5. _____ \$ _____
 6. _____ \$ _____
 7. _____ \$ _____

34. When was the PGS implementation completed? Month _____ Year _____

35. If you used a productivity/quality baseline, what was its time period? From _____ To _____

36. When did the first performance period begin? Month _____ Year _____
 When did it end? Month _____ Year _____

37. What was the date of the first actual payout? Month _____ Year _____

38. What was the percentage of total civilian employees who received a payout from the first performance period? _____ %

39. How many performance periods have been completed to date? _____ Performance Periods

40. What is the average amount received per eligible employee to date on PGS payouts \$ _____
 (Total payout divided by the number of eligible employees, [FTE])

41. How much was a full share payout per eligible employee from the first performance period? \$ _____

42. For subsequent payouts, please complete the following:

Reward Period	From: Mo/Yr	To: Mo/Yr	% of Total Civilian Employees Receiving Payout
#2	_____	_____	_____
#3	_____	_____	_____
#4	_____	_____	_____
#5	_____	_____	_____
#6	_____	_____	_____
#7	_____	_____	_____
#8	_____	_____	_____
#9	_____	_____	_____

For the following items, what percentage of your activity's employees have had training in the area and what type of training was it (circle all that apply):

Training Area	% of Employees	Type of Training (circle all that apply)				
		1	2	3	4	5
How your activity's PGS system works	_____	1	2	3	4	5
How to do a PGS assessment	_____	1	2	3	4	5
How to design a PGS system	_____	1	2	3	4	5
How to implement a PGS system	_____	1	2	3	4	5
How to develop performance measures	_____	1	2	3	4	5
How to develop PGS performance measures	_____	1	2	3	4	5
Employee involvement systems	_____	1	2	3	4	5

PGS Outcome Information

Much of the remaining information may have to be obtained from the personnel director or the comptroller. Please consult with them to supply this data. If you or they have any questions please contact _____ at NPRDC, DSN 553-_____.

Please provide the following data down by quarters for your total activity:

FY87				FY88				FY89			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4

How much were:

43. Total Costs (Note. Labor, material and utility below [items 44, 45, & 46] do not have to add to total)

44. Labor Costs

45. Material Costs

46. Utility Costs

47. Value of Output (the total revenue for each quarter of each fiscal year)

48. Capital Acquisition (use depreciation of owned assets; include rental costs if available)

How many:

49. Civilian sick leave days:

50. Days lost to injury:

51. Days over/under the production schedule:

	FY87				FY88				FY89			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
52. Voluntary turnover employees	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
How many:												
53. Overtime hours	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
54. EEO complaints	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
55. Employee grievances	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
56. Employee suggestions submitted	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
57. Customer complaints	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
What level is the:												
58. Quality Index Level	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
59. Customer Satisfaction Index	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

60. As of 30 September 1989, how many of the following personnel were at your activity (expressed as full time equivalents)?

Military Personnel	Civilian Personnel
--------------------	--------------------

61. For FY88 and FY89, how many of the following *civilian* personnel were at your activity (expressed as full time equivalent)?

Total Civilian	FY88	FY89
Full Time Permanent Civilians	_____	_____
Part time Permanent Civilians	_____	_____
Full Time Temporary Civilians	_____	_____
Part Time Temporary Civilians	_____	_____
Intermittent Workers	_____	_____

62. What is your activity's actual total funding level for FY89? \$ _____

63. What was your activity's actual total funding level for FY88? \$ _____

64. What expected total funding level do you expect for FY90? \$ _____

65. What percentage of your current funding is supporting outside contracts? "outside contracts" refer to payment that is made to people outside the organization (e.g., leasing, services)? _____ %

66. How many "on site contract workers" does your activity have for the current year? _____

67. What were your activity's direct and indirect expenses for FY88? Direct \$ _____
Indirect \$ _____

68. What are your FY89 direct and indirect expenses? Direct \$ _____
Indirect \$ _____

69. How many labor hours were taken to supply the information in this survey? \$ _____

70. What was the overall cost to your activity to supply this information? \$ _____
\$ _____

Appendix B
Organizational Assessment Survey
(All Employees)

Organizational Assessment Survey

This survey is designed to obtain your thoughts about your job and organization. Your frank, candid opinions are important and sincerely welcome. Please read each question carefully before responding. Most can be answered by simply circling the number that most nearly represents your opinion. Completing the survey requires only a few minutes of your time.

You were selected to participate in this survey, and your responses will be kept completely confidential. Therefore, please do not sign your name to this survey. The information you provide will be added to that of other participants for purposes of data analysis. The survey includes several questions concerning yourself and your job. This information is being gathered to ensure that the sample of participants reflects the overall make-up of the organization. Please be assured that the information obtained in this survey will *not* be used to reveal your identity or your individual responses.

Your assistance in this effort is appreciated.

Privacy Act Statement

Public Law 93-579, the Privacy Act of 1974, requires that you be informed of the purposes and uses to be made of his survey. Authority to collect this information is granted in Title 5 of the United States Code. Providing this information is voluntary. The information will be used for statistical purposes only.

Navy Personnel Research and Development Center
San Diego, CA 92152-7250

First of all, we would like to get your opinions about some general job and organizational related issues.

To what extent...	Don't Know	Very Small Extent	2	3	Some Extent	5	6	Very Large Extent	7
1. do the people you work with cooperate to get the job done?	0	1	2	3	4	5	6	7	7
2. do your coworkers help you improve your performance?	0	1	2	3	4	5	6	7	7
3. is there good communication in your work group?	0	1	2	3	4	5	6	7	7
4. do you get information on how you are performing?	0	1	2	3	4	5	6	7	7
5. do you get information on how well your work group is performing?	0	1	2	3	4	5	6	7	7
6. do you get information on how well this organization is performing as a whole?	0	1	2	3	4	5	6	7	7
7. is your present compensation satisfactory, considering the work you do?	0	1	2	3	4	5	6	7	7
8. is your pay fair when compared to others with similar responsibilities in this organization?	0	1	2	3	4	5	6	7	7
9. is your pay fair when compared to people with similar responsibilities in other organizations?	0	1	2	3	4	5	6	7	7
10. does your performance in this organization determine your compensation level?	0	1	2	3	4	5	6	7	7
11. are employee suggestions considered for use by management?	0	1	2	3	4	5	6	7	7
12. is there resistance to improved work methods at this organization?	0	1	2	3	4	5	6	7	7
13. does your supervisor give recognition for good performance by his or her people?	0	1	2	3	4	5	6	7	7
14. do people in your work group hear about mistakes and not successes?	0	1	2	3	4	5	6	7	7
15. does your supervisor help you improve your performance?	0	1	2	3	4	5	6	7	7
16. is your supervisor willing to accept your suggestions for improving work processes?	0	1	2	3	4	5	6	7	7
17. does your supervisor emphasize high standards of efficiency?	0	1	2	3	4	5	6	7	7
18. does your supervisor encourage people to give their best effort?	0	1	2	3	4	5	6	7	7
19. do you have the materials and supplies you need to do your work?	0	1	2	3	4	5	6	7	7
20. are procedures designed so that the work flow is efficient?	0	1	2	3	4	5	6	7	7
21. is assistance readily available when a problem occurs?	0	1	2	3	4	5	6	7	7
22. is there pressure from others for you to work harder?	0	1	2	3	4	5	6	7	7
23. are the deadlines for completion of your work realistic?	0	1	2	3	4	5	6	7	7
24. is the workload here so heavy that your coworkers show signs of strain?	0	1	2	3	4	5	6	7	7

To what extent...	Don't Know	Small Extent	Some Extent	Very Large Extent				
25. is improved productivity a clear goal at this organization?	0	1	2	3	4	5	6	7
26. do people your work with complete less work than they should?	0	1	2	3	4	5	6	7
27. do people in other departments complete less work than they should?	0	1	2	3	4	5	6	7
28. do you think that, when things go wrong in your work, it is the fault of the "system" and not the people?	0	1	2	3	4	5	6	7
29. does your work have to be done right the first time?	0	1	2	3	4	5	6	7
30. does you supervisor emphasize high standards of quality?	0	1	2	3	4	5	6	7
31. does this organization have clear goals?	0	1	2	3	4	5	6	7
32. does this organization use goals as a basis for day-to-day work practices?	0	1	2	3	4	5	6	7
33. is planning for the achievement of goals in this organization complete?	0	1	2	3	4	5	6	7
34. is planning for the achievement of goals in this organization formal?	0	1	2	3	4	5	6	7
35. does this organization have clear plans to meet its goals?	0	1	2	3	4	5	6	7
36. is planning for the achievement of goals in this organization oriented toward the long term?	0	1	2	3	4	5	6	7
37. are the goals of this organization clearly communicated to the employees?	0	1	2	3	4	5	6	7
38. are lateral communications to you from others at the same organizational levels good?	0	1	2	3	4	5	6	7
39. does this organization provide managers with information needed for sound decision making?	0	1	2	3	4	5	6	7
40. do the various departments in this organization understand each others' problems and difficulties?	0	1	2	3	4	5	6	7
41. is decision making in this organization based on the short-term view?	0	1	2	3	4	5	6	7
42. do the various departments in this organization understand each others' objectives and goals?	0	1	2	3	4	5	6	7
43. do the various departments in this organization truly cooperate with one another?	0	1	2	3	4	5	6	7
44. do you understand how your job fits in with other jobs in the organization?	0	1	2	3	4	5	6	7
45. do you understand how your work contributes to the organization's mission?	0	1	2	3	4	5	6	7
46. are people in this organization free to take independent actions that are necessary to carry out their job responsibilities?	0	1	2	3	4	5	6	7

To what extent...	Don't Know	Very Small Extent	2	3	Some Extent	5	6	Very Large Extent
47. are people encouraged to take reasonable risks in their efforts to increase the effectiveness of the organization?	0	1	2	3	4	5	6	7
48. is open discussions of conflicts encouraged?	0	1	2	3	4	5	6	7
49. is constructive criticism encouraged within this organization?	0	1	2	3	4	5	6	7
50. are people encouraged to innovate in their jobs?	0	1	2	3	4	5	6	7
51. are the measures or yardsticks used to judge employee performance clear?	0	1	2	3	4	5	6	7
52. are employees clear about the end results that are expected of them in their jobs?	0	1	2	3	4	5	6	7
53. do employees in this organization receive the support they need from higher levels of management?	0	1	2	3	4	5	6	7
54. are people held personally accountable for the results they produce?	0	1	2	3	4	5	6	7
55. is this organization successful in developing people from within for bigger jobs?	0	1	2	3	4	5	6	7
56. does this organization provide opportunities for individual growth and development?	0	1	2	3	4	5	6	7
57. are the talents of employees appropriately matched to the demands of their job?	0	1	2	3	4	5	6	7
58. are the opportunities for promotions within the organization good?	0	1	2	3	4	5	6	7
59. does the organization search broadly among its members to promote into vacancies?	0	1	2	3	4	5	6	7
60. is your job a significant challenge?	0	1	2	3	4	5	6	7
61. does the current reporting structure (i.e., chain of command) help implement the organization's strategies?	0	1	2	3	4	5	6	7
62. does the current reporting structure (i.e., chain of command) help achieve the organization's goals?	0	1	2	3	4	5	6	7
63. do the systems in this organization provide a manager with the information that he/she needs for decision making?	0	1	2	3	4	5	6	7
64. are decisions in this organization based on adequate information?	0	1	2	3	4	5	6	7
65. does the current reporting structure (i.e., chain of command) help coordinate the work?	0	1	2	3	4	5	6	7
66. is decision making in this organization timely?	0	1	2	3	4	5	6	7
67. when compared with similar organizations, is this organization a pacesetter?	0	1	2	3	4	5	6	7

To what extent...	Don't Know	Very Small Extent	Some Extent	Very Large Extent				
68. is this organization responsive to changes in its business environment?	0	1	2	3	4	5	6	7
69. is decision making in this organization innovative?	0	1	2	3	4	5	6	7
70. are communications in this organization good?	0	1	2	3	4	5	6	7
71. does this organization have a rapid pace of activities and sense of urgency?	0	1	2	3	4	5	6	7
72. are decisions made at the appropriate level?	0	1	2	3	4	5	6	7
73. is the grapevine the only way you can get important information at this organization?	0	1	2	3	4	5	6	7
74. are you given timely information when changes in your work are being planned?	0	1	2	3	4	5	6	7
75. are you given the chance to influence changes in the way your work is done?	0	1	2	3	4	5	6	7
76. when changes are made at this organization, do the employees lose out in the long run?	0	1	2	3	4	5	6	7
77. does management follow through a commitment it makes?	0	1	2	3	4	5	6	7
78. is there an emphasis on satisfying this organization's customers?	0	1	2	3	4	5	6	7
79. has management clearly identified its customers to the organizational members?	0	1	2	3	4	5	6	7
80. are your customers satisfied with the products/services provided by this organization?	0	1	2	3	4	5	6	7
81. do employees trust management?	0	1	2	3	4	5	6	7
82. do you trust your supervisor?	0	1	2	3	4	5	6	7
83. does your organization respond well to peak demands and emergencies?	0	1	2	3	4	5	6	7
84. is this organization able to avoid costly mistake?	0	1	2	3	4	5	6	7
85. does this organization provide systems or support to make it easier to get the job done?	0	1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements about your job.

	Strongly Disagree	Neither Agree Nor Disagree	Strongly Agree		
1. In general, I get along well with my coworkers.	1	2	3	4	5
2. My job gives me the opportunity to develop my skills.	1	2	3	4	5
3. Considering the work that's required, the pay for this job is good.	1	2	3	4	5

	Strongly Disagree	Neither Agree Nor Disagree	Strongly Agree
4. My supervisor is competent and knows his/her job well.	1	2	5
5. My coworkers are usually cooperative on the job.	1	2	5
6. My job gives me a sense of accomplishment.	1	2	5
7. My supervisor treats me well.	1	2	5
8. I get adequate pay for my level of performance.	1	2	5
9. My job offers a good opportunity for promotion and advancement.	1	2	5
10. In general, I am satisfied with my job.	1	2	5

Total Quality Management Questions

Now, we would like to ask you some questions about your activity's Total Quality Management (TQM) effort.

- How long have you been active in TQM at the Depot?
 - Not active
 - Less than 6 months
 - 6 months to 1 year
 - 1 to 2 years
 - 2 to 3 years
 - 3 years or more
- In general, how well do you understand what TQM is all about?

	Not at all Well	Moderately Well	Extremely Well
1	1	2	5
2	1	3	5

Here is a list of TQM-related activities. Please indicate if you have participated in these activities by circling "1" for No and "2" for Yes.

- Process Action Team (PAT) member
- Quality Management Board (QMB)
- STAT Process Control (SPC)
- Executive Steering Committee (ESC)
- Sub PAT member
- Other (please specify) _____

	No	Yes
1	1	2
2	1	2
3	1	2
4	1	2
5	1	2
6	1	2

In your opinion, how adequate were each of the following training activities?

	Have not had Training	Not at all	Somewhat Adequate	Extremely Adequate
9. Problem-solving techniques	0	1	3	5
10. SPC tools	0	1	3	5
11. Training in purpose of TQM	0	1	3	5

	Have not had Training	Not at all	Somewhat Adequate	Extremely Adequate
0	1	2	3	4
1	1	2	3	4
2	1	2	3	4
3	1	2	3	4
4	1	2	3	4
5	1	2	3	4

12. Training for making presentations
13. Training for tracking and determining cost savings of improvements
14. Training in Deming's 14 points
15. Deming's 4-day seminar
16. Other (please specify):
17. Which statement best describes the relationship between quality and productivity?
 - a. As quality increases, productivity increases.
 - b. As quality increases, productivity decreases.
 - c. There is no relationship between quality and productivity.
 - d. I don't know.
18. Which statement best describes the relationship between quality and cost?
 - a. As quality increases, productivity increases.
 - b. As quality increases, productivity decreases.
 - c. There is no relationship between quality and productivity.
 - d. I don't know.
19. Which definition of statistical process control is most correct?
 - a. When all process measurements are within control limits.
 - b. When all process measurements are within specification limits.
 - c. When there is little variation between the points.
 - d. I don't know.

The following is a list of reasons for starting a Quality Improvement effort. Please select the top FIVE reasons and rank them in order of importance from 1 to 5 on the line in front of the item.

20. To develop a participative managerial philosophy
21. For the development of the individual
22. To improve processes or procedures
23. To increase productivity
24. To save money
25. To comply with commanding officer's request
26. To improve quality
27. To meet schedule
28. To comply with NAVAIR's request
29. To help generate new business

30. To help compete with other activities _____
31. To keep the organization from being reduced in size _____
32. For job security _____
33. To increase involvement by the workforce _____
34. To improve communications _____
35. To improve worker satisfaction _____
36. To reduce turnover or absenteeism _____
37. Other (please specify): _____

For each of the following resources, please indicate the level of support for TQM received from your management. Please circle appropriate number.

	Don't Know	No Support	Some Support	Great Deal of Support
38. Money	0	1	2	3
39. Training	0	1	2	3
40. Facilitator	0	1	2	3
41. Members' time	0	1	2	3
42. Recognition	0	1	2	3
43. Personnel development	0	1	2	3
44. Implementing	0	1	2	3
45. Process improvement changes	0	1	2	3
46. Verbal support	0	1	2	3
47. Other (please specify): _____	0	1	2	3

In your opinion, how much do the following individuals or groups support or oppose TQM?

	Don't Know	Strongly Oppose	Neither Support nor Oppose	Strongly Support
48. The commanding officer	0	1	2	3
49. The senior civilian (i.e., Technical Director or Executive Director)	0	1	2	3
50. Military management	0	1	2	3
51. Civilian management	0	1	2	3
52. Supervisors	0	1	2	3
53. Nonsupervisory employees	0	1	2	3
54. Union officers	0	1	2	3
55. Headquarters command	0	1	2	3

Please circle the number of the statement which best describes your answer.

To what extent...	To a Very Little Extent	2	3	4	To Some Extent	To a Very Great Extent
56. has the purpose of the TQM effort been made clear?	1	2	3	4	5	6 7
57. does TQM ignore the established work routines and procedures of people at your activity?	1	2	3	4	5	6 7
58. has communication about TQM been thorough and effective?	1	2	3	4	5	6 7
59. are organizational objectives of TQM compatible with your personal goals?	1	2	3	4	5	6 7
60. is this organization ready to adopt TQM?	1	2	3	4	5	6 7
61. is productivity in your department dictated by customer request?	1	2	3	4	5	6 7
62. is your department responsive to customer input?	1	2	3	4	5	6 7
63. are employees encouraged to find methods for increasing quality?	1	2	3	4	5	6 7
64. are employees encouraged to find methods for increasing productivity?	1	2	3	4	5	6 7
65. are employees encouraged to find methods for decreasing costs?	1	2	3	4	5	6 7

66. Of the requirements listed below, please circle the one which is most important to your external customer:

- Quality
- Cost
- Productivity
- Being on schedule

Productivity Gain Sharing Questions

The questions in this section ask your judgment about Productivity Gain Sharing (PGS) in your activity. For each question, please circle the one number that most closely describes what you think.

To what extent...	Have not Received Training	A Very Small Extent	2	3	4	5	6	A Very Large Extent
1. do you understand the PGS system?	0	1	2	3	4	5	6	7
2. do you understand how productivity is being measure?	0	1	2	3	4	5	6	7
3. was the PGS training you received adequate?	0	1	2	3	4	5	6	7
4. will PGS encourage teamwork between you and others within your department?	0	1	2	3	4	5	6	7
5. will PGS encourage teamwork between you and people in other departments?	0	1	2	3	4	5	6	7
6. do you believe top management supports PGS?	0	1	2	3	4	5	6	7

In your opinion, how much do the following individuals or groups support or oppose PGS?

	Don't Know	Strongly Oppose	Neither Support nor Oppose	Strongly Support
7. The commanding officer	0	1	2	4
8. The senior civilian (i.e., Technical Director or Executive Director)	0	1	2	4
9. Military management	0	1	2	4
10. Civilian management	0	1	2	4
11. Supervisors	0	1	2	4
12. Nonsupervisory employees	0	1	2	4
13. Union officers	0	1	2	4
14. Headquarters command	0	1	2	4
In your opinion, how much do the following individuals or groups support or oppose Employee Involvement?				
15. The commanding officer	0	1	2	4
16. The senior civilian (i.e., Technical Director or Executive Director)	0	1	2	4
17. Military management	0	1	2	4
18. Civilian management	0	1	2	4
19. Supervisors	0	1	2	4
20. Nonsupervisory employees	0	1	2	4
21. Union officers	0	1	2	4
22. Headquarters command	0	1	2	4

For each of the following resources, please indicate the level of support for PGS received from your management. Please circle appropriate number.

	Don't Know	No Support	Some Support	Great Support
23. Money	0	1	2	4
24. Training	0	1	2	4
25. Subordinates' time	0	1	2	4
26. Recognition	0	1	2	4
27. Personnel development	0	1	2	4
28. Implementing suggestions	0	1	2	4
29. Verbal support	0	1	2	4
30. Other (please specify): _____	0	1	2	4

Please indicate how much you agree or disagree with each of the following statements about your activity's PGS system.

	Have not Received Training	Strongly Disagree	Neither Agree nor Disagree	Strongly Agree
31. The PGS system measures and rewards the right things.	0	1	2	3
32. I understand what level of performance must be reached to earn a bonus.	0	1	2	3
33. The performance level you have to beat to earn a bonus is too difficult.	0	1	2	3
34. The amount of money we can earn under PGS makes me want to do better.	0	1	2	3
35. A 50/50 split of the gains between the organization and the employees is fair.	0	1	2	3
36. The way the bonus is shared among the employees is fair.	0	1	2	3
37. The way civilian employees are included or excluded from participating in the PGS system is fair.	0	1	2	3
38. PGS fits in well with other organizational improvement initiatives (e.g., TQM).	0	1	2	3
39. PGS will improve the quality of our products and services to our customers.	0	1	2	3
40. PGS will improve our productivity as a whole.	0	1	2	3
41. PGS will improve our customers' satisfaction with our work.	0	1	2	3
42. PGS will reduce the cost of our products and services.	0	1	2	3
43. There is sufficient work available to support productivity improvement.	0	1	2	3
44. PGS is a better way to reward good performance than what has been done here in the past.	0	1	2	3
45. PGS is a good deal for the workers.	0	1	2	3
46. PGS has increased employee understanding of the organizations's goals and objectives.	0	1	2	3
47. PGS will reward us for making improvements in our processes and procedures.	0	1	2	3
48. I was kept informed about the progress in the design of our PGS system.	0	1	2	3
49. I am pleased with the way PGS was developed here.	0	1	2	3
50. My coworkers are willing to accept my suggestions concerning our job, work area, or department.	0	1	2	3
51. I offer suggestions about improving the operations of my job, work area, or department	0	1	2	3
52. I am willing to accept the suggestions of my coworkers concerning my job, work area, or department	0	1	2	3

	Have not Received Training		Strongly Disagree		Neither Agree nor Disagree		Strongly Agree	
	0	1	2	3	4	5	6	7
53. I am concerned about increasing the quality of products/services/support to customers.	0	1	2	3	4	5	6	7
54. I am concerned about the controlling costs.	0	1	2	3	4	5	6	7
55. I can contribute to the size of the PGS awards, if given the opportunity.	0	1	2	3	4	5	6	7
56. Group/team cooperation can contribute to the size of PGS awards.	0	1	2	3	4	5	6	7
57. Group/team performance is positively recognized in this activity.	0	1	2	3	4	5	6	7
58. I am satisfied with the present opportunity to participate in decisions concerning my job, work area, or department.	0	1	2	3	4	5	6	7
59. Productivity benefits should be shared among the organization, its employees, and customers.	0	1	2	3	4	5	6	7
60. Employees should share in decisions that affect their jobs, work areas, or departments.	0	1	2	3	4	5	6	7
61. Equal monetary PGS awards for everyone is a good idea.	0	1	2	3	4	5	6	7

62. How many different suggestions (formal or informal) did you submit in fiscal year 1989?
 _____ suggestions submitted.

53. How many different suggestions (formal or informal) did you submit in fiscal year 1988?
 _____ suggestions submitted.

64. If you have had training on how your activity's PGS system works, what type of training was it? Check all that apply.
 a. ___ OCPM PGS training
 b. ___ PGS Training from an outside consultant
 c. ___ PGS Training using an in-house trainer
 d. ___ Training from PGS written material
 e. ___ Training in PGS from a video tape
 f. ___ Other (please specify) _____

65. Which of the following general improvement tools has your activity used? Circle all that apply and answer the questions for those tools.

	To what extent does the use of this tool serve to increase the PGS bonus pool?								
	A Very Small Extent	Some Extent	A Very Large Extent						
a. Quality Improvement (TQM, Crosby)	Y/N/Not Sure	0	1	2	3	4	5	6	7
b. Quality Circle	Y/N/Not Sure	0	1	2	3	4	5	6	7
c. Socio-Technical Systems	Y/N/Not Sure	0	1	2	3	4	5	6	7
d. Strategic Planning	Y/N/Not Sure	0	1	2	3	4	5	6	7
e. Management by Objectives (MBO)	Y/N/Not Sure	0	1	2	3	4	5	6	7

To what extent does the use of this tool serve to increase the PGS bonus pool?

	Was this tool included as a part of your activity's PGS plan	A very Small Extent		Some Extent	A Very Large Extent				
		Don't Know	1		2	3	4	5	6
f. Performance Feedback and Goal Setting	Y/N/Not Sure	0	1	2	3	4	5	6	7
g. Quality of Work Life (QWL) Program	Y/N/Not Sure	0	1	2	3	4	5	6	7
h. Career Planning and Development Intervention	Y/N/Not Sure	0	1	2	3	4	5	6	7
i. Non-PGS Reward Systems	Y/N/Not Sure	0	1	2	3	4	5	6	7
j. Value Engineering	Y/N/Not Sure	0	1	2	3	4	5	6	7
k. Engineering the Work Place	Y/N/Not Sure	0	1	2	3	4	5	6	7
l. Other (please specify) _____	Y/N/Not Sure	0	1	2	3	4	5	6	7
66. Which of the following specific improvement tools has your activity used? Circle all that apply and answer the questions for those tools.									
a. Brainstorming	Y/N/Not Sure	0	1	2	3	4	5	6	7
b. Nominal Group Technique (NGT)	Y/N/Not Sure	0	1	2	3	4	5	6	7
c. Kepner Tregoe	Y/N/Not Sure	0	1	2	3	4	5	6	7
d. Pareto Charting	Y/N/Not Sure	0	1	2	3	4	5	6	7
e. Cause and Effect Diagram	Y/N/Not Sure	0	1	2	3	4	5	6	7
f. Control Charting	Y/N/Not Sure	0	1	2	3	4	5	6	7
g. Statistical Process Control (SPC)	Y/N/Not Sure	0	1	2	3	4	5	6	7
h. Flow Charting	Y/N/Not Sure	0	1	2	3	4	5	6	7
i. The Oregon Objective Matrix	Y/N/Not Sure	0	1	2	3	4	5	6	7
67. Which of the following employee involvement systems has your activity used? Circle all that apply and answer the questions for those systems.									
a. Beneficial suggestion system	Y/N/Not Sure	0	1	2	3	4	5	6	7
b. Presentations to joint management/employee review boards	Y/N/Not Sure	0	1	2	3	4	5	6	7
c. Management level quality management boards	Y/N/Not Sure	0	1	2	3	4	5	6	7
d. Presentations to management on an as-needed basis	Y/N/Not Sure	0	1	2	3	4	5	6	7
e. Autonomous work groups	Y/N/Not Sure	0	1	2	3	4	5	6	7
f. Survey feedback	Y/N/Not Sure	0	1	2	3	4	5	6	7
g. Group meeting with supervisor	Y/N/Not Sure	0	1	2	3	4	5	6	7
h. Informal employee suggestions to the supervisor	Y/N/Not Sure	0	1	2	3	4	5	6	7
i. Other (please specify) _____	Y/N/Not Sure	0	1	2	3	4	5	6	7

This final set of questions is needed to help us with the statistical analysis of the data. This information will allow for comparison with other employee groups. Please circle the number of the correct response. No attempt will be made to identify your individual responses in this or any other part of the survey.

1. What is your sex?
 - a. Male
 - b. Female
2. What is your ethnic origin?
 - a. American Indian or Alaskan Native
 - b. Asian or Pacific Islander
3. What is your highest educational level?
 - a. Less than 9th grade level
 - b. Some high school
 - c. High school diploma or GED
 - d. Vocational/technical training
 - e. Some college
 - f. Graduated from college (Bachelor's Degree)
 - g. Some graduate school
 - h. Graduate or professional degree (e.g., MBA, MA, Ph.D.)
4. What is your age?
 - a. Under 21
 - b. 21-25
 - c. 26-30
 - d. 31-35
 - e. 36-40
 - f. 41-45
 - g. 46-50
 - h. 51-55
 - i. Over 55
5. Are you currently a military or civilian employee?
 - a. Military
 - b. Civilian
6. How long have you worked in this organization?
 - a. Less than 1 year
 - b. 1-5 years
 - c. 6-10
 - d. 11-15 years
 - e. 16-20 years
 - f. More than 20 years
7. What is your current level of responsibility?
 - a. Nonsupervisory
 - b. First line supervisor
 - c. Mid-level supervisor/manager
 - d. Department head or above
8. What is your current paygrade? (e.g., WG-8, GS-3, E-5)
Paygrade _____
9. What is your department?
Department Name/number _____
10. How many different technical training classes have you had? _____
11. Are you now a full journeyman in your job series?
 - a. Yes
 - b. No

Appendix C
Organizational Assessment Survey
(Management Questionnaire)

Organizational Assessment Survey Top Management Productivity Gain Sharing Questionnaire

This survey is designed to obtain your thoughts about your job and organization. Your frank, candid opinions are important and sincerely welcome. Please read each question carefully before responding. Most can be answered by simply circling the number that most nearly represents your opinion. Completing the survey requires only a few minutes of your time.

You were selected to participate in this survey because of your perspective of your activity. To keep your responses completely confidential, we ask that you do not sign your name to this survey. The information you provide will be added to that of other participants for purposes of data analysis.

Questions in this part of the survey are asked only of top management. Some of the questions may not seem to be directly relevant to your activity's Productivity Gain Sharing (PGS) efforts, but your answers will help us to identify some of the general characteristics of an organization which are related to the successful implementation of PGS.

Your assistance in this effort is appreciated.

Privacy Act Statement

Public Law 93-579, the Privacy Act of 1974, requires that you be informed of the purposes and uses to be made of his survey. Authority to collect this information is granted in Title 5 of the United States Code. Providing this information is voluntary. The information will be used for statistical purposes only.

Navy Personnel Research and Development Center
San Diego, CA 92152-7250

External constraints: Most organizations are subject to constraints imposed upon them by external sources. Your responses to this set of questions will help us determine the effects of these external constraints on your activity's implementation of PGS.

To what extent...	Don't Know	Very Small Extent	Some Extent	Very Large Extent
1. does the Office of the President of the U.S.:				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
2. does the Congress:				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
3. does the Department of Defense:				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
4. does Office of the Secretary of the Navy (SECNAV):				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
5. does your Headquarters:				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
6. does Office of the Comptroller of the Navy (NAVCOMP):				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
7. does Office of Civilian Personnel Management (OCPM):				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
8. does the Occupational Safety and Health Administration (OSHA):				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
9. does state and/or local government:				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
10. do foreign government:				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
11. do international bodies (e.g., NATO, UN, etc.):				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3

To what extent...	Don't Know	Very Small Extent	Some Extent	Very Large Extent
12. do your customers:				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
13. do your suppliers:				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
14. do labor unions:				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
15. do private citizens groups:				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
16. does (other-specify) _____:				
a. <i>financially</i> constrain your activity's work?	0	1	2	3
b. present <i>regulatory</i> constraints to your activity's work?	0	1	2	3
17. do other Navy activities <i>currently compete</i> for your activity's work?	0	1	2	3
18. will other Navy activities compete for your work in the <i>future</i> ?	0	1	2	3
19. do other governmental activities outside the Navy <i>currently compete</i> for your activity's work?	0	1	2	3
20. will other governmental activities outside the Navy compete for your activity's work in the <i>future</i> ?	0	1	2	3
21. do private sector organizations <i>currently compete</i> for your activity's work?	0	1	2	3
22. will private sector organizations compete for your activity's work in the <i>future</i> ?	0	1	2	3

Decision Making: Different decisions are often made at different levels in an organization. Please indicate the lowest level at which decisions regarding the following issues are typically made:

	Don't Know	Outside the Activity	CO or		Dept. Head	Mid-Manager	First Line Sup.	Staff
			Senior Civilian	Non-sup.				
1. The number of workers for each product line/project	0	1	2	3	4	5	6	7
2. The resolution of internal labor disputes	0	1	2	3	4	5	6	7
Please indicate the lowest level at which decisions regarding the following issues are typically made:								
3. How much overtime is to be worked at the shop level	0	1	2	3	4	5	6	7
4. Whether suggestions get implemented	0	1	2	3	4	5	6	7

	Don't Know	Outside the Activity	CO or Senior		Dept. Head	Mid-Manager	First Line Sup.	Nonsup.	Staff
			Civilian	Sup.					
5. The products or projects to be worked on	0	1	2	3	4	5	6	7	
6. The methods/procedures by which the work is done	0	1	2	3	4	5	6	7	
7. The allocation of work among available workers	0	1	2	3	4	5	6	7	
8. The long-term strategies for your activity	0	1	2	3	4	5	6	7	

Cross-Functional Decision Making: Different parts of an organization often need to cooperate on projects and products. To what extent are the following decision cooperatively among different parts of your activity?

	Don't Know	Never Functional	Decision is		Very Small Extent	Some Extent	Very Large Extent
			Cross-Functional	Very Small Extent			
1. The number of work years for each product/project	0	1	2	3	4	5	6
2. Internal labor disputes	0	1	2	3	4	5	6
3. Overtime to be worked at the shop level	0	1	2	3	4	5	6
4. Whether employee suggestions get implemented	0	1	2	3	4	5	6
5. The products or projects to be undertaken	0	1	2	3	4	5	6
6. The way in which work is done	0	1	2	3	4	5	6
7. The allocation of work among available workers	0	1	2	3	4	5	6
8. Long-term strategic decisions	0	1	2	3	4	5	6

Environmental Uncertainty: Organizations need to adjust to changes in their environment to stay competitive and to meet the requirements of outside agencies. To what extent are the following subject to frequent and/or unpredictable changes?

	Don't Know	Very Small Extent	Some Extent	Very Large Extent				
					1. are regulations imposed on this activity by agencies outside the Navy subject to: <ul style="list-style-type: none"> a. Frequent changes b. Unpredictable changes 	0	1	2
2. are regulations imposed on this activity by Navy agencies outside your activity subject to: <ul style="list-style-type: none"> a. Frequent changes b. Unpredictable changes 	0	1	2	3	4	5	6	7
3. is the type of technology your activity uses the most subject to: <ul style="list-style-type: none"> a. Frequent changes b. Unpredictable changes 	0	1	2	3	4	5	6	7

	Don't Know	Very Small Extent	Some Extent	Very Large Extent
4. are the <i>methods and procedures</i> imposed on your activity by external agencies subject to:				
a. Frequent changes	0	1	3	4
b. Unpredictable changes	0	1	3	4
5. is your activity's <i>ease in attracting qualified personnel</i> subject to				
a. Frequent changes	0	1	3	4
b. Unpredictable changes	0	1	3	4
6. is your activity's <i>ease in retaining qualified personnel</i> subject to:				
a. Frequent changes	0	1	3	4
b. Unpredictable changes	0	1	3	4
7. are the <i>needs of your customers</i> subject to:				
a. Frequent changes	0	1	3	4
b. Unpredictable changes	0	1	3	4
8. is your activity's <i>ease in obtaining funds</i> subject to:				
a. Frequent changes	0	1	3	4
b. Unpredictable changes	0	1	3	4
9. are your activity's products or services subject to:				
a. Frequent changes	0	1	3	4
b. Unpredictable changes	0	1	3	4
Measurement Issues				
To what extent...				
1. does your activity monitor the <i>quantity</i> of its overall output?	0	1	3	4
2. is it feasible to create or improve existing measurement systems to monitor the <i>quantity</i> of your activity's overall output?	0	1	3	4
3. does your activity monitor the <i>quality</i> of its overall output?	0	1	3	4
4. is it feasible to create or improve existing measurement systems to monitor the <i>quality</i> of your activity's overall output?	0	1	3	4
5. does your activity monitor the <i>quality</i> of the methods or work processes it uses?	0	1	3	4
6. is it feasible to create or improve existing measurement systems to track the <i>quality</i> of the methods or work processes used in your activity?	0	1	3	4
7. is the work at your activity repetitive?	0	1	3	4
8. is your activity's work nonroutine?	0	1	3	4

9. What is the *lowest* level at which your activity routinely tracks outputs?

- a. Entire activity
- b. By department
- c. By division
- d. By work group
- e. Other (please specify) _____
- f. By individual
- g. Don't know
- h. This activity does not track outputs

This final set of questions is needed to help us with the statistical analysis of the data. This information will allow for comparison with other employee groups. Please circle the number of the correct response. No attempt will be made to identify your individual responses in this or any other part of the survey.

1. What is your sex?

- a. Maleb. Female

2. What is your ethnic origin?

- a. American Indian or Alaskan Native
- b. Asian or Pacific Islander

3. What is your highest educational level?

- a. Less than 9th grade level
- b. Some high school
- c. High school diploma or GED
- d. Vocational/technical training
- e. Some college
- f. Graduated from college (Bachelor's Degree)
- g. Some graduate school
- h. Graduate or professional degree (e.g., MBA, MA, Ph.D.)

4. What is your age?

- a. Under 21
- b. 21-25
- c. 26-30
- d. 31-35
- e. 36-40
- f. 41-45
- g. 46-50
- h. 51-55
- i. Over 55

5. Are you currently a military or civilian employee?

- a. Military
- b. Civilian

6. How long have you worked in this organization?

- a. Less than 1 year
- b. 1-5 years
- c. 6-10
- d. 11-15 years
- e. 16-20 years
- f. More than 20 years

7. What is your current level of responsibility?

- a. Nonsupervisory
- b. First line supervisor
- c. Mid-level supervisor/manager
- d. Department head or above

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