

AD-A194 987

**JOB ORDER CONTRACTING:  
A PROCUREMENT SUCCESS STORY**

Report AR713R1

February 1988

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Prepared pursuant to Department of Defense Contract MDA903-85-C-0139.  
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## **Executive Summary**

### **JOB ORDER CONTRACTING: A PROCUREMENT SUCCESS STORY**

In the past 10 years, real property maintenance activities (RPMA) spending by Army installations has more than doubled in real terms while the staffs that support those efforts have remained relatively constant. The shortage of contract administration and engineering staffs has resulted in increases in the time required to obtain RPMA construction contracts and subsequent degradation of mission support.

Job order contracts (JOCs), an innovative means for providing RPMA support to Army installations, are being tested by the U.S. Army Corps of Engineers as a solution to the problem. JOCs are competitively bid, firm-fixed-price, indefinite-quantity contracts that list detailed tasks, unit prices, and price multipliers that can easily be used to establish the prices and terms for RPMA projects. JOCs differ from conventional firm-fixed-price contracts in that an "umbrella" contract is awarded under which individual work orders are issued, eliminating the need for separate contracts and many of the detailed specifications and formal drawings for each order. Thus, work order lead times and contracting and engineering effort are significantly reduced.

Experience at eight installations, where more than \$57 million in JOCs have been placed, confirms that a JOC takes less time and effort than a conventional contract with no sacrifice to quality and control. Administration of JOCs is no different than that of other installation contracts. JOCs also provide new opportunities for small businesses and small disadvantaged businesses to participate in DoD construction. Furthermore, JOCs do not interfere with installation commercial activities programs.

We conclude that a JOC is an effective way of improving installation mission support. However, some improvements can still be made. We recommend that JOC unit price books be expanded to include more task items, that the current execution guide include more detail, and that JOC training courses be developed. We also recommend that JOCs be made available to other Army installations that can benefit from their use.

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## CHAPTER 1

### BACKGROUND

Job order contracting is an innovative procurement technique designed to provide more responsive facility maintenance and repair and minor construction at Army installations. It is intended to reduce engineering and procurement leadtimes dramatically by awarding a competitively bid, firm-fixed-price, indefinite quantity, multi-task contract to a single contractor. That contract consists of detailed task specifications for a multitude of real property maintenance activities (RPMA) encountered at an installation.

Briefly, job order contracts (JOCs) are based on a Government-prepared Unit Price Book (UPB) that lists all tasks encompassed by a contract with a corresponding unit price. In making offers on the contract, responders propose two multipliers — one for work performed during normal working hours and one for work performed during other than normal hours. The Government's unit prices are then multiplied by the appropriate coefficient to determine the total price. (Supplemental items that are not identified in the UPB are estimated separately and added to the total cost.) After the basic contract has been awarded, the contractor and the installation representative discuss and establish the scope and quantity for each task and the installation issues a delivery order for the work.

The objective of job order contracting is to increase the responsiveness of RPMA support to the installation by decreasing the engineering and contracting leadtime without sacrificing cost, quality, or administrative control. In the past 10 years, RPMA work at Army installations has doubled in real terms, while the staffs of the installations' Directors of Engineering and Housing (DEH) — those responsible for RPMA — have increased by less than 1 percent. Likewise, the staffs of the installations' Directors of Contracting (DOC), who provide the DEH with contractual support, have not increased significantly. The increased workload combined with the stagnant staffing levels have resulted in a decrease in RPMA responsiveness. Job order contracting is proposed as a solution to that problem.

The U.S. Army Corps of Engineers (USACE) is currently testing the effectiveness of the JOC concept at a number of Army installations. To date, eight JOCs have been awarded with five more sites awaiting award. Under JOCs, more than \$57 million of RPMA support has been accomplished during the test period, with the average JOC contractor placing \$6 – \$7 million of work per year.

Job order contracting was evaluated in the following six areas:

- Its ability to improve DEH responsiveness
- Its ability to maintain or improve the quality of RPMA
- Its effect on small and small disadvantaged businesses and on commercial activity reviews
- Its effect on contracting office workload and the existing contracting backlog
- The adequacy of its support documents such as the UPB and the Execution Guide
- The contract administration and legal issues raised during the test.

We used both performance and perceptual data in evaluating job order contracting. The DEH staffs collected performance data on cost and responsiveness at test installations in conformance with a test evaluation plan that specified the data format and the frequency with which the data were to be collected. The performance data are quantitative and represent observations for both JOC and non-JOC work so that meaningful comparisons can be made.

Since some areas cannot be evaluated with performance data alone, the Army developed a series of questionnaires to assess the subjective aspects of certain areas. Again, a test evaluation plan was followed to ensure that data were collected consistently. The performance and perceptual data were supplemented with interviews, audit reports, JOC contractor internal evaluations, General Accounting Office (GAO) opinions, and information obtained from in-progress reviews of JOCs. The combination of all these data represents the basis for the evaluation.

The remainder of the report presents the findings and evaluation of the Army's job order contracting test. The results of the evaluation and the conclusions that can be drawn from these findings are presented in Chapter 2 along with a discussion of the planning that will be necessary if full-scale implementation is chosen. The

appendices contain detailed information on JOC work flow (Appendix A), summarized questionnaire data (Appendix B), and a summary of performance data (Appendix C).



## **CHAPTER 2**

### **EVALUATION OF TEST RESULTS AND CONCLUSIONS**

All eight Army installations that have awarded JOCs participated in the test and provided information on test results; however, in some cases few data are available since little time elapsed since contract award. With few exceptions, the test results are consistent and highly supportive of JOC. In this chapter, those results – supplemented in some cases with additional information – are examined for each of the six evaluation areas cited in Chapter 1. Supporting data are presented in the appendices.

#### **DEH RESPONSIVENESS**

##### **Evaluation**

In evaluating job order contracting, the foremost concern is the JOC's impact on DEH responsiveness in supporting missions. The DEH is responsible for providing RPMA work that supports the installation's units and activities in the performance of their mission. How well the DEH provides that support has a significant effect on the installation's ability to accomplish its mission. An installation commander must have well-maintained and functioning facilities to maintain morale, field and maintain sophisticated equipment, and effectively train soldiers. A long-standing complaint of commanders is that RPMA work takes too long; the time required for programming, for design, for solicitation and award, and for contract execution often extends RPMA work beyond the commander's planning horizon and mission requirements. DEH support must be timely if an installation commander is to maximize the effectiveness of units and activities at the installation. RPMA responsiveness is a key measure of how well the DEH supports an installation's mission.

A major objective of a JOC is to provide the installation commander with the kind of RPMA responsiveness required to have a positive, timely influence on mission accomplishment. It is designed to significantly decrease the time required to plan, engineer, and contract for all sizes of RPMA work by using simplified engineering and procurement procedures (see Figure 2-1). Table 2-1 shows that

under job order contracting, small orders are delivered in less than 20 percent of the time it takes under conventional contracting. Medium-size and large orders are delivered in about 25 percent of the usual time.

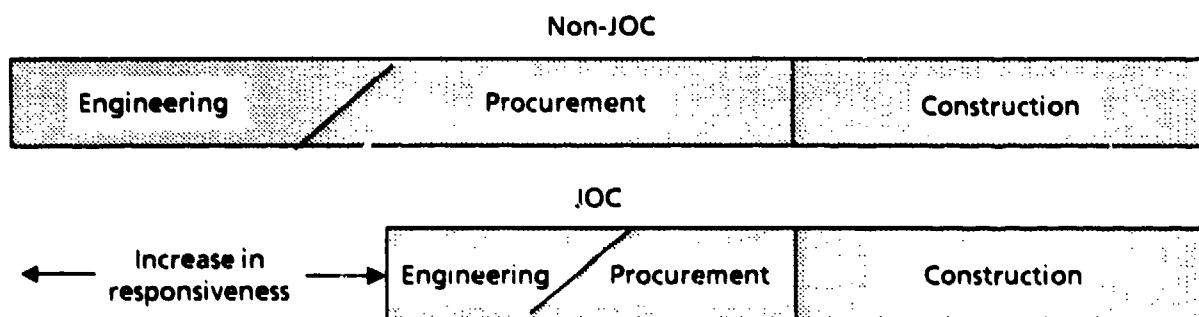


FIG. 2-1. COMPARISON OF ENGINEERING AND PROCUREMENT LEADTIMES

TABLE 2-1  
RESPONSIVENESS

Delivery order size	Number of job orders in sample	Average days per delivery order <sup>a</sup>
<b>Small</b>		
JOC	190	42
Non-JOC	29	233
<b>Medium</b>		
JOC	84	52
Non-JOC	45	193
<b>Large</b>		
JOC	19	68
Non-JOC	13	279

Source: USACE JOC Data Collection. See Tables C-1 and C-2

<sup>a</sup> Time is measured from the beginning of the delivery order (or contract) award process until the start of construction

Installation commanders and their staffs overwhelmingly indicated that JOCs result in increased ability of the DEHs to respond to requests for RPMA construction work and to complete the work more rapidly (see Figure 2-2). Installation

commanders particularly expressed a belief that job order contracting increases the DEH's RPMA construction responsiveness and thus enhances its mission support.

The placement and delegation of contractual authority is a key issue that can dramatically affect the responsiveness of JOC. During the test, contracting officer authority resided in the USACE District that was administering the JOC while ordering officer authority was delegated to the DEH. Opinions of where ordering and contracting officer authority should reside differ significantly. Many members of the Directorate of Contracting staffs believed that this delegation of authority to the DEH was excessive. Conversely, almost all DEH personnel believed that the delegation was either adequate or that they should have more authority (see Figure 2-3).

Perhaps the most telling statement on DEH's responsiveness with JOC is the unanimous desire of installation commanders and DEH staff to retain JOCs at their installations (see Figure 2-4). Clearly, the fact that individuals most affected by JOCs want them to continue speaks for their continuance.

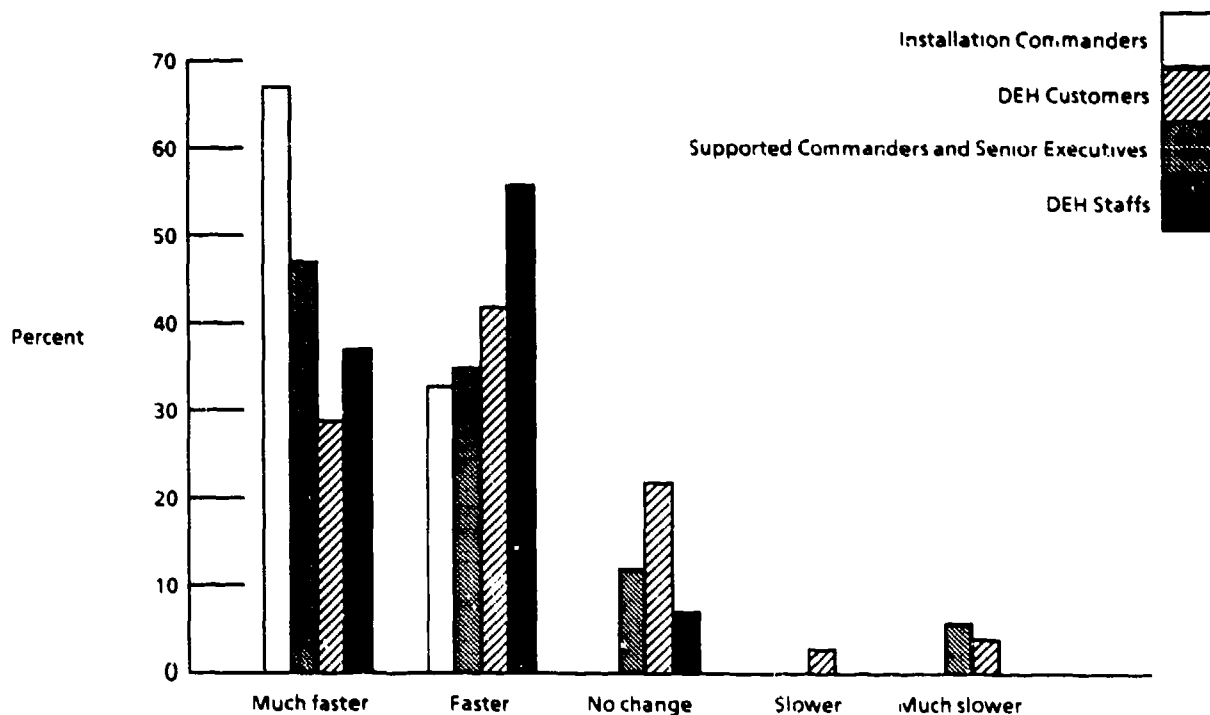
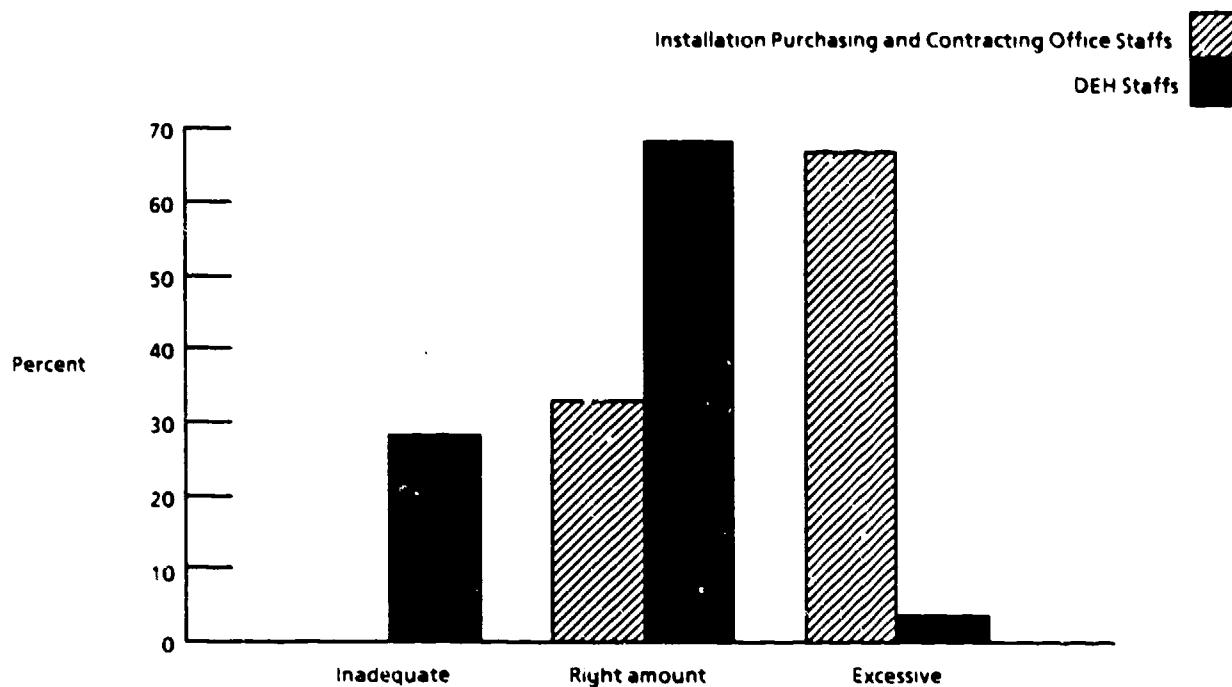
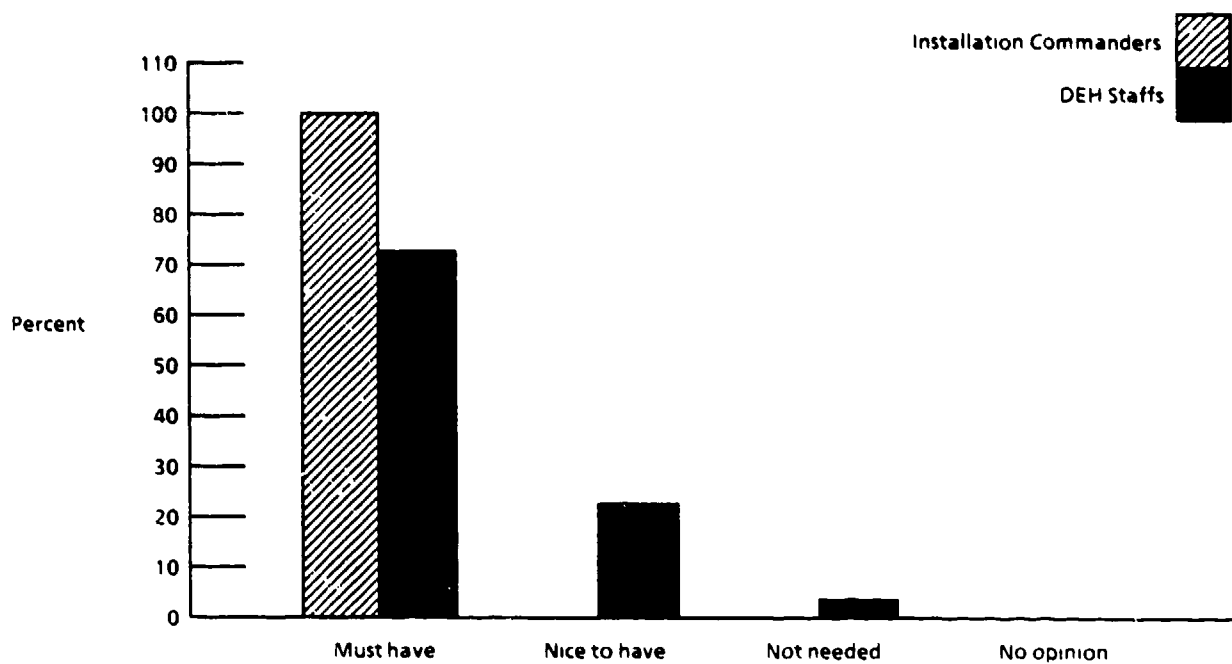


FIG. 2-2. DEH'S RESPONSIVENESS WITH JOB ORDER CONTRACTS



**FIG. 2-3. OPINION ON THE AMOUNT OF CONTRACTUAL AUTHORITIES DELEGATED TO THE DEH**



**FIG. 2-4. DESIRE TO RETAIN JOB ORDER CONTRACTING**  
(Based on experience to date)

## Conclusions

JOCs enhance DEH mission support primarily because they can be completed more quickly than normal construction engineering and contracting actions. The time and resource savings with JOCs do not imply that gross inefficiencies prevail in existing contracting procedures but rather indicate that savings can occur when uncomplicated procurements are sorted out and processed with a streamlined system. Successful JOC processing is more a matter of applying the appropriate amount of resources to an action than of increasing efficiencies. A significant amount of installation RPMA construction contracting will always have to be done through standard methods, most appropriately through the installation's Directorate of Contracting. However, when used appropriately, JOCs can greatly increase the mission support that a DEH can provide the installation.

We believe that JOCs can be most effective when the ordering officer authority remains with the DEH. Otherwise, any improvements in responsiveness attributable to job order contracting will likely be diminished or lost since JOC actions will, once again, be treated like all other construction procurements.

We do not believe that it makes any difference whether the contracting officer authority resides at the installation or at the servicing USACE District. Both approaches offer benefits. The Districts are familiar with construction contracting and have legal, procurement, and engineering staffs well versed in the issues. Alternatively, the installations are collocated with the DEH and may be better able to respond to an installation commander's priorities. We believe the installation commander should make the final decision on who should be the contracting officer since it is the installation commander's needs and priorities that should be paramount in the decision.

## RPMA QUALITY

### Evaluation

Maintaining or even increasing the quality of RPMA construction is a secondary objective of job order contracting. In theory, quality management under a JOC is similar to that for normal RPMA work. In practice, however, it differs significantly. In all Government construction contracts, the contractor is responsible for quality control and the Government oversees quality through its

quality assurance role. In JOCs, however, quality management is facilitated by the close interaction between the user, the DEH, and the contractor. This close interaction permits the needs of installation management to be communicated effectively to the JOC contractor. It also fosters a cooperative spirit between that management and the contractor, which usually enhances construction quality. JOC also greatly enhances the ability of the DEH to influence whether the contractor receives additional work. If a contractor does not provide quality work, installation management is under no obligation to use him for future delivery orders. That procedure differs markedly from the normal construction contract situation in which it is extremely difficult to keep a mediocre contractor from bidding on future work. With a JOC, the contractor is continually putting his reputation and the prospect of future work on the line — a strong incentive for providing quality construction.

DEHs, their staffs, and the staffs of USACE Districts administering JOCs all feel that construction quality is at least as good as that obtained with traditional RPMA contracting and in many cases it is better (see Figure 2-5).

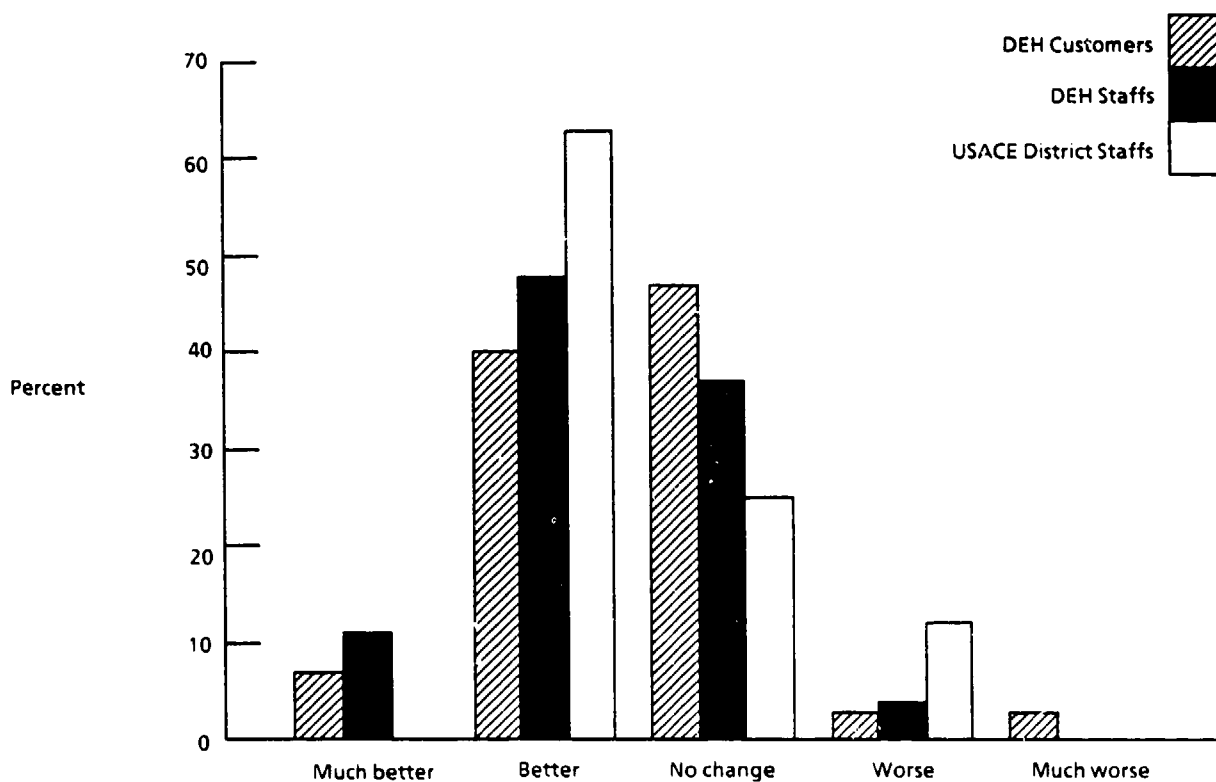


FIG. 2-5. CONSTRUCTION QUALITY UNDER JOC

## **Conclusions**

JOCs have no negative impact on the quality of construction. Questionnaire data indicate that while JOCs do not have a negative impact, they may even have a positive influence on the level of quality provided by construction contractors.

## **BUSINESS IMPACT**

### **Evaluation**

#### ***Small and Small Disadvantaged Businesses***

A major concern of JOC test evaluators is that small and small disadvantaged businesses may be negatively affected by job order contracting. The test results show that this concern is unfounded. In fact, job order contracting provides assistance and opportunities to small and small disadvantaged businesses that were not previously available.

The fear that small and small disadvantaged businesses would be excluded from participation in job order contracting has not been realized. Actual participation by such firms has, for the most part, been significantly higher than planned goals. Table 2-2 is a summary of the prime contractors' small and small disadvantaged business goal performance at JOC test installations for which participation statistics are available.

At most installations, small and small disadvantaged businesses have done much better than just meeting planned contract goals. At Fort Bragg, more than 80 small business subcontractors do 97 percent of all work. At Fort Ord, 73 percent of the work is performed by small businesses, with 47 contractors being small businesses and 3 small disadvantaged businesses. The same small business trends are present at Aberdeen Proving Ground and at installations in Alaska.

The prime contractors at these installations provide excellent examples of how job order contracting can be conducive to small and small disadvantaged businesses. Small businesses wishing to work for the Government face a number of significant barriers. Understanding and complying with Government regulations and procedures is a major undertaking for a small business; obtaining performance and payment bonds may also be beyond the capabilities of small businesses that have never previously been bonded or are thinly financed. Under job order contracting,

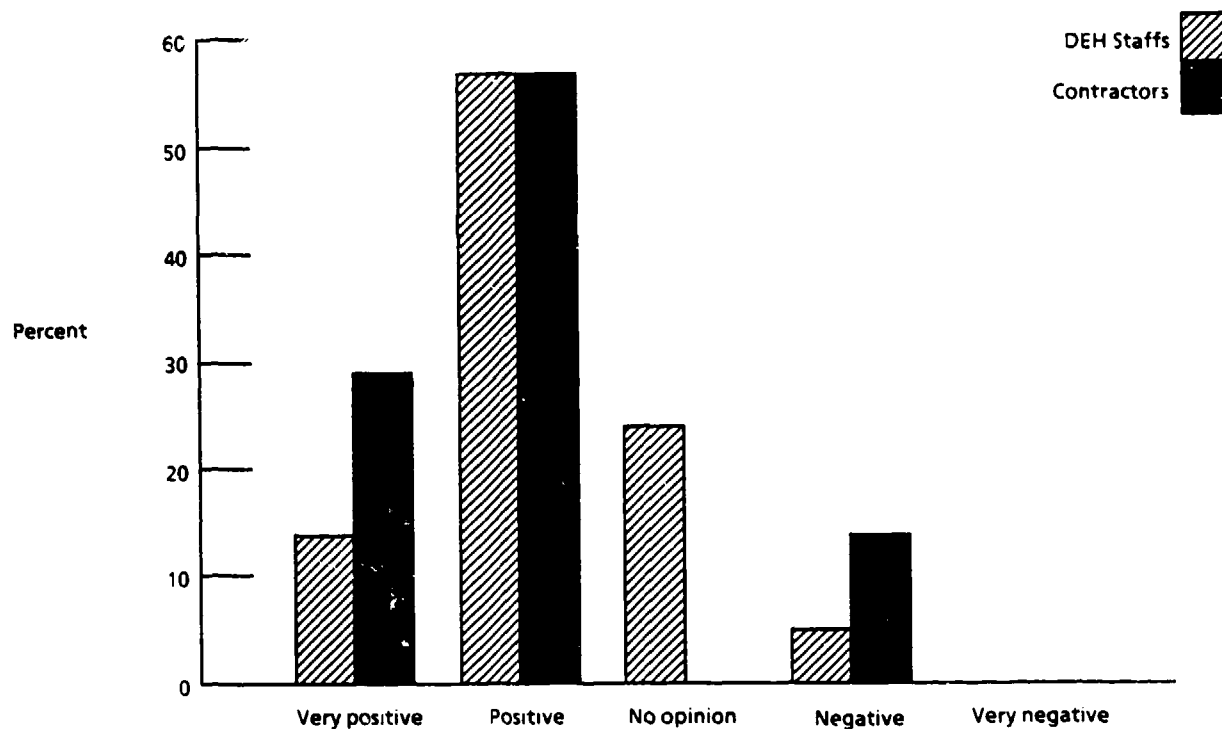
**TABLE 2-2**  
**SMALL AND SMALL DISADVANTAGED BUSINESS SUBCONTRACTING**  
**PARTICIPATION IN JOC**

Installation	Planned (percent)	Actual (percent)
<b>Fort Ord</b>		
Small business	25	73
Small disadvantaged business	1.5	11
<b>Fort Bragg</b>		
Small business	60	97
Small disadvantaged business	10	11
<b>Aberdeen Proving Ground</b>		
Small business	90	94
Small disadvantaged business	50	26
<b>Alaska</b>		
Small business	95	100
Small disadvantaged business	35	15

the prime contractor removes those regulatory and procedural barriers by assuming the responsibility for meeting Government requirements, and subcontractors are not required to be bonded. In many cases, the prime contractor has gone even further by issuing joint checks to ensure the delivery of materials and by lending small tools and equipment to subcontractors. Such an environment is conducive to small business participation. Contractors and DEH personnel generally agree (see Figure 2-6).

There appears to be little connection between the presence of a JOC and small and small disadvantaged business goal attainment at the installation level. Small and small disadvantaged business goal attainment in the JOC test year show few significant changes from the pre-JOC years, with many installations showing improvement during the period of the job order contracting test (see Table 2-3). There are many things that can significantly affect small and small disadvantaged business goal attainment, but JOC does not appear to be one of them.





**FIG. 2-6. SMALL AND SMALL DISADVANTAGED BUSINESS SUBCONTRACTING UNDER JOC**

**TABLE 2-3**

**AVERAGE SMALL AND SMALL DISADVANTAGED BUSINESS GOAL  
ATTAINMENT**

Army Command	Pre-JOC (percent)	JOC test year (percent)
<b>Training and Doctrine Command</b>		
Small business	93	98
Small disadvantaged business	116	96
<b>Forces Command</b>		
Small business	104	100
Small disadvantaged business	96	110
<b>Army Materiel Command</b>		
Small business	98	94
Small disadvantaged business	92	160

## Commercial Activity Program Impact

Commercial activity (A-76) cost comparison reviews are a sensitive installation issue. (In those reviews, activities performed by in-house organizations are competed with the private sector to determine whether they can be performed more economically under contract.) Some believe that a JOC can affect the outcome of a review. The test results indicate that the existence of a JOC has no effect on the commercial activity programs (see Figure 2-7). This result comes as no surprise since the decision to contract out work is based on the relative costs of the Government in-house work force and those of a contractor, and JOCs impact neither of these. Furthermore, JOC work is not normally performed in-house and is, therefore, not a candidate for commercial activity reviews.

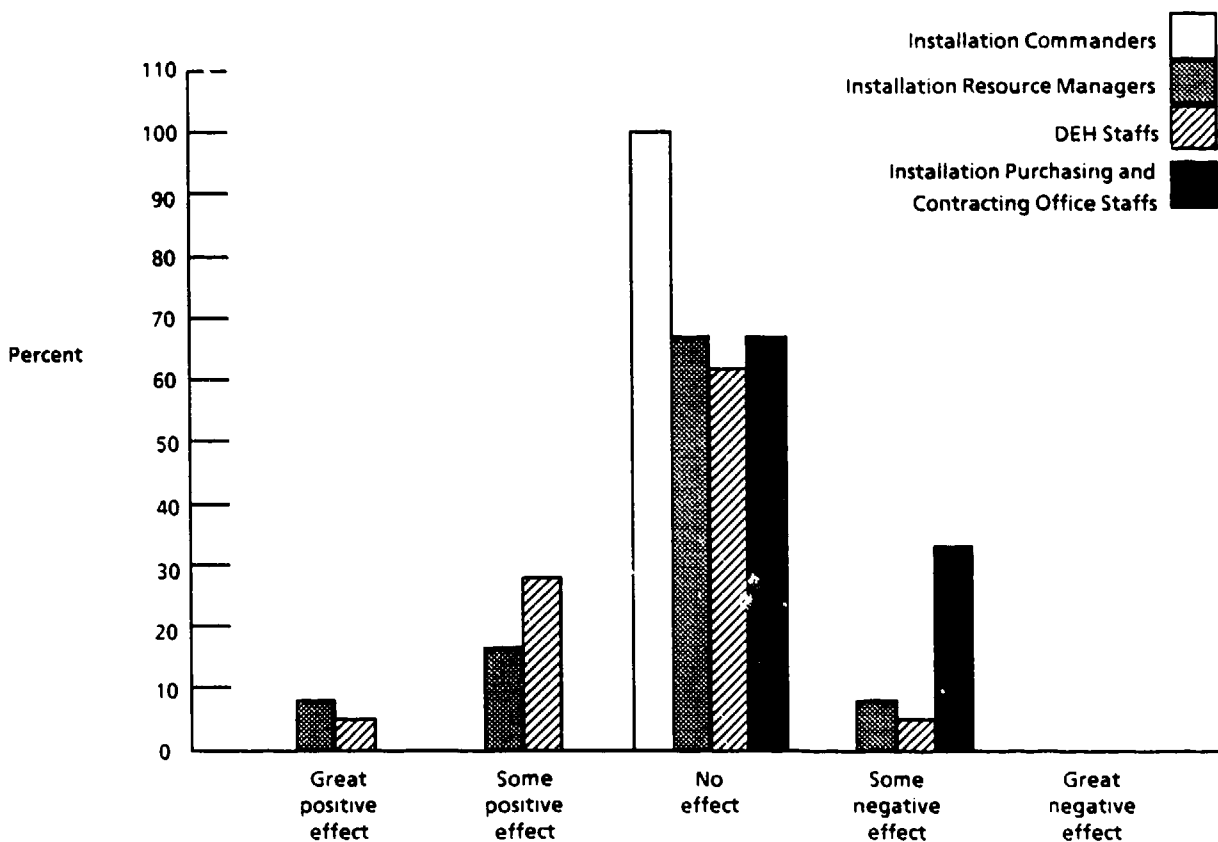


FIG. 2-7. JOB ORDER CONTRACTING EFFECT ON COMMERCIAL ACTIVITIES PROGRAMS

## Conclusions

JOCs do not have a negative impact on small businesses and small disadvantaged businesses nor any impact on commercial activity reviews at an

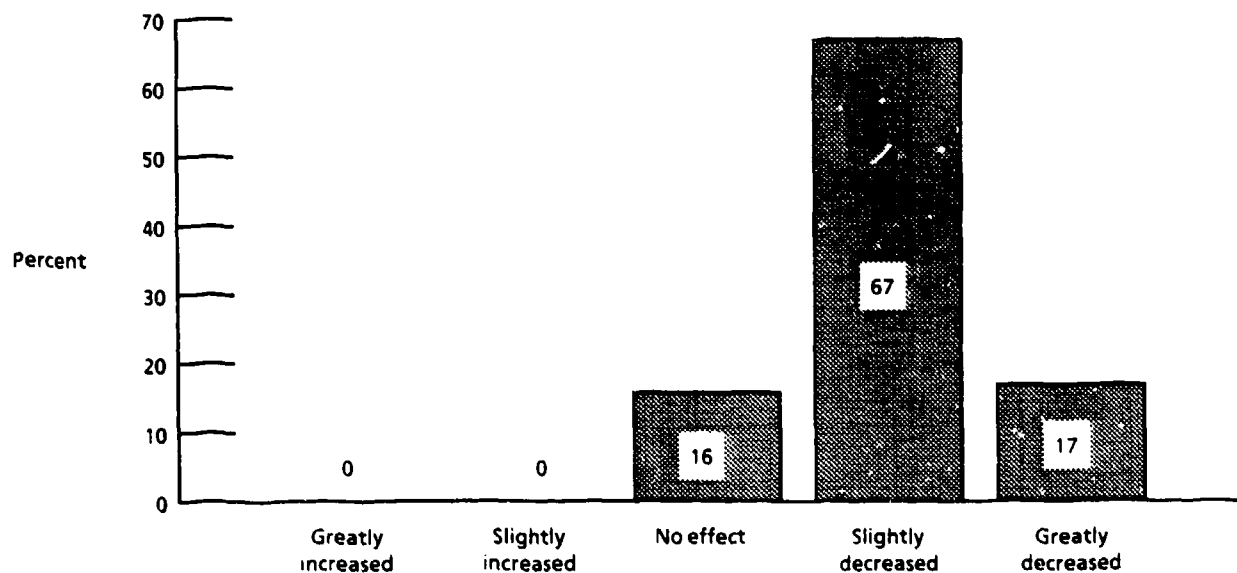
installation. In fact, the test data indicate that JOCs may have a significant positive effect on small business activity at an installation. We also found that JOCs do not interfere with commercial activity reviews at an installation. If JOCs have any business impact, it is positive.

## **CONTRACTING WORKLOAD**

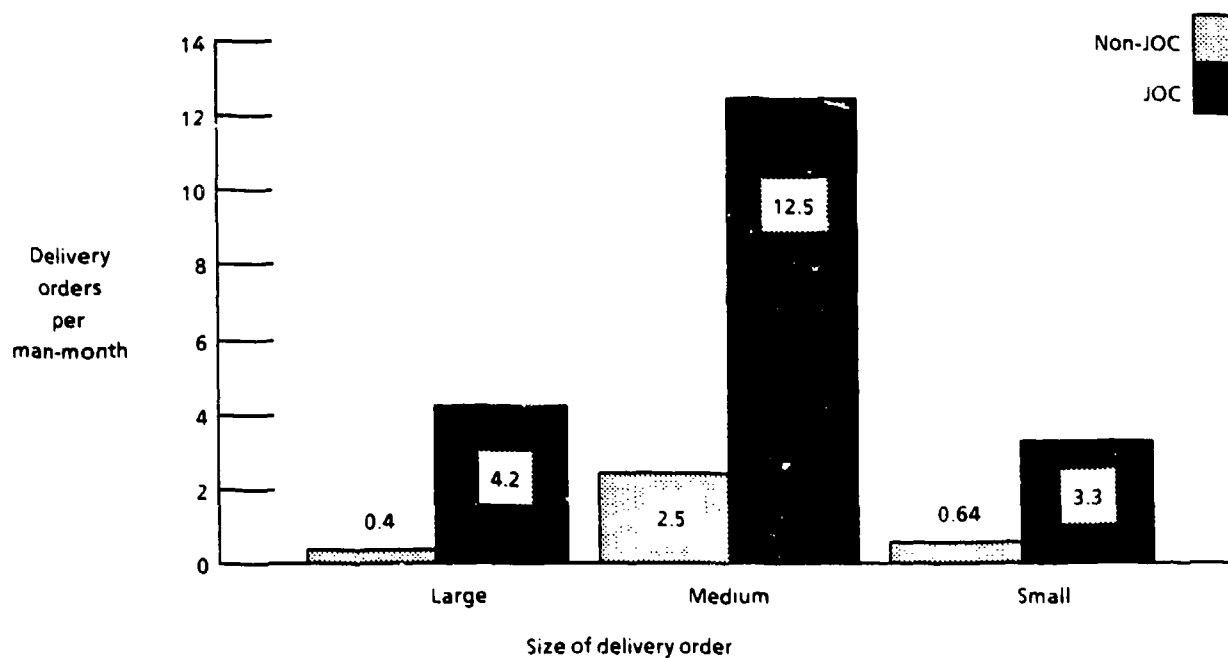
### **Evaluation**

Many in the Army's contracting community are concerned that job order contracting may result in reduced contracting office staffing, which ultimately will have a detrimental impact on their ability to provide contracting support. Directorates of Contracting staffs at those installations that are utilizing JOCs, however, believe that JOCs have no or slight effect on them and their workload (see Figure 2-8). Part of that perception is due to the large contracting activity backlog that exists at nearly every installation. Any Directorate of Contracting manpower savings that job order contracting may be responsible for at an installation is quickly absorbed by the existing workload backlog. Manpower savings from job order contracting are not of the magnitude that they are likely to translate into staff reductions for the Directorate of Contracting. The savings are more likely to reduce the backlogged contractual workload and improve overall contracting support at the installation.

Although JOCs are likely to have only a minimal effect on the Directorate of Contracting's staffing, they do provide installations with two new capabilities. First, they provide an increased capacity for processing RPMA work that falls within the scope of a JOC. Given that processing JOC delivery orders takes significantly less effort than processing standard construction contracts, a contracting staff can process significantly more JOC delivery orders than standard contracts (see Figure 2-9) thereby providing more contracting support to the installation with the same level of staffing. Likewise, flexibility and responsiveness of JOC contractors at the end of the fiscal year are much greater. The cutoff dates for JOC actions can be much later in the fiscal year than those for standard construction contractual actions because of reduced leadtimes, and thus provide an installation commander with a much needed increase in responsiveness and flexibility at the end of the fiscal year (see Figure 2-10).



**FIG. 2-8. JOB ORDER CONTRACTING EFFECT ON CONTRACTUAL WORKLOAD – PERCEPTIONS OF INSTALLATION DIRECTORATE OF CONTRACTING STAFFS**



**Notes:** Based on average procurement costs and man-month costs of \$2,500.  
Delivery order sizes used are: large = \$200,000, medium = \$100,000, small = \$15,000.

**FIG. 2-9. RPMA CONTRACTING PER MAN-MONTH OF EFFORT**

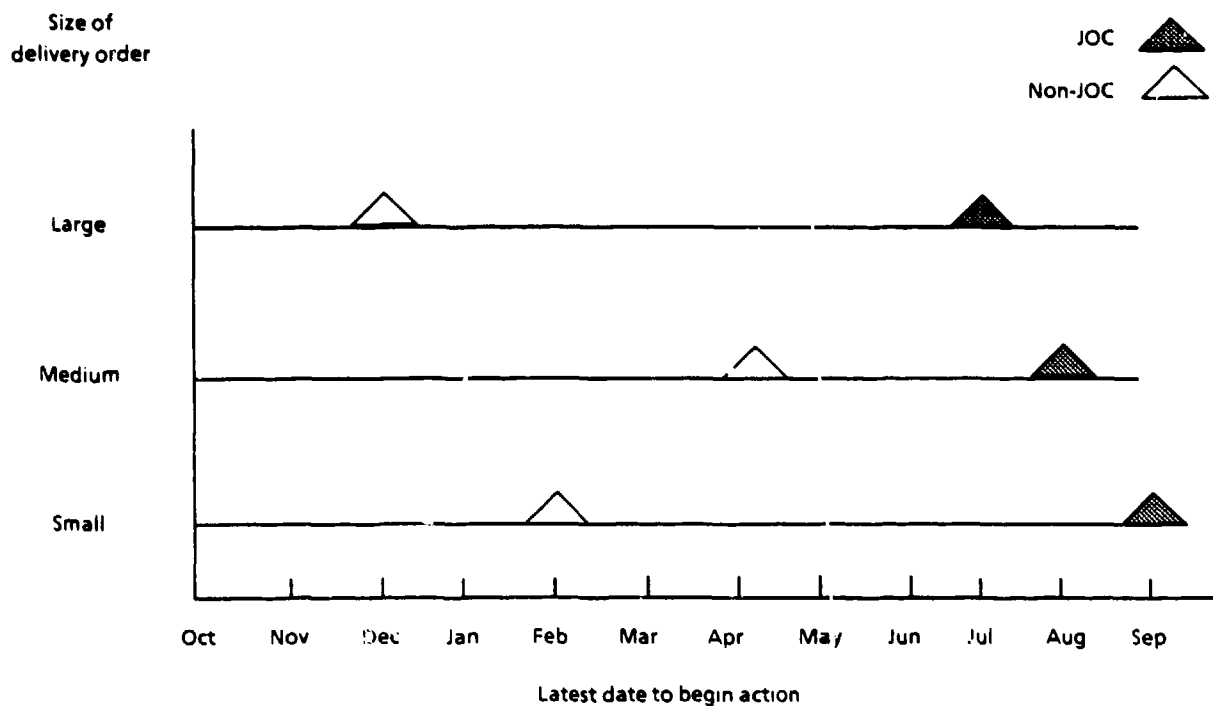


FIG. 2-10. END OF FISCAL YEAR RESPONSIVENESS

Although JOCs were not developed to produce savings in procurement costs, they do. The costs for procuring construction with and without JOCs are presented in Table 2-4. Although JOC and non-JOC procurement costs vary significantly, procurement costs for small and medium delivery orders are lower under job order contracting. The data for large delivery orders support similar conclusions even though the results are statistically inconclusive due to the high variance. Job order contracting provides installation commanders with a means to procure selected construction at costs lower than those for standard methods.

## Conclusions

JOCs increase the construction contracting capability of the installation as well as its fiscal year-end flexibility and responsiveness. The fact that the JOC is less resource-intensive permits Directorate of Contracting staffs to address contract backlogs in standard contracts at participating installations. This same factor would enable the installation to provide greater volumes of construction contracting in emergency conditions. Similarly, the fact that JOC actions can be completed in less time provides an installation commander with greater fiscal year-end responsive-

**TABLE 2-4**  
**COST OF CONSTRUCTION CONTRACTING**

	Average procurement costs (\$ per \$1,000)
<b>Small</b>	
JOC	0.28
Non-JOC	0.35
<b>Medium</b>	
JOC	0.16
Non-JOC	0.40
<b>Large</b>	
JOC	0.21
Non-JOC	0.74

*Source:* USACE JOC Data Collection. See Tables C-9 and C-13.

ness. All of these conditions result in increased contracting support to the installation.

## **SUPPORTING DOCUMENTS**

### **Evaluation**

Further refinements are needed in JOC supporting documents — the Unit Price Book (UPB) and the Execution Guide. The UPB is the detailed task listing that describes the unit of work and the unit price for each contract. The information in the UPB is developed from USACE's Computer Aided Cost Estimating System (CACES) data base. Each UPB is site-specific and is the basis for establishing the price of each delivery order. In general, JOC users in the Government found the UPBs and their automated support systems to be satisfactory. However, the number of tasks that are not included in the UPBs but are commonly required needs to be reduced by developing unit costs for those tasks and including them in future UPBs. In response to these concerns, USACE currently has a UPB in production that would add 2,500 tasks to the UPB. Correction of this deficiency would remove the major criticism of the UPBs.

The Execution Guide is the primer for all JOC actions. Many JOC users believe that more detailed guidance needs to be included in the Execution Guide. USACE is creating a supplement to the Execution Guide which should address most of these concerns. Some comments, however, relate to understanding the JOC process and may be more appropriately handled with training. Additional training on contract administration and contract negotiations should be provided to DEH staffs who use JOCs. That training could be developed from modified versions of existing USACE training, or specialized JOC courses could be developed. USACE has recently produced a JOC training film and is in the process of developing a JOC training course. The outline for the training course has been developed and the content appears to address the concerns raised by the field.

## **Conclusions**

JOC supporting documents and JOC training need to be improved. The UPBs need to be revised to incorporate frequently used non-prepriced items. The Execution Guide should also be reviewed to ensure that guidance is described in adequate detail. Training courses need to be developed, and DEH staffs who will be using JOC must be scheduled for JOC training as well as contract administration and contract negotiation courses. Current USACE actions should meet most of these needs.

## **CONTRACT ADMINISTRATION AND LEGAL ISSUES**

### **Evaluation**

The USACE position is that JOCs should not be based on exceptions to existing contract administration policy and legal requirements. Both the JOC Execution Guide and implementation policy are designed to ensure compliance with existing policy, regulations, and laws. A measure of the success of these efforts is provided by the results of an audit of the Aberdeen Proving Ground (APG) JOC by the Internal Review and Audit Compliance Office for the Army Test and Evaluation Command (TECOM).<sup>1</sup> TECOM auditors found that procedures had been implemented to ensure that proper contract administration is being performed. They also found that APG satisfactorily complied with those procedures although it needed to place

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<sup>1</sup>Internal Review Report No. 14-87. *Review of Job Order Contracting System*. Directorate of Engineering and Housing. USAAPGSA. Internal Review and Audit Compliance Office, HQ U.S. Army Test and Evaluation Command. 22 Oct 1987.

additional emphasis on documenting internal control reviews and inspections — problems that occur on all construction projects, not merely those under job order contracting.<sup>2</sup>

The potential for contracting abuses — so called “fraud, waste, and abuse” — under job order contracting was also reviewed. When JOCs were initiated, some segments of the Army contracting community were concerned that JOCs presented a greater potential for these abuses than other types of construction contracting. Those concerns arose because the DEHs both order and accept work and combining those activities increases the potential for problems. Adding to that concern was the belief that a staff trained in engineering and facility skills would have difficulty administering contracts. Neither of these problems has materialized. The TECOM audit did not find any increased potential for contracting abuses nor did it discern any conflict of interest with the DEH being the ordering officer. That finding is consistent with the USACE experience using resident contracting officers with similar training as DEH personnel both to order and to accept construction work. The office of the Engineer Inspector General indicated that it has no record of ever having a contract abuse problem with a resident contracting officer. JOCs do not appear to provide any greater potential for abuse than does any other method of contracting for construction.

Review of the legal aspects of job order contracting made by the GAO provides an insight to other concerns. GAO was asked to review the JOC concept to determine whether it complied with existing policy and law regarding competition requirements, the small and small disadvantaged business programs, sealed bidding requirements, compliance with architect/engineer selection practices, and risk-sharing between the contractor and the Government. GAO found the JOC concept to be consistent with existing policy, regulations, and law in all of these areas.<sup>3</sup>

## Conclusions

Concerns that JOCs have a high potential for contract administration or legal problems are not supported by the test results. Contract administration problems are limited to those that are normally experienced with construction contracts —

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<sup>2</sup>*Report of the Engineer Inspector General on Quality Assurance and Quality Control of Construction.* Office of the Engineer Inspector General. 25 Feb 1986.

<sup>3</sup>General Accounting Office Opinion B-222337, dated 22 Jul 1986.



documentation, follow-up, etc. Contracting abuse has proven to be no more a problem with a JOC than with any other contracting action. Concerns about JOC not complying with existing regulations and laws cannot be substantiated. Extraordinary contract administration or legal problems with JOC simply do not exist.

## SUMMARY

Overall, job order contracting has lived up to expectations. Such contracts provide an effective way for bettering the mission support that a DEH provides to the installation while maintaining cost, quality, and administrative controls. This belief is held by installation commanders, DEHs, supported commanders, installation resource managers, and installation Directorate of Contracting staffs (see Figure 2-11).

Statistics indicate that through job order contracting, Fort Ord is 10 to 15 percent below the government estimates, in spite of the added responsiveness which should cost us a premium. This means that we are doing more with our installation's dollar.<sup>4</sup>

Job order contracting is working well for us; we believe the concept is proven; and, we recommend that JOCs continue here and be established at other installations as quickly as possible. In this era of diminishing resources, it is an innovative method to procure quality work, relatively inexpensively and with minimal red tape.<sup>5</sup>

Job order contracting has proven itself as a flexible, responsive and effective tool for improving support to Army soldiers and their families.<sup>6</sup>

We conclude that the use of job order contracting is an effective way for the Army's Directors of Engineering and Housing to improve the mission support for Army installations and at the same time maintain cost, quality, and administrative controls. We found positive results in all six evaluation areas and believe that no significant problems exist with JOCs.

A number of issues must be addressed if a decision is made to proceed with implementation of job order contracting. Several organizations will be involved in the full-scale implementation: major command and installation commanders and

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<sup>4</sup>MG Edwin H. Burba, Jr., CG, 7th ID and Fort Ord, Ca.

<sup>5</sup>LTG John W. Foss, CG, XVIII Airborne Corps and Fort Bragg, N.C., 29 Oct 1987.

<sup>6</sup>MG Robert D. Wiegard, Chief of Staff, FORSCOM, 13 Dec 1987.

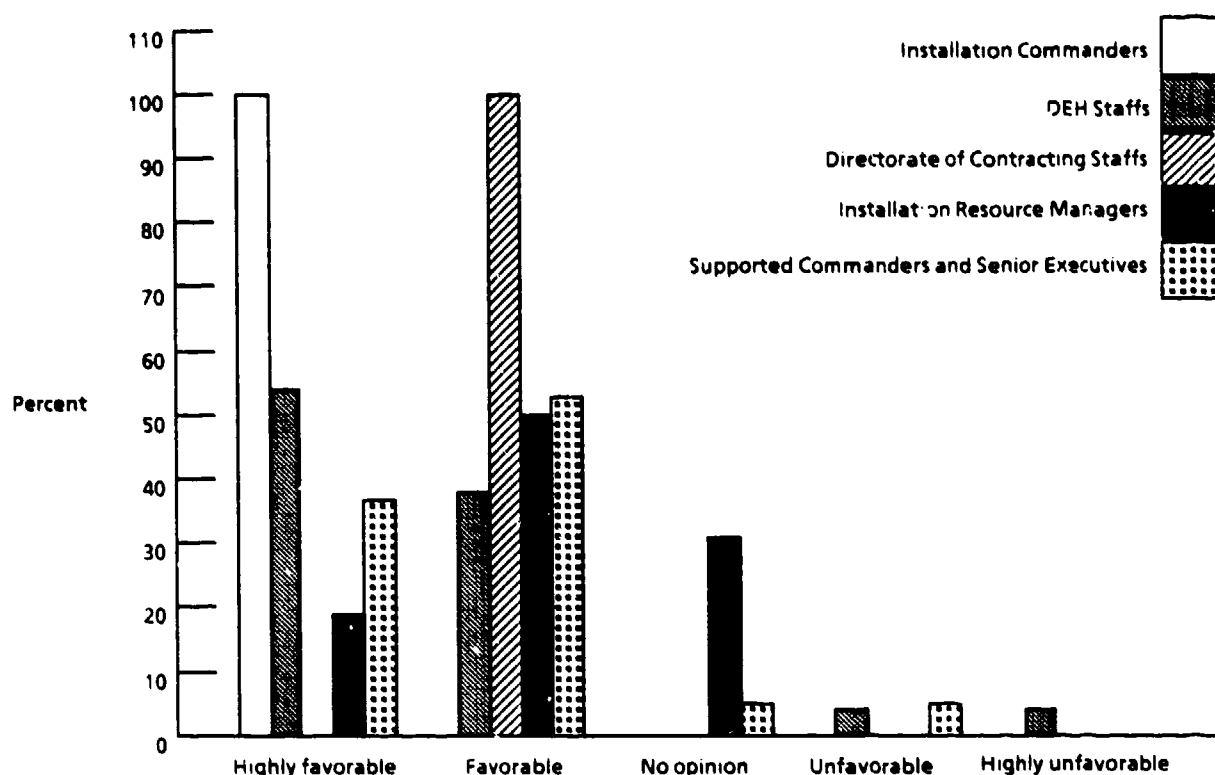


FIG. 2-11. OVERALL OPINION OF JOB ORDER CONTRACTING

their staffs, USACE and its support Divisions, the Engineering and Housing Support Center (EHSC), and USACE support contractors as well as those installations that either currently have or are expecting to award JOCs. Improvements must be made while support is maintained to the installations using a JOC. Concurrently, the administration of the JOC program must be transitioned from USACE to EHSC. A detailed implementation plan that identifies specific tasks, schedules, and responsibilities is needed to ensure that all of these activities happen at the appropriate time. Some of these activities require contractual actions with long leadtimes while others involve participants from multiple organizations. A detailed plan must be developed soon after a decision on implementation is made to ensure JOCs continue to be effective tools for DEHs.

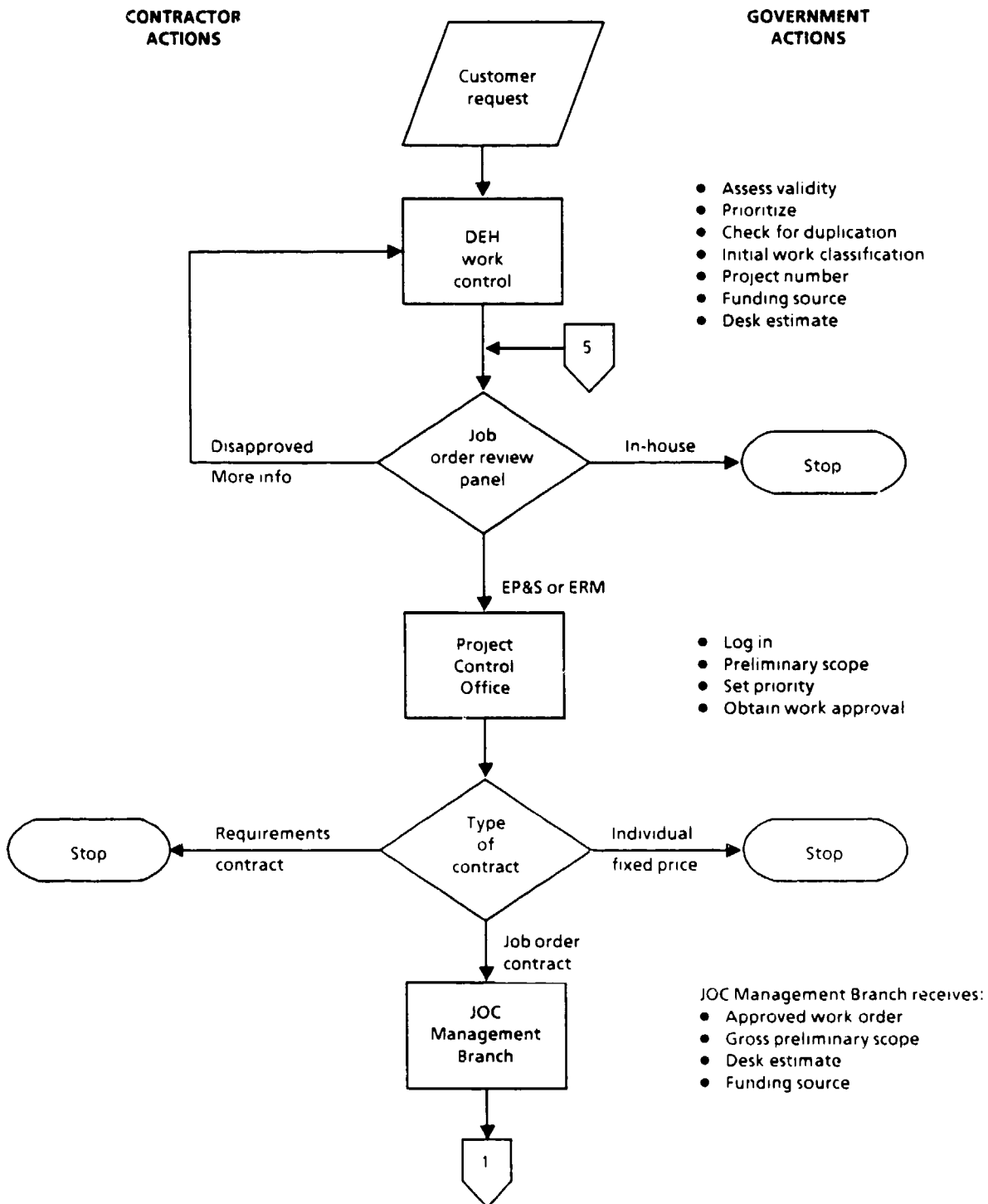
**APPENDIX A**

**JOB ORDER CONTRACT WORKFLOW DIAGRAM**

## **APPENDIX A**

### **JOB ORDER CONTRACT WORKFLOW DIAGRAM**

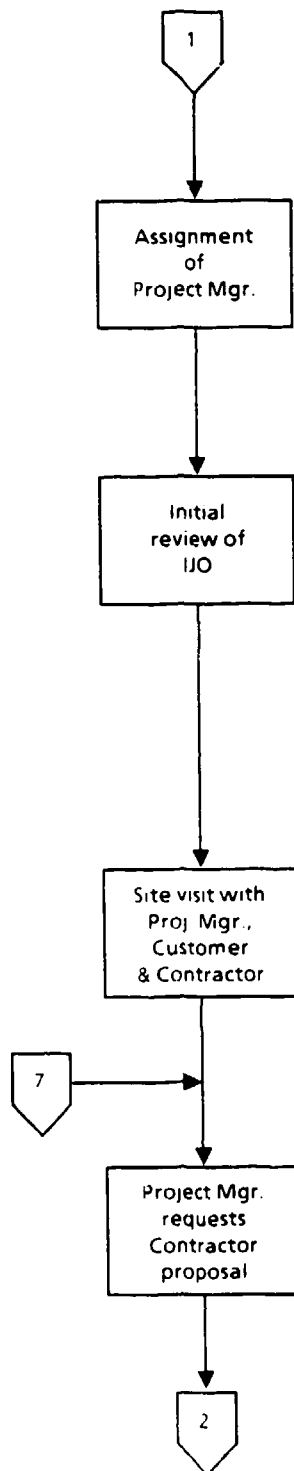
Appendix A contains a detailed description of the processes that make up Job Order Contracting. Its purpose is to provide a more detailed explanation of how JOC works than is provided in the main body of the report.



# CONTRACTOR ACTIONS

# GOVERNMENT ACTIONS

- Site investigation
- Participate in scoping and quantity measurement
- Offer suggestions for method of execution



- JOC Project Manager:
- Engineer, architect or technician
  - Assignment based on the scope, complexity, and predominant discipline of IJO

- Project Manager:
- Familiarization with IJO
  - Initial contact with customer and contractor
  - Preliminary review of applicable standards and regulations pertaining to this type of work
  - Government site visit

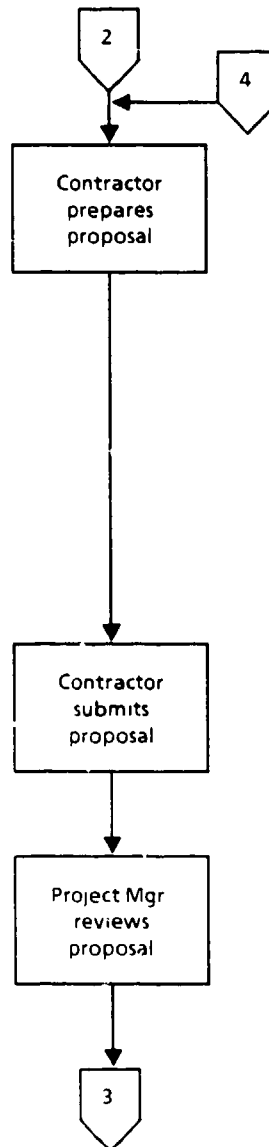
- Site Investigation
- Refine the requirement
  - Detail scope
  - Establish preliminary quantities
  - Discuss work schedule

- Request for proposal document
- Name of project
  - Project number
  - Scope of work
  - Date of request
  - Date proposal due
  - Special instructions on content, drawings, and samples

### CONTRACTOR ACTIONS

- Identifies and extracts individual tasks
- Refines quantity estimates
- Identifies and prices non-prepriced tasks
- Identifies any overtime work
- Prepares working drawings/sketches
- Develops performance time
- Prepares proposal document standardized format & number of copies
- Proposal document signed by authorized official of the firm

- Clarify questions regarding the proposal with the DEH Project Manager



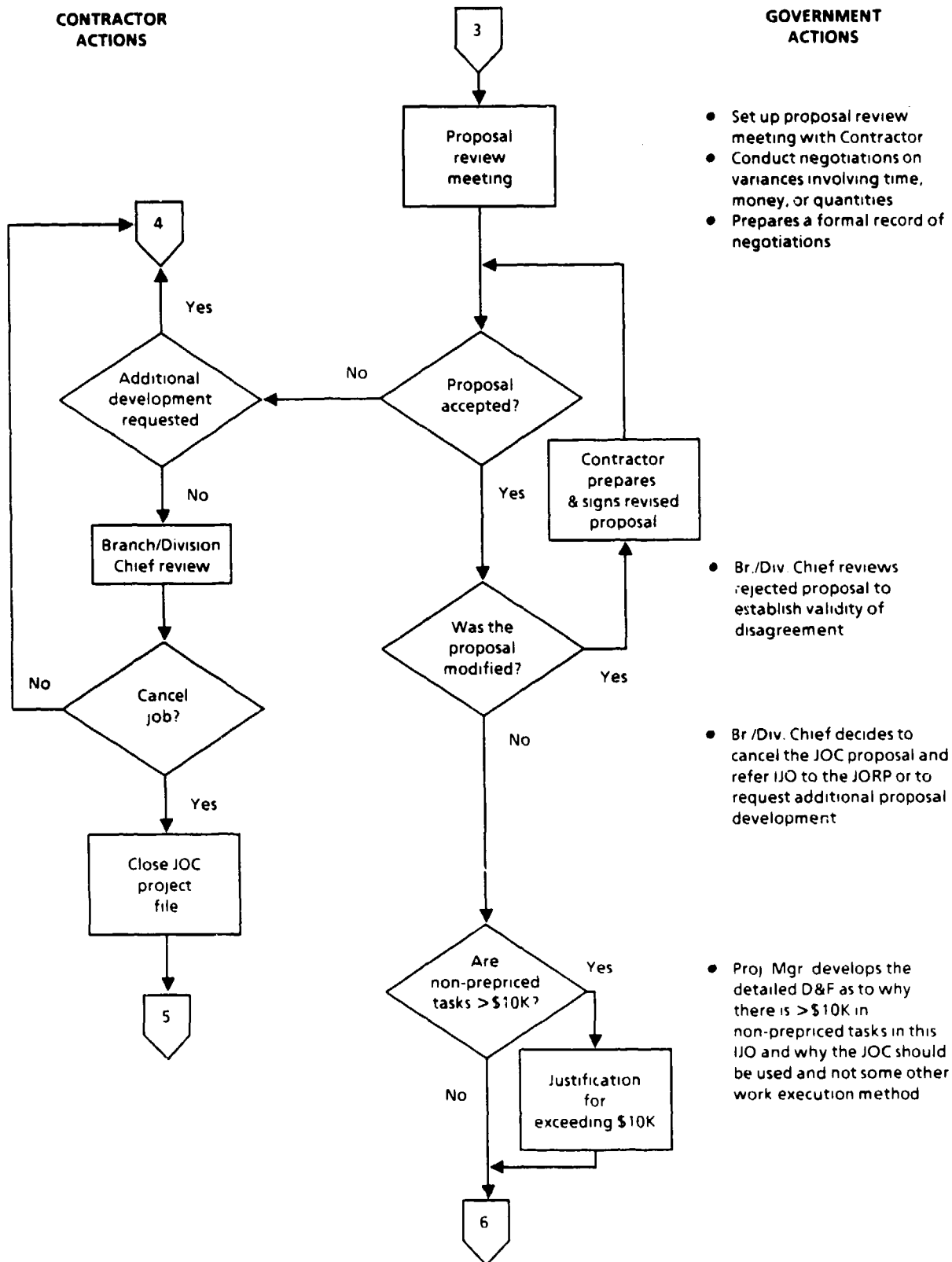
### GOVERNMENT ACTIONS

- Project Manager clarifies Contractor's questions or problems
- Develop Govt estimate for comparison with Contractor's proposal

- Verify completeness of scope
- Examine and verify the method of execution
- Verify the proper tasks were included and the pricing data are correct
- Authenticate the correctness of the proposal
- Develop Govt estimate for the unit price of non-prepriced items
- Identify variances between Contractor's proposal and Govt estimate
- Review Contractor's drawings for sufficiency and acceptability
- Evaluate proposed performance time

# CONTRACTOR ACTIONS

# GOVERNMENT ACTIONS



- Set up proposal review meeting with Contractor
- Conduct negotiations on variances involving time, money, or quantities
- Prepares a formal record of negotiations

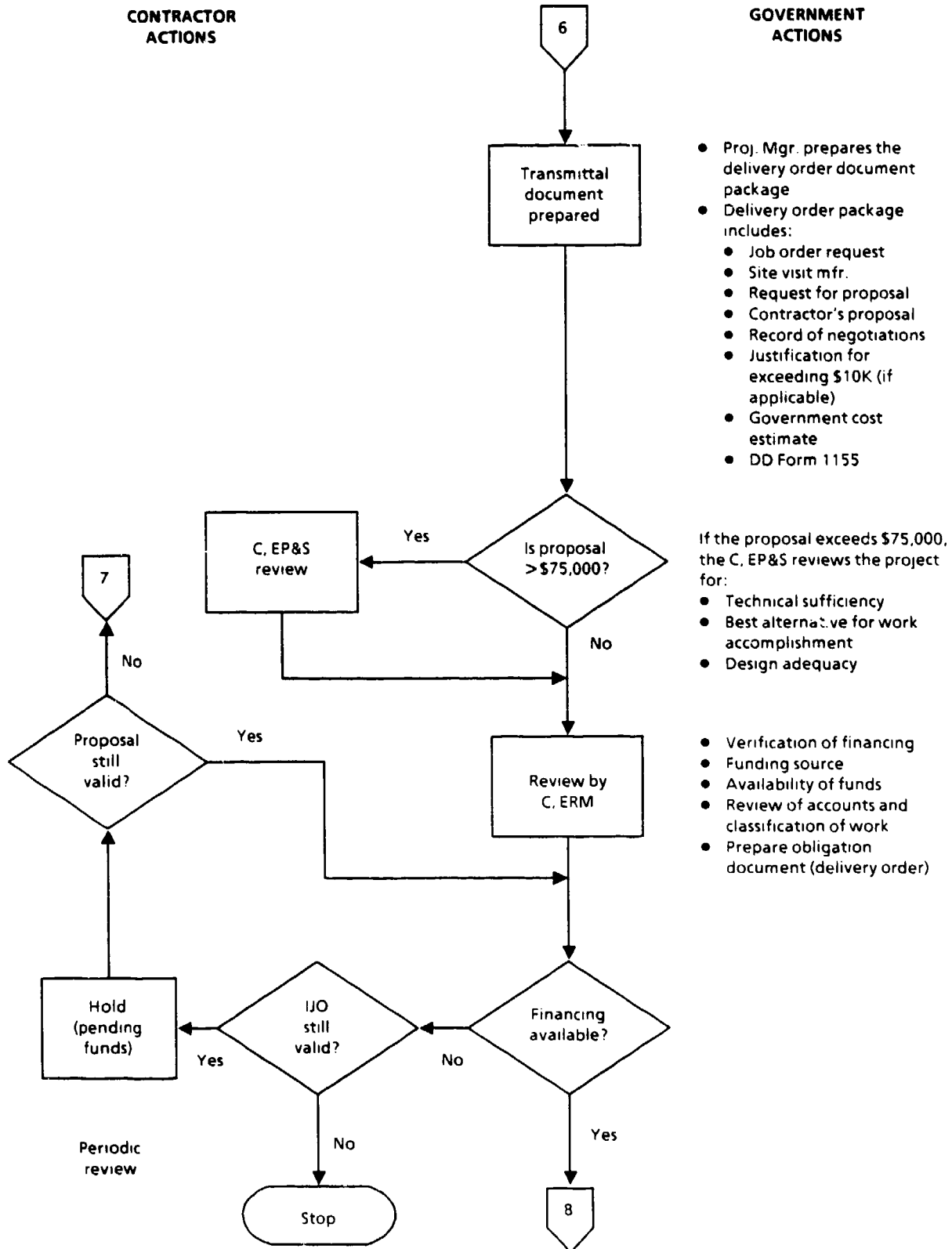
- Br./Div. Chief reviews rejected proposal to establish validity of disagreement
- Br./Div. Chief decides to cancel the JOC proposal and refer IJO to the JORP or to request additional proposal development

- Proj Mgr develops the detailed D&F as to why there is >\$10K in non-prepriced tasks in this IJO and why the JOC should be used and not some other work execution method

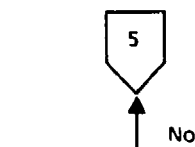


# CONTRACTOR ACTIONS

# GOVERNMENT ACTIONS



## CONTRACTOR ACTIONS



Should project be done by JOC?

No

Yes

Forward approval request document & fund certification to the District P&S for review

District counsel reviews

Yes

DE approves & issues DO?

No

Returns to DEH

5

DEH forwards DO to DEH

9

Proposal review by DEH

Non-prepriced > \$10K?

Yes

No

Contractor proposal accept?

No

7

Yes

DEH issues delivery order

DEH forwards package to District P&S

13

## GOVERNMENT ACTIONS

The DEH, as JOC Ordering Officer, reviews the project for:

- Scope
- Validity
- Cost and funding source
- Amount of non-prepriced work
- Summary of negotiations
- Classification of work
- Contract compliance

District P&S and counsel review to confirm that:

- JOC is proper procurement tool for this work
- Price is reasonable
- Within scope and intent of JOC

- Obligation document (delivery order)
- Fixed prices
- Notice to proceed

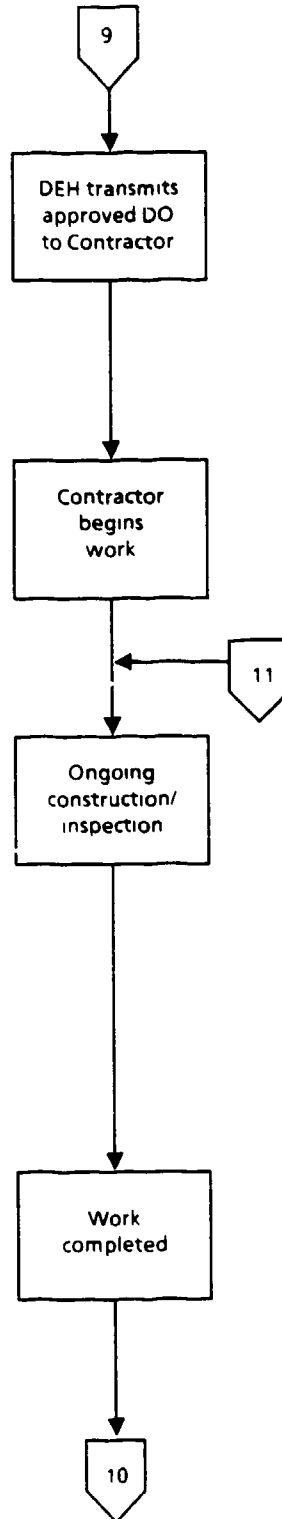
- ERM forwards the district complete DO documentation package

## CONTRACTOR ACTIONS

- Contractor mobilizes his work force
  - Obtains necessary permits and authorizations
  - Final coordination with Proj. Mgr. and Customer
- 
- Contractor provides management of the project
  - Ensures quality control
  - Reports problems/differing conditions to Proj. Manager
  - Submits payroll data to the DEH

## GOVERNMENT ACTIONS

- ERM forwards the official DO to the Contractor with supporting documentation
  - Project folder given to Project Manager
  - Proj. Manager confirms insurance certification for prime and all subs
- 
- Project Mgr. inspects work and monitors Contractor's progress
  - Proj. Mgr. coordinates among Contractor, Customer, and others as required
  - Project inspections/status reports – local decision
  - On-site decisions regarding quality and unforeseen conditions
  - Certifies partial payment requests – if required
  - District retains administrative control of contract; DEH coordinates problems/disputes with District



## CONTRACTOR ACTIONS

- Contractor corrects deficiencies

- Contractor provides as-built drawings (if required)

- On a monthly basis, Contractor submits his invoice for payment to the DEH and final release certification

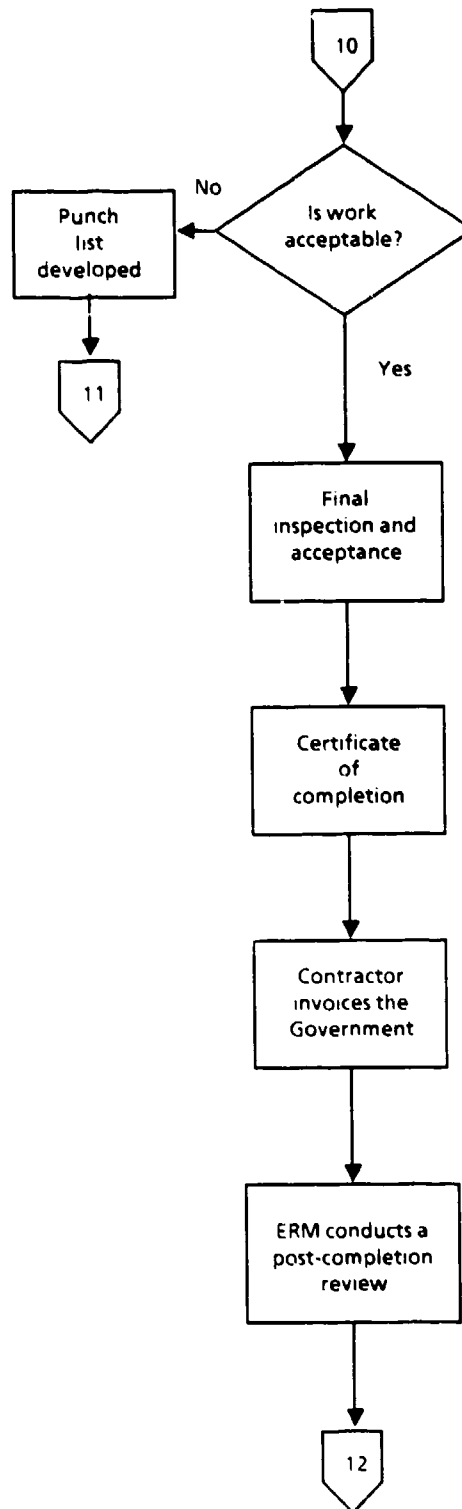
## GOVERNMENT ACTIONS

- Project Manager inspects final work and, if necessary, develops a "punch" list for defective work
- Punch list is provided to the Contractor

- COR conducts final inspection with Contractor and Customer

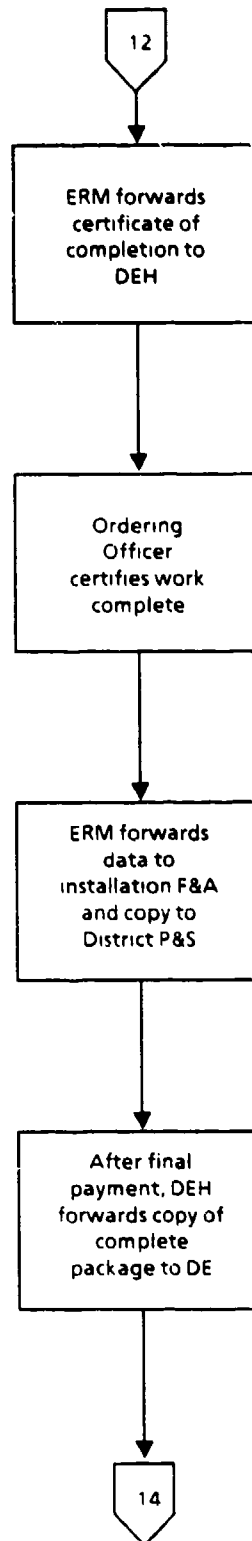
- Project Mgr. prepares the certificate of completion
- Proj. Mgr. closes out JOC project file and forwards package to ERM

- ERM conducts a post-completion review of the project for verification of work completed, work classification, and sufficiency of documentation



**CONTRACTOR  
ACTIONS**

**GOVERNMENT  
ACTIONS**



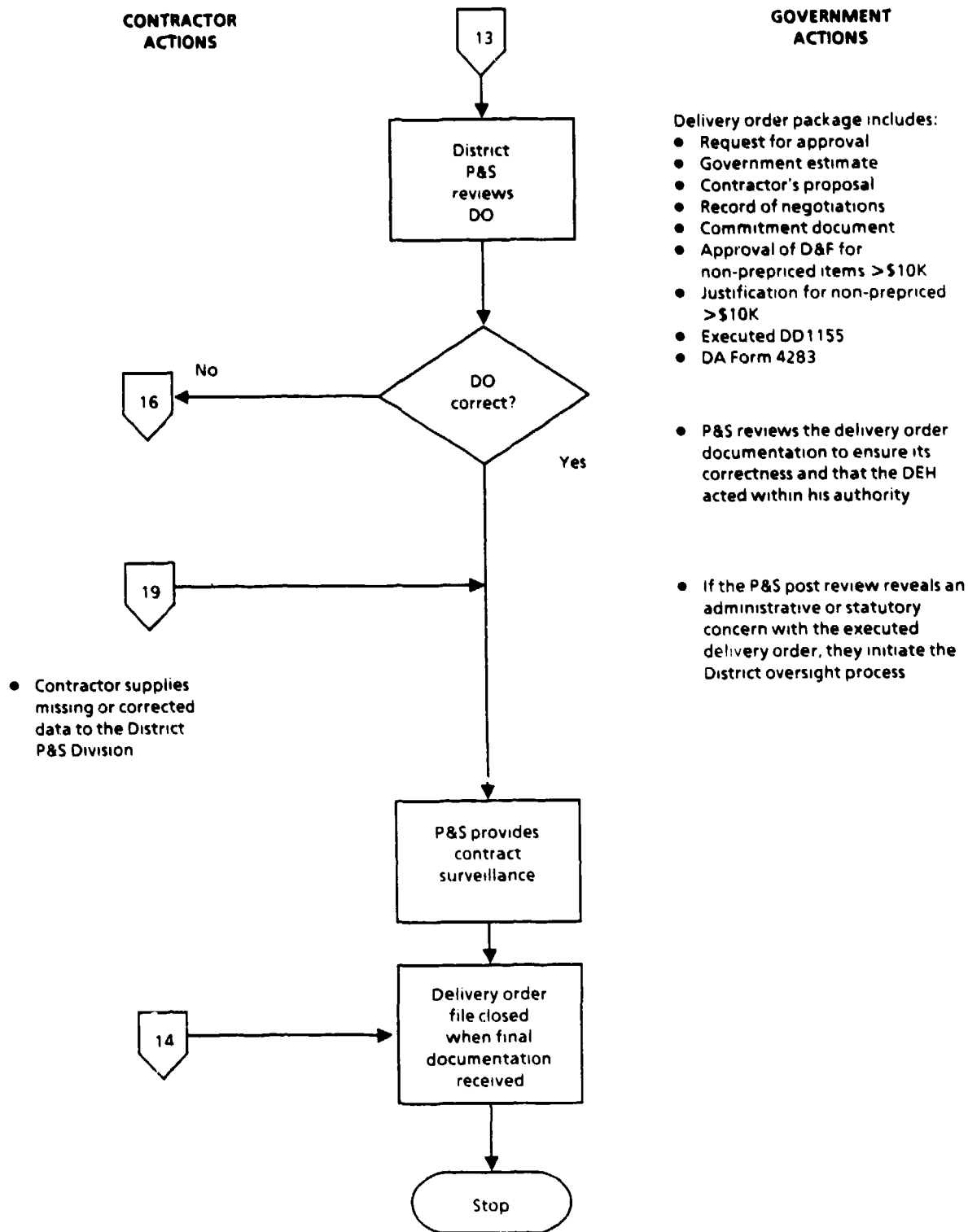
- Ordering Officer signs the certificate that the work has been accomplished to the Government's specifications

ERM forwards to the installation F&A:

- Certificate of completion
- Contractor's invoice
- Release statement

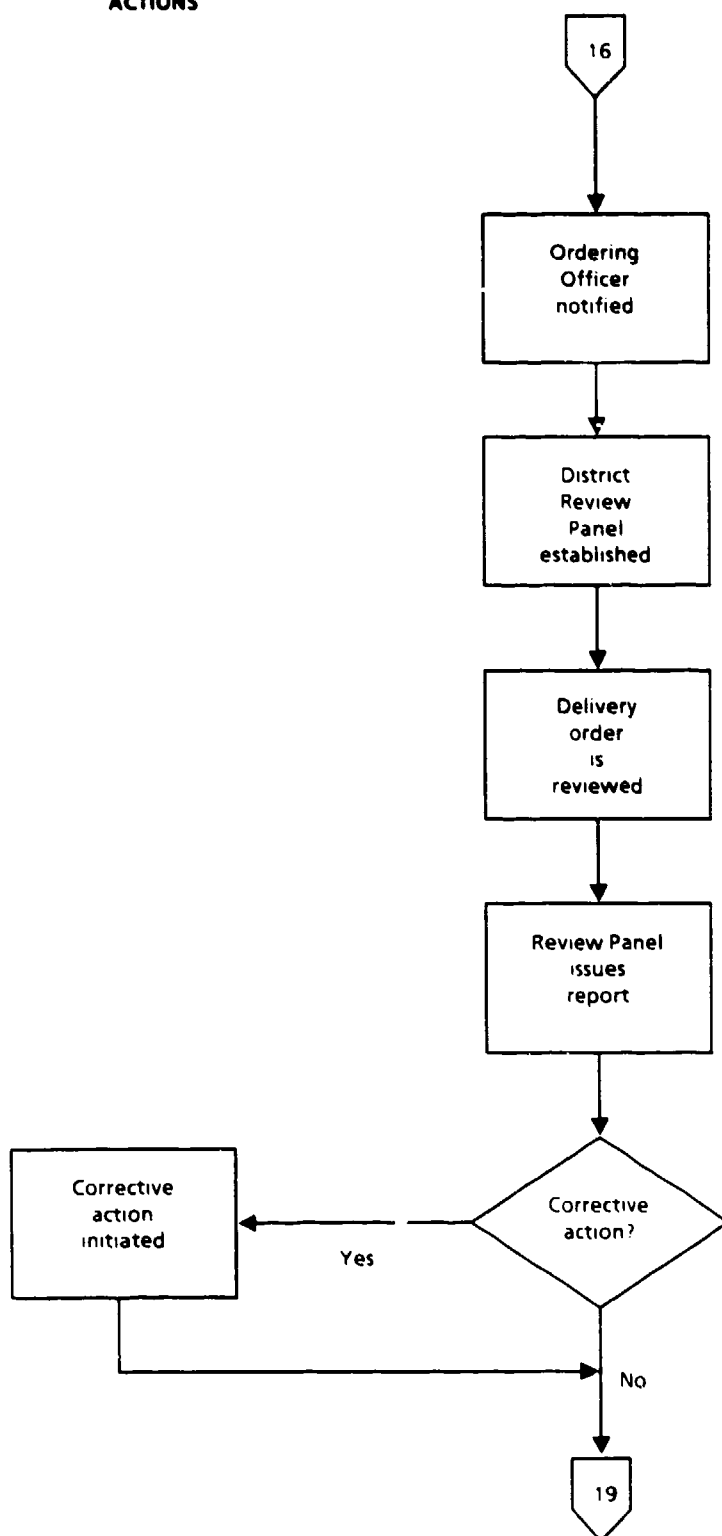
# CONTRACTOR ACTIONS

# GOVERNMENT ACTIONS



**CONTRACTOR  
ACTIONS**

**GOVERNMENT  
ACTIONS**



If there appears to be a concern, the KO establishes a Review Panel including:

- P&S
- Counsel
- Engineering Div

- The review evaluates the delivery order documentation, and if necessary, the DEH and Contractor actions

- The Review Panel issues its findings to the KO and if an irregularity was identified, the Panel recommends corrective action

## **APPENDIX B**

### **SUMMARIZED QUESTIONNAIRE DATA**



## **APPENDIX B**

### **SUMMARIZED QUESTIONNAIRE DATA**

Appendix B contains the summarized responses to the questionnaires. The data from the questionnaires was used to develop many of the figures in Chapter 2. Statistical data as well as response summaries are provided.

# **USACE QUESTIONNAIRE FOR THE JOB ORDER CONTRACT TEST**

**PURPOSE:** To obtain the perceptions of USACE staff on the Job Order Contract.

1. What impact has the JOC had on the amount of installation support work done by your district for the JOC installation? (Circle one) N = 10; MN = 3; SD = 1.33

(5)	(4)	(3)	(2)	(1)
Great	Slight	No	Slight	Great
decrease	decrease	change	increase	increase
20%	30%	10%	30%	10%

2. Has the use of JOC enabled your installation support staff to improve its performance on other installation support work for the JOC installation? (Circle one) N = 10; MN = 2; SD = 0.98

(3)	(2)	(1)
Yes	No	No
60%	0%	change
		40%

3. What impact has the JOC had on A/E contracting activities for the JOC installation? (Circle one) N = 9; MN = 4; SD = 0.50

(5)	(4)	(3)	(2)	(1)
Great	Slight	No	Slight	Great
decrease	decrease	impact	increase	increase
in volume	in volume	44%	in volume	in volume
0%	56%		0%	0%

4. What is your perception of the quality of construction work provided by the Job Order Contractor? (Circle one) N = 8; MN = 3; SD = 0.43

(3)	(2)	(1)
High	Average	Low
quality	quality	quality
75%	25%	0%

5. In your opinion, how does the quality of work accomplished via JOC compare with that provided via traditional construction contracts? (Circle one)  
N = 8; MN = 4; SD = 0.71

(5)	(4)	(3)	(2)	(1)
Much	Better	No	Worse	Much
better	63%	change	12%	worse
0%		25%		0%

6. Regarding the special contract administration authorities provided to the DEH under the JOC Test:

- a. What is your opinion regarding the extent of contractual authorities delegated to the DEH? (Circle one) N = 10; MN = 2; SD = 0.54

(3)	(2)	(1)
Inadequate	Right	Excessive
10%	amount	20%
	70%	

- b. The source of these contractual authorities is the supporting Corps of Engineers District. What is your opinion of this special contractual arrangement? (Circle one) N = 11; MN = 3; SD = 1.00

(5)	(4)	(3)	(2)	(1)
Highly	Favorable	No	Unfavorable	Highly
favorable	54%	opinion	0%	unfavorable
0%		0%		46%

- c. What is your opinion of the installation DEH's capability to properly execute these authorities? (Circle one) N = 11; MN = 3; SD = 0.29

(4)	(3)	(2)	(1)
Highly	Capable	Marginally	No
capable	91%	capable	opinion
0%		9%	0%

7. What is your overall opinion of the Job Order Contract? (Circle one)  
N = 11; MN = 4; SD = 0.39

(4)	(4)	(3)	(2)	(1)
Highly	Favorable	No	Unfavorable	Highly
favorable	82%	opinion	0%	unfavorable
18%		0%		0%

8. In your opinion, does the JOC enable you to better execute the District's installation support mission? N = 11; MN = 3; SD = 0.77

(3)	(2)	(1)
Yes	No	No
82%	0%	change
		18%

9. For this type of contract would you prefer: (Select one and please explain)  
N = 11; MN = 2; SD = 0.29

(2)	(1)
Negotiated	(Request for Proposal)
Procedures?	Sealed Bid Procedures?
91%	9%

10. Please assess the contractual relationship between the Government and the contractor under the Job Order Contract.  
N = 11; MN = 2; SD = 0.29

(2)	(1)
Partnership	Adversarial
91%	9%

11. In your opinion, does the Job Order Contract provide an appropriate distribution of risk between the contractor and the Government?  
N = 11; MN = 2; SD = 0.83

(3)	(2)	(1)
Yes	No	Unsure
46%	(Explain)	27%
	27%	

14. Please assess the adequacy of the Job Order Contract documents.

- a. Is the JOC Unit Price Book comprehensive? N = 11; MN = 2; SD = 0.86

(3)	(2)	(1)
Yes	No	No
55%	18%	opinion
		27%

- b. Do the prices in the JOC Unit Price Book generally reflect fair market prices? (Circle one) N=10; MN=4; SD=0.00

(5)	(4)	(3)	(2)	(1)
Always	Most of	About	Very	Almost
0%	the time	half	few	none
	100%	0%	0%	0%

- c. Are the JOC technical specifications comprehensive? N=10; MN=2; SD=0.89

(3)	(2)	(1)
Yes	No	No
40%	20%	opinion
		40%

- d. Are the JOC specifications technically sufficient? (Circle one) N=8; MN=4; SD=0.66

(5)	(4)	(3)	(2)	(1)
Always	Most of	About	Very	Almost
0%	the time	half	few	none
	88%	0%	12%	0%

- e. Are the JOC general and special clauses adequate? N=11; MN=3; SD=0.57

(3)	(2)	(1)
Adequate	Inadequate	No
91%	(Explain)	opinion
	0%	9%

- f. Do you find any particular clause difficult to enforce? Is yes, which one? N=11; MN=1; SD=0.42

(2)	(1)
Yes	No
22%	78%

- g. Are the policies and procedures set forth for execution of this contract both efficient and effective? (Circle one) N=9; MN=4; SD=0.47

(5)	(4)	(3)	(2)	(1)
Always	Most of	Normally	Some of	Almost
11%	the time	11%	the time	never
	78%		0%	0%

15. From your perspective, what is your overall impression of the Job Order Contract?  $M=10$ ;  $MN=4$ ;  $SD=0.46$

(5)	(4)	(3)	(2)	(1)
Highly favorable	Favorable	No opinion	Unfavorable	Highly unfavorable
30%	70%	0%	0%	0%

# **SUPPORTED COMMANDER/SENIOR EXECUTIVE QUESTIONNAIRE FOR THE JOB ORDER CONTRACT TEST**

**PURPOSE:** To obtain the perceptions of supported commanders and senior executives on the Job Order Contract.

1. Are you aware that the DEH is using a Job Order Contract to help execute the engineer mission at your installation? N = 19; MN = 2; SD = 0.22

Yes (2)  
95%

No (1)  
5%

2. Has the DEH used the JOC to execute any specific requirements requested by you? N = 19; MN = 2; SD = 0.41

Yes (2)  
79%

No (1)  
21%

**If the Job Order Contract was used to accomplish your work request or you are familiar with work accomplished by the JOC, then please complete the following questions.**

3. The JOC has had the following effect on the DEH's ability to respond to requests for construction work. (Circle one) N = 17; MN = 4; SD = 1.04

Much Faster (5)	Faster (4)	No Change (3)	Slower (2)	Much Slower (1)
47%	35%	12%	0%	6%

4. What is your perception of the quality of construction work provided by the Job Order Contractor? (Circle one) N = 15; MN = 3; SD = 0.47

High Quality (3)	Average Quality (2)	Low Quality (1)
67%	33%	0%

5. In your opinion, how does the quality of work accomplished via JOC compare with individual construction contracts at your installation? (Circle one) N = 15; MN = 4; SD = 0.71

Much Better (5)	Better (4)	No Change (3)	Worse (2)	Much Worse (1)
13%	33%	53%	0%	0%

6. Have you perceived any changes in the DEH's capacity to do construction-related work? (Circle one) N = 16; MN = 4; SD = 0.67

Greatly Increased	Slightly Increased	No Change	Slightly Reduced	Greatly Reduced
(5)	(4)	(3)	(2)	(1)
16%	53%	32%	0%	0%

7. Based on your experience with the JCC, to date, would you desire to retain this capability at your installation? (Circle one) N = 19; MN = 3; SD = 0.92

Must Have	Nice to Have	Not Needed	No Opinion
(4)	(3)	(2)	(1)
53%	37%	0%	11%

8. As a commander or senior executive, what is your overall opinion of the Job Order Contract? (Circle one) N = 19; MN = 4; SD = 0.77

Highly Favorable	Favorable	No Opinion	Unfavorable	Highly Unfavorable
(5)	(4)	(3)	(2)	(1)
37%	53%	5%	5%	0%



# **INSTALLATION PURCHASING & CONTRACTING OFFICER'S QUESTIONNAIRE FOR THE JOB ORDER CONTRACT TEST**

**PURPOSE:** To obtain the perceptions of Installation Directorate of Contracting staff on the Job Order Contract.

1. Are you aware that the DEH is using a Job Order Contract to help execute the engineer mission at your installation? N = 6; MN = 2; SD = 0.00

Yes (2)	No (1)
100%	0%

2. In your opinion, has the JOC affected your contractual workload? (Circle one)  
N = 6; MN = 2; SD = 0.58

Greatly increased	Slightly increased	No effect	Slightly decreased	Greatly decreased
(5)	(4)	(3)	(2)	(1)
0%	0%	17%	67%	17%

3. Please consider the following questions on what impact the Job Order Contract has had on your activity.

- a. Responsiveness to DEH requirements: (Circle one) N = 6; MN = 3;  
SD = 0.69

Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased
(5)	(4)	(3)	(2)	(1)
0%	33%	50%	17%	0%

- b. Quality of contracting support for DEH requirements: (Circle one) N = 6;  
MN = 3; SD = 0.47

Greatly improved	Slightly improved	No change	Slightly reduced	Greatly reduced
(5)	(4)	(3)	(2)	(1)
0%	33%	67%	0%	0%

- c. Reduction of the backlog of DEH contracting requirements: (Circle one)  
N = 6; MN = 4; SD = 0.90

Greatly reduced	Slightly improved	No change	Slightly increased	Greatly increased	No initial backlog
(6)	(5)	(4)	(3)	(2)	(1)
0%	33%	17%	50%	0%	0%

4. Regarding an area of command interest, do you believe that the JOC has affected the Commercial Activities Program for your installation? (Circle one)  
N=3; MN=3; SD=0.47

Great positive effect	Some positive effect	No effect	Some negative effect	Great negative effect
(5)	(4)	(3)	(2)	(1)
0%	0%	67%	33%	0%

5. Regarding the special contract administration authorities provided to the DEH under the JOC test:

- a. What is your opinion regarding the extent of contractual authorities delegated to the DEH? (Circle one) N=6; MN=1; SD=0.47

Inadequate	Right amount	Excessive
(3)	(2)	(1)
0%	33%	67%

- b. The source of the contractual authorities is the supporting Corps of Engineers District. What is your opinion of this special contractual arrangement? (Circle one) N=6; MN=2; SD=0.75

Highly favorable	Favorable	No opinion	Unfavorable	Highly unfavorable
(5)	(4)	(3)	(2)	(1)
0%	0%	50%	33%	17%

- c. What is your opinion of the DEH's capability to properly execute these authorities? (Circle one) N=5; MN=2; SD=0.49

Highly Capable	Capable	Marginally Capable	No Opinion
(4)	(3)	(2)	(1)
0%	40%	60%	0%

6. Based on your experience to date, would you want the JOC capability retained at your installation? (Circle one) N=5; MN=3; SD=0.00

Must have	Nice to have	Not needed	No Opinion
(4)	(3)	(2)	(1)
0%	100%	0%	0%

7. As an installation Contracting Officer, what is your overall opinion of the Job Order Contract? (Circle one) N = 5; MN = 4; SD = 0.00

Highly favorable	Favorable	No Opinion	Unfavorable	Highly Unfavorable
(5)	(4)	(3)	(2)	(1)
0%	100%	0%	0%	0%

# **RESOURCE MANAGER QUESTIONNAIRE FOR THE JOB ORDER CONTRACT TEST**

**PURPOSE:** To obtain the perceptions of installation resource managers on the Job Order Contract.

1. Are you aware that the DEH is using a Job Order Contract to help execute the engineer mission at your installation? N = 17; MN = 2; SD = 0.32

Yes (2)	No (1)
88%	12%

2. Has the DEH used the JOC to execute any specific requirements requested by you or your immediate staff? N = 17; MN = 2; SD = 0.76

Yes (3)	No (2)	Unaware (1)
24%	41%	35%

3. Have you perceived any changes in DEH's capacity to do construction-related work? (Circle one) N = 17; MN = 4; SD = 0.73

(5)	(4)	(3)	(2)	(1)
Greatly increased	Slightly increased	No change	Slightly reduced	Greatly reduced
18%	41%	41%	0%	0%

4. Regarding the utilization of funds, do you believe that the JOC has allowed the DEH to improve his management and use of funds? (Circle one) N = 13; MN = 4; SD = 0.86

(5)	(4)	(3)	(2)	(1)
Much better	Slightly better	No change	Slightly worse	Much worse
46%	23%	31%	0%	0%

5. Regarding an area of command interest, do you believe that the JOC has affected the Commercial Activities Program for your installation? (Circle one)  
N = 12; MN = 3; SD = 0.72

(5)	(4)	(3)	(2)	(1)
Great	Some	No	Some	Great
positive	positive	effect	negative	negative
effect	effect	67%	effect	effect
8%	17%		8%	0%

6. Based on your experience to date with the JOC, would you want this capability retained at your installation? (Circle one) N = 16; MN = 3; SD = 1.34

(4)	(3)	(2)	(1)
Must	Nice to	Not	No
have	have	needed	opinion
56%	13%	0%	31%

7. As a resource manager, what is your overall opinion of this Job Order Contract? (Circle one) N = 16; MN = 4; SD = 0.70

(5)	(4)	(3)	(2)	(1)
Highly	Favorable	No	Unfavorable	Highly
favorable.	50%	opinion	0%	unfavorable
19%		31%		0%

# **INSTALLATION COMMANDER'S QUESTIONNAIRE FOR THE JOB ORDER CONTRACT TEST**

**PURPOSE:** To obtain the perceptions of the DEH staff on the Job Order Contract.

2. Has the DEH used the JOC to execute any specific requirements requested by you? N=4; MN=2; SD=0.00

Yes (2)	No (1)
100%	0%

3. The JOC has had the following effect on the DEH's ability to respond to requests for construction work. (Circle one) N=3; MN=5; SD=0.47

Much Faster (5)	Faster (4)	No Change (3)	Slower (2)	Much Slower (1)
67%	33%	0%	0%	0%

4. What is your perception of the quality of construction work provided by the Job Order Contractor? (Circle one) N=3; MN=3; SD=0.00

High Quality (3)	Average Quality (2)	Low Quality (1)
100%	0%	0%

5. In your opinion, how does the quality of work accomplished via JOC compare with individual construction contracts at your installation? (Circle one) N=2; MN=4; SD=1.00

Much Better (5)	Better (4)	No Change (3)	Worse (2)	Much Worse (1)
50%	0%	50%	0%	0%

6. Have you perceived any changes in the DEH's capacity to do construction-related work? (Circle one) N=2; MN=5; SD=0.50

Greatly Increased	Slightly Increased	No Change	Slightly Reduced	Greatly Reduced
(5)	(4)	(3)	(2)	(1)
50%	50%	0%	0%	0%

7. Regarding the utilization of funds, do you believe that the JOC has allowed the DEH to improve his management and use of funds? (Circle one) N=3; MN=5; SD=0.00

Much Better	Better	No Change	Worse	Much Worse
(5)	(4)	(3)	(2)	(1)
100%	0%	0%	0%	0%

8. Regarding an area of command interest, do you believe that the JOC has affected the Commercial Activities Program for your installation? (Circle one)  
N=2; MN=3; SD=0.00

Great Positive Effect	Some Positive Effect	No Effect	Some Negative Effect	Great Negative Effect
(5)	(4)	(3)	(2)	(1)
0%	0%	100%	0%	0%

9. Regarding the special contract administration authorities provided to your DEH under the JOC test:

- a. What is your opinion regarding the extent of contractual authorities delegated to the DEH? (Circle one) N=4; MN=2; SD=0.00

Inadequate (3)	Right Amount (2)	Excessive (1)
0%	100%	0%

- b. The source of the contractual authorities is your supporting Corps of Engineers District. What is your opinion of this special contractual arrangement? (Circle one) N=4; MN=4; SD=0.83

Highly Favorable	Favorable	No Opinion	Unfavorable	Highly Unfavorable
(5)	(4)	(3)	(2)	(1)
25%	25%	50%	0%	0%

- c. What is your opinion of your DEH's capability to properly execute these authorities? (Circle one) N=3; MN=3; SD=0.82

Highly Capable	Capable	Marginally Capable	No Opinion
(4)	(3)	(2)	(1)
33%	33%	33%	0%

10. Based on your experience with the JOC to date, would you desire to retain this capability at your installation? (Circle one) N=3; MN=4; SD=0.00

Must Have	Nice to Have	Not Needed	No Opinion
(4)	(3)	(2)	(1)
100%	0%	0%	0%

11. As an installation commander, what is your overall opinion of the Job Order Contract? (Circle one) N=3; MN=5; SD=0.00

Highly Favorable	Favorable	No Opinion	Unfavorable	Highly Unfavorable
(5)	(4)	(3)	(2)	(1)
100%	0%	0%	0%	0%

# **DEH QUESTIONNAIRE FOR THE JOB ORDER CONTRACT TEST**

**PURPOSE:** To obtain the perceptions of the DEH staff on the Job Order Contract.

1. The JOC has had the following effect on the DEH's ability to respond to requests for construction work. (Circle one) N = 27; MN = 4; SD = 0.60

(5)	(4)	(3)	(2)	(1)
Much	Faster	No	Slower	Much
faster	56%	change	0%	slower
37%		7%		0%

2. What is your perception of the quality of construction work provided by the Job Order Contractor? (Circle one) N = 27; MN = 3; SD = 0.53

(3)	(2)	(1)
High	Average	Low
quality	quality	quality
74%	22%	4%

3. In your opinion, how does the quality of work accomplished via JOC compare with traditional construction contracts at your installation? (Circle one) N = 27; MN = 4; SD = 0.72

(5)	(4)	(3)	(2)	(1)
Much	Better	No	Worse	Much
better	48%	change	4%	worse
11%		37%		0%

4. Have you perceived any changes in the DEH's capacity to do construction-related work? (Circle one) N = 25; MN = 4; SD = 0.81

(5)	(4)	(3)	(2)	(1)
Greatly	Slightly	No	Slightly	Greatly
increased	increased	change	reduced	reduced
48%	28%	24%	0%	0%



5. Regarding the utilization of funds, do you believe that the JOC has allowed the DEH to improve the management and use of funds? (Circle one)  
N = 26; MN = 4; SD = 0.90

(5)	(4)	(3)	(2)	(1)
Much	Better	No	Worse	Much
better	58%	change	15%	worse
15%		12%		0%

6. Regarding an area of command interest, do you believe that the JOC has affected the Commercial Activities Program for your installation? (Circle one)  
N = 21; MN = 3; SD = 0.64

(5)	(4)	(3)	(2)	(1)
Great	Some	No	Some	Great
positive	positive	effect	negative	negative
effect	effect	62%	effect	effect
5%	28%		5%	0%

7. Please assess the special contract administration authorities provided to DEH personnel under the JOC Test.

- a. What is your opinion regarding the extent of contractual authorities delegated to DEH personnel? (Circle one) N = 25; MN = 2; SD = 0.51

(3)	(2)	(1)
Inadequate	Right	Excessive
28%	amount	4%
	68%	

- b. The source of the contractual authorities is the supporting Corps of Engineers District. What is your opinion of this special contractual arrangement? (Circle one) N = 27; MN = 4; SD = 0.98

(5)	(4)	(3)	(2)	(1)
Highly	Favorable	No	Unfavorable	Highly
favorable	33%	opinion	0%	unfavorable
41%		22%		4%

- c. What is your opinion of the capability of DEH staff to properly execute these authorities? (Circle one) N = 26; MN = 3; SD = 0.88

(4)	(3)	(2)	(1)
Highly	Capable	Marginally	No
capable	42%	capable	opinion
42%		8%	8%

8. In your opinion, how do you assess the adequacy of the prework formalities:

- a. Pework Conferences? (Circle one) N = 20; MN = 3; SD = 0.48

(4)	(3)	(2)	(1)
Very	Helpful	Somewhat	Unhelpful
helpful	65%	helpful	0%
35%		0%	

- b. Government support/assistance to the contractor during mobilization? (Circle one) N = 16; MN = 3; SD = 0.50

(4)	(3)	(2)	(1)
Very	Helpful	Somewhat	Unhelpful
helpful	75%	helpful	0%
12%		12%	

9. Please assess the execution procedures for the Job Order Contract.

- a. Do the joint (contractor and Government) on-site project scoping meetings assist in clarifying the Government's requirements? N = 21; MN = 2; SD = 0.21

Yes (2)	No (1)
95%	5%

- b. Do the Government representatives solicit the contractor's views on how to best satisfy a particular requirement? (Circle one) N = 23; MN = 3; SD = 0.58

(4)	(3) Most of	(2)	(1)
All of	the time	Occasionally	Almost
the time	65%	13%	never
22%			0%

- c. Do your follow-on written scopes of work reflect the decisions/discussions arrived at during the scoping meeting? (Circle one) N=18; MN=3; SD=0.58

(4)	(3)	(2)	(1)
Always	For most	Occasionally	Almost
39%	projects	5%	never
	56%		0%

- d. Are the written scopes of work clear, accurate, and in sufficient detail as to allow you to prepare a government estimate? (Circle one) N=17; MN=3; SD=0.47

(4)	(3)	(2)	(1)
Always	For most	Occasionally	Almost
18%	projects	6%	never
	76%		0%

- f. What is your assessment of the communication process between the contractor and yourself during the scoping and proposal development stage? (Circle one) N=13; MN=4; SD=0.63

(4)	(3)	(2)	(1)
Essential	Very	Somewhat	Not
62%	helpful	helpful	helpful
	30%	8%	0%

- g. Does the JOC ADP system assist you in the evaluation of the contractor's proposals? (Circle one) N=13; MN=3; SD=0.61

(4)	(3)	(2)	(1)
Essential	Very	Somewhat	Not
8%	helpful	helpful	helpful
	54%	38%	0%

- h. Is the identification and pricing of nonprepriced items a problem? (Circle one) N = 17; MN = 2; SD = 0.92

(4)	(3)	(2)	(1)
Not a problem	Minor problem	Frequent problem	Major problem
18%	24%	47%	11%

- i. Did the contractor, during the execution of a particular delivery order, encounter a differing site condition? (Circle one) N = 21; MN = 3; SD = 0.65

(5)	(4)	(3)	(2)	(1)
Every delivery order	Most delivery orders	Occasionally 71%	Very infrequently 19%	Almost never 0%
5%	5%			

- j. When a differing site condition was encountered, were you and the contractor able to make a timely determination and, if necessary, an equitable adjustment to the delivery order? (Circle one) N = 17; MN = 3; SD = 0.64

(4)	(3)	(2)	(1)
Always 35%	Most of the time 53%	Occasionally 12%	Almost never 0%

- k. Do the negotiations involving project duration create difficulties? (Circle one) N = 17; MN = 2; SD = 0.57

(4)	(3)	(2)	(1)
Always 0%	Most of the time 6%	Occasionally 59%	Almost never 35%

1. Are payment requests promptly processed and paid? (Circle one) N = 15; MN = 4; SD = 0.47

(4)	(3)	(2)	(1)
Always	Most of the time	Occasionally	Almost never
67%	33%	0%	0%

10. Please characterize your contractual relationship with the contractor under the Job Order Contract. N = 19; MN = 3; SD = 0.82

Partnership (3)	Adversarial (2)	Other (1)
79%	21%	0%

11. Does the Job Order Contract provide an appropriate distribution of risk between the contractor and the Government? N = 18; MN = 2; SD = 0.00

Yes (2)	No (1)
100%	0%

12. In general, how would you characterize relations/reaction of subcontractors doing work under this contract? N = 21; MN = 4; SD = 0.73

(5)	(4) Positive	(3)	(2)	(1)
Very positive	57%	No opinion	Negative	Very negative
14%		24%	5%	0%

15. Please assess the adequacy of the Job Order Contract documents.

- a. Is the JOC Unit Price Book comprehensive? N = 20; MN = 2; SD = 0.74

Yes (3)	No (2)	No opinion (1)
25%	45%	30%

- b. Do the prices in the JOC Unit Price Book generally reflect fair market prices? N = 18; MN = 3; SD = 0.80

(5)	(4)	(3)	(2)	(1)
Always	Most of the time	About half	Very few	Almost none
0%	50%	28%	22%	0%

- c. Are the JOC technical specifications comprehensive? (Circle one) N = 20;  
MN = 2; SD = 0.94

Yes (3)  
60%

No (2)  
5%

No opinion (1)  
35%

- d. Are the JOC specifications technically sufficient? (Circle one) N = 18;  
MN = 4; SD = 0.40

(5)  
All  
11%

(4)  
Most  
83%

(3)  
About  
half  
6%

(2)  
Very  
few  
0%

(1)  
Almost  
none  
(Explain)  
0%

- e. Are the JOC general and special clauses adequate? (Circle one) N = 18;  
MN = 2; SD = 0.94

Adequate (3)  
67%

Inadequate (2)  
33%

No opinion (1)  
0%

- f. Is any particular clause difficult to comply with? If so, which one(s)?  
N = 11; MN = 1; SD = 0.29

Yes (2)  
9%

No (1)  
91%

- g. Are the policies and procedures for execution of this contract both efficient  
and effective? (Circle one) N = 18; MN = 4; SD = 0.80

(5)  
Always  
6%

(4)  
Most of  
the time  
72%

(3)  
Normally  
17%

(2)  
Some of  
the time  
0%

(1)  
Almost  
never  
5%

- h. Are the level and type of ADP support sufficient for efficient execution of this contract? N = 18; MN = 2; SD = 0.78

Yes (3)	No (2)	No opinion (1)
33%	39%	28%

- i. Was the amount and level of training sufficient for efficient execution of this contract? N = 20; MN = 2; SD = 0.81

Yes (3)	No (2)	No opinion (1)
45%	30%	25%

16. Based on your experience to date with the JOC, do you want to retain this capability at your installation? (Circle one) N = 26; MN = 4; SD = 0.54

(4)	(3)	(2)	(1)
Must	Nice to	Not	No
have	have	needed	opinion
73%	23%	4%	0%

17. As an installation DEH, what is your overall opinion of the Job Order Contract? (Circle one) N = 26; MN = 4; SD = 0.96

(5)	(4)	(3)	(2)	(1)
Highly	Favorable	No	Unfavorable	Highly
favorable	38%	opinion	4%	unfavorable
54%		0%		4%

**APPENDIX C**

**INSTALLATION DATA**



## **APPENDIX C**

### **INSTALLATION DATA**

Appendix C contains cost and execution data on JOC and non-JOC RPMA work. This data is used to develop the procurement cost responsiveness tables in Chapter 2. The data from each installation is presented as well as the statistical analyses.

**TABLE C-1**

**NON-JOC ENGINEERING/PROCUREMENT PROCESSING TIME**

<b>Contract size and location</b>	<b>Amount (\$000)</b>	<b>Elapsed time - days</b>
<b>Small &lt; \$25,000</b>		
Ord	\$ 0.5	184
Ord	1.3	25
Ord	1.6	72
APG	3.7	725
APG	4.5	593
Monroe	5.5	
Ord	5.7	102
APG	5.9	118
APG	8.7	41
Ord	10.9	136
Ord	11.1	81
APG	11.8	689
Ord	12.0	158
Bragg	12.5	355
APG	12.7	889
Ord	15.4	65
Monroe	16.3	350
Ord	18.0	122
Monroe	18.1	270
Sill	18.9	174
Ord	21.2	196
Ord	21.9	100
Sill	21.9	105
APG	23.1	449
Sill	23.3	68
Ord	23.9	144
Ord	24.6	148
Ord	24.8	64
Sill	24.8	107
<b>Sum</b>	<b>\$404.6</b>	<b>6,530.0</b>
<b>Mean</b>	<b>\$ 14.0</b>	<b>233.2</b>
<b>STD deviation</b>	<b>7.9</b>	<b>226.0</b>
<b>N</b>	<b>29</b>	
<b>Average Engineering/Procurement processing time</b>		<b>233</b>

TABLE C-1

## NON-JOC ENGINEERING/PROCUREMENT PROCESSING TIME (Continued)

Contract size and location	Amount (\$000)	Elapsed time - days
<b>Medium &gt; \$25,000 &lt; \$200,000</b>		
Ord	\$ 28.1	29
Sill	30.9	136
Sill	33.6	215
Ord	35.0	68
Ord	39.2	25
Ord	40.2	161
Sill	41.3	72
Ord	43.5	119
Ord	44.5	102
Ord	44.6	190
Ord	46.7	214
Ord	47.0	66
Monroe	47.5	300
APG	47.6	519
Sill	52.9	149
Ord	54.4	186
APG	54.5	71
APG	56.3	735
Sill	58.5	208
Ord	65.2	163
Ord	68.2	69
Ord	70.6	41
Sill	74.1	153
APG	77.2	583
Sill	89.3	42
Ord	92.4	125
APG	94.0	103
Monroe	110.3	300
Monroe	111.8	330
APG	131.3	746
Monroe	142.2	390
Sill	142.4	135
Sill	151.3	133
Ord	153.0	48
Sill	156.5	58
Ord	162.7	69
Ord	166.2	102
Sill	171.0	225
Ord	173.0	56
Ord	175.1	165
Ord	183.8	83
Ord	189.9	105
Sill	190.0	154
Ord	193.3	305
Bragg	197.0	440
Sum	\$4,378.1	8,688.0
Mean	\$ 97.3	193.1
STD deviation	56.4	172.4
N	45	
Average Engineering/Procurement processing time		193

TABLE C-1

## NON-JOC ENGINEERING/PROCUREMENT PROCESSING TIME (Continued)

Contract size and location	Amount (\$000)	Elapsed time - days
<b>Large &gt; \$200,000</b>		
APG	\$ 222.5	224
Bragg	234.5	298
Sill	247.9	145
APG	249.9	485
APG	276.8	316
Bragg	305.6	241
Monroe	311.0	288
Sill	313.3	63
APG	428.6	172
Sill	480.3	221
APG	483.8	462
APG	499.5	711
Sill	867.7	0
<b>Sum</b>	<b>\$4,921.4</b>	<b>3,626.0</b>
<b>Mean</b>	<b>\$ 378.6</b>	<b>278.9</b>
<b>STD deviation</b>	<b>171.2</b>	<b>181.0</b>
<b>N</b>	<b>13</b>	
<b>Average Engineering/Procurement processing time</b>		<b>279</b>

TABLE C-2

## JOC DELIVERY ORDER PROCESSING TIME

Contract size and location	Amount (\$000)	Elapsed time-days
<b>Small &lt; \$25,000</b>		
Monroe	\$0.4	66
Monroe	0.5	54
Bragg	0.5	41
Bragg	0.5	64
Bragg	0.5	13
Ord	0.5	14
Bragg	0.6	30
Monroe	0.6	62
Bragg	0.7	26
Bragg	0.7	22
Bragg	0.7	8
Bragg	0.7	21
Monroe	0.7	50
Bragg	0.8	15
Bragg	0.8	22
Monroe	0.9	56
Bragg	0.9	51
Bragg	0.9	25
Bragg	1.0	40
Bragg	1.1	12
Bragg	1.1	45
Monroe	1.1	70
Monroe	1.1	27
Bragg	1.2	20
Bragg	1.2	35
Sill	1.2	15
Bragg	1.3	35
Ord	1.3	5
Bragg	1.4	20
Bragg	1.5	25
Bragg	1.5	14
Bragg	1.5	43
Bragg	1.6	15
Bragg	1.6	42
Ord	1.6	7
Bragg	1.7	31
Bragg	1.7	27
Sill	1.7	2
Monroe	1.7	67
Monroe	1.8	34
APG	1.9	50
Bragg	1.9	21
Bragg	1.9	27
Bragg	2.0	39
Monroe	2.1	48
Bragg	2.1	68
Monroe	2.1	196
Sill	2.2	3
Bragg	2.3	32

TABLE C-2

## JOC DELIVERY ORDER PROCESSING TIME (Continued)

Contract size and location	Amount (\$000)	Elapsed time-days
Bragg	\$ 2.3	30
Monroe	2.4	97
Monroe	2.5	61
Sill	2.5	11
Bragg	2.7	22
Bragg	2.7	14
Monroe	2.7	80
Bragg	2.8	12
Bragg	2.9	20
Bragg	3.1	63
Monroe	3.4	97
Sill	3.4	7
Bragg	3.4	49
Bragg	3.4	34
Bragg	3.8	55
Monroe	3.9	174
Monroe	3.9	244
Monroe	4.1	107
Monroe	4.1	0
Bragg	4.2	33
Sill	4.3	7
Bragg	4.5	27
Sill	4.5	19
Monroe	4.6	68
Monroe	4.7	97
Monroe	4.8	193
Sill	4.8	1
Bragg	4.9	20
Sill	4.9	8
Monroe	5.0	55
Bragg	5.0	9
Sill	5.0	8
Monroe	5.1	60
Sill	5.3	14
Bragg	5.4	46
Monroe	5.4	30
Monroe	5.6	49
Sill	5.6	7
Ord	5.7	45
Bragg	5.8	35
Sill	5.8	1
Monroe	5.9	24
Bragg	6.0	45
Bragg	6.0	28
Sill	6.1	16
Sill	6.1	66
Monroe	6.5	16
Monroe	6.5	241
Bragg	6.5	53
Monroe	6.5	166

TABLE C-2

## JOC DELIVERY ORDER PROCESSING TIME (Continued)

Contract size and location	Amount (\$000)	Elapsed time-days
Bragg	\$6.9	33
Bragg	7.0	48
Bragg	7.1	49
Sill	7.3	25
APG	7.4	11
Bragg	7.8	17
Bragg	7.9	48
Monroe	8.3	25
Monroe	8.5	21
Bragg	8.5	8
Sill	8.5	14
Monroe	8.6	75
Sill	8.7	13
Sill	9.0	11
Sill	9.2	23
Bragg	9.3	15
Sill	9.3	6
Bragg	9.4	17
Monroe	9.5	
Sill	9.6	15
APG	9.7	56
Bragg	9.8	26
Bragg	9.8	45
Bragg	9.9	51
Sill	10.1	4
Bragg	10.2	129
Bragg	10.2	14
Monroe	10.6	204
Bragg	10.7	28
Ord	10.9	68
Ord	11.1	14
Sill	11.1	36
Bragg	11.4	50
Sill	11.4	12
APG	11.9	57
Ord	12.0	97
Bragg	12.1	22
Bragg	12.4	85
Sill	12.5	17
Bragg	12.7	1
Monroe	12.9	
Monroe	13.0	64
Sill	13.0	7
Bragg	13.5	9
Bragg	13.7	45
Sill	14.0	16
Bragg	14.2	41
Bragg	14.2	38
Monroe	14.2	83
Bragg	14.6	17

TABLE C-2

## JOC DELIVERY ORDER PROCESSING TIME (Continued)

Contract size and location	Amount (\$000)	Elapsed time- days
Bragg	\$ 14.7	11
Monroe	14.8	30
Monroe	14.8	42
Bragg	15.3	62
Sill	15.3	37
Monroe	15.4	27
Ord	15.4	28
APG	15.5	40
Sill	16.2	5
Bragg	16.3	36
Sill	17.1	2
Bragg	17.2	63
Bragg	17.5	20
Bragg	17.5	36
Monroe	17.5	138
Bragg	17.9	58
Bragg	18.0	10
Ord	18.0	25
Sill	18.5	4
Bragg	18.6	90
Sill	18.8	15
APG	18.9	24
Monroe	19.4	118
Monroe	19.5	5
Sill	20.5	90
Sill	21.1	28
Sill	21.1	36
Ord	21.2	21
Sill	21.2	18
Sill	21.8	11
Ord	21.9	69
Bragg	22.1	43
Monroe	22.3	90
Bragg	22.5	35
Bragg	22.7	71
Sill	23.1	23
Monroe	23.5	196
Ord	23.9	5
Bragg	24.4	62
Ord	24.6	14
Ord	24.8	14
Sum	\$ 1,604.6	7,981.0
Mean	\$ 8.4	42.5
STD deviation	6.9	43.0
N	190	
Average JOC processing time		42



TABLE C-2

## JOC DELIVERY ORDER PROCESSING TIME (Continued)

Contract size and location	Amount (\$000)	Elapsed time- days
<b>Medium = &gt;\$25,000 &lt; \$200,000</b>		
Sill	\$25.6	4
Monroe	26.2	161
APG	26.7	28
Monroe	27.0	111
APG	27.3	61
Bragg	27.3	6
Ord	28.1	21
Bragg	30.3	32
APG	30.4	92
Bragg	30.9	62
Bragg	31.7	30
Sill	32.1	14
Sill	32.2	28
Sill	32.3	6
Sill	33.6	5
Monroe	34.0	178
Ord	34.7	151
Sill	34.7	0
Monroe	35.0	98
Ord	35.0	6
Sill	35.2	18
Sill	36.5	21
Sill	36.6	7
Monroe	37.7	
APG	38.6	67
Ord	39.2	7
Ord	40.2	112
Sill	41.9	17
Monroe	42.6	
Ord	43.5	77
Sill	44.2	12
Monroe	44.4	182
Ord	44.5	20
Ord	44.6	136
Monroe	45.1	80
APG	46.1	129
Ord	46.7	181
Ord	47.0	21
Sill	47.6	33
APG	48.1	86
Bragg	51.7	7
APG	51.9	13
Sill	52.2	57
Bragg	52.3	11
Bragg	53.5	80
Sill	53.6	20
Ord	54.4	160
Monroe	56.5	

TABLE C-2

## JOC DELIVERY ORDER PROCESSING TIME (Continued)

Contract size and location	Amount (\$000)	Elapsed time- days
Monroe	\$ 57.0	78
Monroe	57.0	60
Monroe	58.6	93
Sill	59.3	10
Bragg	61.0	56
Ord	65.2	13
Bragg	65.7	60
Ord	68.2	48
Ord	70.6	21
Sill	75.5	1
Sill	75.8	36
Monroe	79.2	20
Sill	80.6	27
APG	85.3	11
Monroe	88.9	84
Ord	92.4	62
Sill	92.9	66
Sill	98.7	3
APG	99.0	160
Sill	99.2	31
Sill	103.7	1
Bragg	114.9	105
Sill	120.6	28
Ord	133.0	28
Sill	138.0	40
Ord	153.1	20
Sill	154.1	36
Ord	162.7	16
Ord	166.2	47
Ord	173.0	17
Ord	175.1	101
Ord	183.8	19
Ord	189.9	70
Ord	193.3	47
Sill	197.0	23
APG	199.1	59
Sum	\$5,979.0	4,245.0
Mean	\$ 71.2	52.4
STD deviation	48.4	48.4
N	84	
Average JOC processing time		52
Large = >\$200,000		
Sill	214.5	5
Sill	225.0	83
APG	228.7	71
Sill	273.3	21
Ord	274.3	113

TABLE C-2

## JOC DELIVERY ORDER PROCESSING TIME (Continued)

Contract size and location	Amount (\$000)	Elapsed time- days
Sill	\$ 276.0	29
APG	292.2	140
Sill	319.8	51
APG	323.0	128
Sill	326.9	8
Sill	330.8	42
Sill	331.1	8
Sill	400.6	37
Sill	440.6	16
Sill	450.0	142
APG	529.2	72
Monroe	554.7	96
APG	557.1	51
Sill	568.6	182
Sum	\$6,916.4	1,295.0
Mean	\$ 364.0	68.2
STD deviation	115.6	51.4
N	19	
Average JOC processing time		68

**TABLE C-3**

**JOC CONSTRUCTION QUALITY - REMOVAL OF PLACED WORK**

<b>Post</b>	<b>DO ID #</b>	<b>Amount (\$000)</b>	<b>Noted deficiency</b>
<b>Ord</b>	No data		
<b>Sill</b>	No data		
<b>Bragg</b>	1	\$ 1.8	3
<b>Monroe</b>	1	3.4	7
<b>Monroe</b>	2	3.9	2
<b>Bragg</b>	3	6.8	1
<b>Bragg</b>	1	15.2	1
<b>APG</b>	2	24.9	1
<b>APG</b>	1	35.1	1
<b>APG</b>	2	163.4	1
<b>APG</b>	3	170.0	1
<b>Sum</b>		\$424.5	18
<b>Mean</b>		\$ 47.2	2
<b>STD deviation</b>		64.8	1.9
<b>N</b>		7	
<b>Total number of construction quality deficiencies removed</b>			18

TABLE C-4

## JOC CONSTRUCTION QUALITY - PUNCH LIST DEFICIENCIES

Contract size and location	Amount (\$000)	Deficiencies on pre- final inspection	Deficiencies on final inspection
<b>Small &lt; \$25,000</b>			
Monroe	\$ 0.4	0	0
Monroe	0.5	1	0
Monroe	0.6	0	0
Monroe	0.7	2	1
Monroe	0.9	0	0
Monroe	1.1	1	0
Monroe	1.7	0	0
Monroe	2.1	1	1
Monroe	2.4	2	1
Monroe	2.5	1	1
APG	2.5	0	0
Monroe	2.7	0	0
Bragg	2.8	1	0
Monroe	2.8	2	1
Monroe	3.2	3	1
Bragg	3.6	4	0
Bragg	3.7	2	0
Bragg	3.7	1	0
Monroe	3.9	2	0
Monroe	4.1	1	0
Monroe	4.6	1	0
Monroe	4.7	5	1
Monroe	4.8	0	0
Monroe	5.0	2	0
Monroe	5.4	1	0
Monroe	5.6	2	2
Monroe	6.5	0	0
Monroe	6.5	1	1
Bragg	6.7	2	0
APG	8.0	0	3
Monroe	8.3	1	0
Monroe	8.5	1	0
Monroe	8.6	1	0
Bragg	11.5	2	0
Monroe	13.0	3	0
APG	13.8	0	15
Monroe	14.2	1	0
Monroe	14.8	2	0
Monroe	14.8	2	0
Monroe	15.4	1	1
APG	15.7	0	2
APG	15.8	0	0
APG	16.6	0	3
APG	16.6	0	4
Monroe	17.5	2	2
Monroe	19.4	0	0

TABLE C-4

## JOC CONSTRUCTION QUALITY - PUNCH LIST DEFICIENCIES (Continued)

Contract size and location	Amount (\$000)	Deficiencies on pre- final inspection	Deficiencies on final inspection
Monroe	\$ 19.5	0	0
Bragg	19.7	1	1
Monroe	22.3	0	0
Sum	\$ 389.6	55.0	41.0
Mean	\$ 8.0	1.3	0.8
STD deviation	6.3	1.1	2.2
N	49		
Medium = > \$25,000 < \$200,000			
Monroe	25.0	3	1
Monroe	27.0	0	1
Bragg	35.5	2	0
Bragg	38.6	10	0
APG	48.1	0	10
APG	49.8	0	16
APG	55.8	0	2
Monroe	57.0	4	0
Monroe	57.0	2	1
APG	57.7	0	1
APG	64.4	0	8
APG	76.1	0	3
APG	78.7	0	6
Monroe	88.6	3	1
Bragg	95.5	4	0
APG	175.3	0	5
Sum	\$1030.1	28.0	55.0
Mean	\$ 64.4	3.5	3.4
STD deviation	34.8	2.7	4.4
N	16		
Large = > \$200,000			
APG	292.2		23
Sum	\$ 292.2	0.0	23.0
Mean	\$ 292.2	0.0	23.0
STD deviation	\$0.0	0.0	0.0
N	1		

TABLE C-5

## JOC CONSTRUCTION QUALITY - WARRANTY CALLS

Location	Date month/year	Deficiencies on warranty call
APG	No records	
Bragg	1	2
Monroe	1	0
Monroe	2	0
Monroe	3	0
Monroe	4	0
Monroe	5	0
Monroe	6	0
Monroe	7	0
Monroe	8	0
Monroe	9	0
Monroe	10	1
Monroe	11	0
Monroe	12	0
Monroe	13	0
Monroe	14	0
Monroe	15	2
Monroe	16	0
Monroe	17	0
Monroe	18	1
Monroe	19	1
Monroe	20	0
Monroe	21	0
Monroe	22	0
Monroe	23	0
Monroe	24	0
Monroe	25	0
Monroe	26	0
Monroe	27	0
Monroe	28	0
Monroe	29	0
Monroe	30	0
Monroe	31	0
Monroe	32	0
Monroe	33	0
Monroe	34	0
Org	No data	
Sill	1	1
Sill	2	1
Sill	3	1
Sum		12
Mean		0.3
Standard deviation		0.6
N		38

**TABLE C-6**  
**CONTRACTUAL WORKLOAD**

Contractual data - amount of contracts awarded				
Contract type and location	FY85		JOC test year	
	#	Value (\$000)	#	Value (\$000)
<b>Discrete fixed-price construction</b>				
APG	164	\$ 18,290	86	\$ 14,966
Bragg	343	2,680	No data	
Monroe	31	2,370	14	779
Ord	No data		No data	
Sill	No data		No data	
<b>Totals</b>	<b>538</b>	<b>\$ 23,340</b>	<b>100</b>	<b>\$ 15,745</b>
<b>Requirements/service contracts</b>				
APG 1	5	\$ 2,832	4	\$ 2,873
APG 2	2	1,265	2	1,527
Bragg	2	2,000	No data	
Monroe	2	319	2	317
Ord	No data		No data	
Sill	No data		No data	
<b>Totals</b>	<b>11</b>	<b>\$ 6,416</b>	<b>8</b>	<b>\$ 4,717</b>
<b>Job order contract</b>				
APG	N/A		169	\$ 11,478
Bragg	N/A		285	3,000
Monroe	N/A		58	1,518
Ord	N/A		No data	
Sill	N/A		No data	
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>512</b>	<b>\$ 15,996</b>
<b>Job order contract</b>				
APG	169	\$ 21,122	259	\$ 29,317
Bragg	345	3,945	287	4,527
Monroe	33	4,370	72	2,297
<b>Totals</b>	<b>549</b>	<b>\$ 29,756</b>	<b>620</b>	<b>\$ 36,458</b>
<b>Reimbursable funds data - obligations by DEH for construction contracts</b>				
	FY85 (\$000)		JOC test year (\$000)	
APG	\$ 12,678		\$ 17,608	
Bragg	1,100		500	
Monroe	53		151	
Ord	No data		No data	
Sill	No data		No data	
<b>Totals</b>	<b>\$ 13,831</b>		<b>\$ 18,259</b>	



TABLE C-7

## NON-JOC CONSTRUCTION COST DATA - DISCRETE FIXED PRICED CONTRACTS

Location	Requirement description	Design cost (\$000)	Procure cost (\$000)	Contract amount (\$000)	Post-award cost (\$000)	Total cost (\$000)
<b>Small &lt; \$25,000</b>						
Ord	No data					
APG	1	\$ 0.9	\$0.4	\$ 4.5	\$ 0.6	\$ 6.4
APG	2	2.0	0.4	3.7	0.6	6.7
APG	1	1.7	0.3	5.9	0.0	7.9
APG	2	2.6	0.4	8.7	0.6	12.3
Monroe	3	0.8	0.3	12.4	0.7	14.2
Bragg	4	1.9		12.5		14.4
APG	5	0.9	0.4	12.7	0.6	14.6
Monroe	1	1.0	0.3	16.3	1.0	18.5
APG	2	1.9	0.4	11.9	9.6	23.8
Sum		\$ 13.6	\$2.8	\$ 88.7	\$ 13.7	\$ 118.8
Mean		\$ 1.5	\$0.4	\$ 9.7	\$ 1.7	\$ 13.2
STD deviation		0.6	0.1	4.1	3.0	5.4
N		9				
<b>Medium = &gt; \$25,000 &lt; \$200,000</b>						
APG	3	\$ 14.4	\$0.3	\$ 23.1	\$ 0.0	\$ 37.8
Bragg	1	2.6		39.0		41.6
Bragg	2	8.7		40.0		48.7
APG	3	8.9	0.3	47.6	0.0	56.8
Monroe	4	2.8	0.3	44.1	21.1	68.2
APG	5	18.8	0.4	57.5	7.5	84.2
APG	6	10.6	0.4	77.2	15.5	103.7
Sill	7	3.5	0.9	104.4		109.8
APG	8	3.7	0.4	94.0	42.5	140.6
Monroe	9	8.2	0.3	135.7	2.8	146.9
APG	10	16.1	0.4	56.3	84.4	157.2
APG	11	28.3	0.4	131.3	2.2	162.2
Sum		\$ 126.7	\$4.0	\$850.2	\$175.9	\$1,156.7
Mean		\$ 10.6	\$0.4	\$ 70.8	\$ 19.5	\$ 96.4
STD deviation		7.4	0.2	35.9	26.3	44.7
N		12				
<b>Large = &gt; \$200,000</b>						
Bragg	12	36.1		227.4		263.5
Sill	1	3.5	0.9	300.0		304.4
Monroe	2	19.4	0.3	311.0	21.1	351.8

TABLE C-7

## NON-JOC CONSTRUCTION COST DATA - DISCRETE FIXED PRICED CONTRACTS (Continued)

Location	Requirement description	Design cost (\$000)	Procure cost (\$000)	Contract amount (\$000)	Post-award cost (\$000)	Total cost (\$000)
Sill	3	\$ 3.5	\$ 0.9	\$ 348.6		\$ 353.0
Bragg	4	81.8		747.7		829.5
Sill	5	0.0	0.9	1,732.8		1,733.7
Sum		\$144.3	\$ 3.0	\$3,667.5	\$ 21.1	\$3,835.9
Mean		\$ 24.1	\$ 0.7	\$ 611.3	\$ 21.1	\$ 639.3
STD deviation		28.6	0.3	529.1	0.0	524.7
N		6				

TABLE C-8

## CONSTRUCTION COST DATA - JOC DELIVERY ORDERS

Location	Requirement description	Design cost (\$000)	Procure cost (\$000)	DO award amount (\$000)	Post-award cost (\$000)	Total cost (\$000)
<b>Small &lt; \$25,000</b>						
Ord	No data					
APG	1	\$ 0.4	\$ 0.1	\$ 1.9	\$ 0.0	\$ 2.4
APG	2	0.3	0.1	9.7	0.0	10.1
APG	1	1.2	0.2	7.4	2.1	10.9
APG	2	0.8	0.1	11.9	0.0	12.8
APG	3	1.0	0.1	15.5	0.0	16.6
Monroe	1	0.8	0.2	17.5	0.0	18.5
APG	2	0.2	0.1	18.9	0.0	19.2
Sill	3	0.0	0.2	19.2		19.4
Monroe	4	0.8	0.2	18.9	0.6	20.5
Sill	5	0.1	0.2	21.1		21.4
Monroe	6	1.0	0.2	22.3	0.0	23.5
Bragg	3	0.6	.9	7.0		8.5
Bragg	1	0.6	.9	5.0		7.3
Sum		\$ 7.7	\$ 3.6	\$177.1	\$ 2.7	\$ 191.0
Mean		\$ 0.6	\$ 0.3	\$ 13.6	\$ 0.3	\$ 14.7
STD deviation		0.4	0.3	6.4	0.7	6.2
N		13				
<b>Medium &gt; = \$25,000 &lt; \$200,000</b>						
APG	7	\$ 0.6	\$ 0.1	\$ 27.3	\$ 0.0	\$ 28.0
APG	8	0.7	0.1	30.4	0.0	31.2
APG	9	1.0	0.1	33.6	0.0	34.7
APG	10	0.8	0.1	46.1	0.0	47.0
Sill	1	0.0	0.2	47.6		47.8
APG	2	1.2	0.1	48.1	0.0	49.4
APG	3	1.6	0.1	51.9	0.0	53.6
Monroe	4	2.2	0.2	53.2	3.8	59.4
Monroe	5	2.3	0.2	56.1	1.7	60.4
APG	6	1.0	0.1	84.4	0.0	85.5
APG	7	2.6	0.1	85.3	0.0	88.0
Monroe	8	3.7	0.2	88.6	0.0	92.5
APG	9	0.8	0.1	93.0	0.0	93.9
Bragg	15	0.6	0.6	185.5	0.2	186.8
Bragg	16	0.1	0.1	5.8		61.2
Bragg	17	0.1	0.1	5.8	0.6	66.5
Bragg	18	0.2	0.2	7.0		115.4
Sum		\$ 19.6	\$ 2.7	\$1172.8	\$ 6.2	\$1,201.3
Mean		\$ 1.2	\$ 0.2	\$ 69.0	\$ 0.4	\$ 70.7
STD deviation		1.0	0.1	37.4	1.0	35.7
N		17				

TABLE C-8

## CONSTRUCTION COST DATA - JOC DELIVERY ORDERS (Continued)

Location	Requirement description	Design cost (\$000)	Procure cost (\$000)	Contract amount (\$000)	Post-award cost (\$000)	Total cost (\$000)
<b>Large &gt; = \$200,000</b>						
APG	3	\$ 0.8	\$ 0.1	\$ 199.1	\$ 0.0	\$ 200.0
APG	4	3.5	0.2	228.7	0.5	232.9
APG	7	10.2	0.1	292.2	0.0	302.5
Sill	8	3.5	0.2	312.5		316.2
Sill	9	0.6	0.2	328.0		328.8
APG	10	7.3	0.1	323.0	1.5	331.9
APG	11	26.0	0.2	529.2	5.5	560.9
APG	13	14.2	0.1	557.1	0.0	571.4
Monroe	14	48.3	0.6	554.7	18.8	622.4
<b>Sum</b>		<b>\$ 114.6</b>	<b>\$ 2.1</b>	<b>\$3,439.4</b>	<b>\$26.3</b>	<b>\$3,582.3</b>
<b>Mean</b>		<b>\$ 11.5</b>	<b>\$ 0.2</b>	<b>\$ 343.9</b>	<b>\$ 3.8</b>	<b>\$ 358.2</b>
<b>STD deviation</b>		<b>14.4</b>	<b>0.2</b>	<b>146.7</b>	<b>6.4</b>	<b>162</b>
<b>N</b>		<b>10</b>				

TABLE C-9

## CONSTRUCTION COST DATA - COST COMPARISON OF COMPARABLE WORK

Contract size and location	Direct costs -- non-JOC				Contract size and location	Direct costs -- JOC				
	Project description	Original contract amount (\$000)	Modification amount (\$000)	Total direct cost (\$000)		Project description	Original contract amount (\$000)	Modification amount (\$000)	Total direct cost (\$000)	
Small contracts: <\$25,000 Monroe Ord APG Bragg Bragg Bragg Bragg Sill APG Bragg	No data				Small contracts: <\$25,000 Bragg Monroe Ord Sill APG APG APG	No data			\$4.6 \$0.0 5.4 24.8	
	No data					No data				
	1	\$4.5	\$0.6	\$5.1		1	\$4.6	\$0.0		
	2	12.3	0.0	12.3		2	5.4	0.0		
	3	12.5	0.0	12.5		3	24.8	0.0		
	1	15.7	0.0	15.7						
	2	17.3	0.0	17.3						
	1	12.5	6.4	18.9						
	2	11.9	9.6	21.5						
	3	22.0	0.0	22.0						
Sum Mean Standard deviation N		\$114.5	\$16.6	\$131.1	Sum	\$34.8	\$0.0	\$34.8		
		\$12.7	\$1.8	\$14.6	Mean	\$11.6	\$0.0	\$11.6		
		5.1	3.4	5.8	Standard deviation	9.3	0.0	9.3		
		9			N	3				

TABLE C-9

## CONSTRUCTION COST DATA - COST COMPARISON OF COMPARABLE WORK (Continued)

Contract size and location	Direct costs - non-JOC				Contract size and location	Direct costs - JOC			
	Project description	Original contract amount (\$000)	Modification amount (\$000)	Total direct cost (\$000)		Project description	Original contract amount (\$000)	Modification amount (\$000)	Total direct cost (\$000)
Medium contracts: > \$25,000 - < \$200,000	Bragg	4	\$29.9	\$0.0	\$29.9	4	\$54.2	\$0.0	\$54.2
	Bragg	5	32.5	0.0	32.5	5	94.4	0.0	94.4
	Bragg	6	39.7	0.0	39.7	6	90.4	0.0	90.4
	APG	7	47.6	0.0	47.6				
	Sill	8	61.4	2.9	64.3				
	Bragg	9	65.9	0.0	65.9				
	Bragg	10	66.5	9.7	76.2				
	APG	11	131.3	2.2	133.5				
	APG	12	99.4	42.5	141.9				
	Sill	13	149.5	1.7	151.3				
	Sill	14	171.0	1.2	172.2				
	Sum		\$894.7	\$60.3	\$955.0		\$229.0	\$0.0	\$229.0
	Mean		\$81.3	\$5.5	\$86.8		\$76.3	\$0.0	\$76.3
	Standard deviation		47.0	12.0	50.2		15.8	0.0	15.8
	N		11				3		

**TABLE C-9**  
**CONSTRUCTION COST DATA - COST COMPARISON OF COMPARABLE WORK (Continued)**

Contract size and location	Direct costs - non-JOC				Contract size and location	Direct costs - JOC			
	Project description	Original contract amount (\$000)	Modification amount (\$000)	Total direct cost (\$000)		Project description	Original contract amount (\$000)	Modification amount (\$000)	Total direct cost (\$000)
Large contracts: > \$200,000	15	\$250.0	\$38.6	\$288.6	Large contracts: > \$200,000	7	\$228.7	\$0.0	\$228.7
	APG					APG			
	16	499.5	15.2	514.7		8	323.0	0.0	323.0
	APG					APG			
	17	483.8	65.5	549.3		9	529.2	0.0	529.2
	APG					APG			
	18	737.5	130.2	867.7					
	Sill								
Sum Mean Standard deviation N		\$1,970.8	\$249.5	\$2,220.3	Sum Mean Standard deviation N		\$1,080.9	\$0.0	\$1,080.9
		\$492.7	\$62.4	\$555.1			\$420.4	\$0.0	\$420.4
		172.4	43.0	206.4			125.5	0.0	125.5
		4					3		

**TABLE C-10**  
**IMPACT OF JOC ON BUSINESSES**

Installation name	APG	Bragg	Monroe	Ord	Sill	Total
<b>1. Small business participation in Non-JOC installation contract activities</b>						
Prime contractor	No data	No data		No data		
FY85 - # contracts			6,861		58,714	65,575
FY85 - value (\$000)			\$12,915		\$78,889	\$157,379
FY JOC - # contracts			20,206		56,697	76,903
FY JOC - value (\$000)			\$9,434		\$71,791	\$81,225
Subcontractor	No data	No data		No data	No data	
FY85 - # contracts						0
FY85 - value (\$000)						\$0
FY JOC - # contracts						0
FY JOC - value (\$000)						\$0
<b>2. Small business participation in JOC activities</b>						
Total JOC work awarded (\$000)	11,478	No data	1,577	No data	7,000	\$20,055
Total JOC work done by small/"8a"	6,765		1,000		2,799	\$10,564
(Prime/sub) (\$000)	\$1,430		\$8		\$4,201	\$5,639
JOC work done by small/"8a" (%)	85%		63%		85%	-
	18%		1%		15%	-
Est new small/"8a" participating	No data		10			10
For JOC (#)	No data		2			2
<b>3. "8a" participation in post-contracting activities</b>						
"8a" goal FY85 - (#)		No data		No data		0
"8a" goal FY85 - (\$000)	\$4,900		\$245		\$9,168	\$14,313
"8a" goal achieved FY85 - (#)						0
"8a" goal achieved FY85 - (\$000)	\$4,500		\$811		\$13,016	\$18,327
"8a" goal JOC test - (#)						0
"8a" goal JOC test - (\$000)	\$4,100		\$811		\$13,016	\$17,927
"8a" goal achieved JOC test - (#)						0
"8a" goal achieved JOC test - (\$000)	\$6,558		\$770		\$12,495	\$19,823
Small/"8a" participation - (#)			1			1
Small/"8a" participation - (\$000)			\$1,577			\$1,577
<b>4. Competitiveness of small business</b>						
If JOC solicitation is unrestricted?				No data	No data	
Proposals received from large business (#)	5					5
Proposals received from small business (#)	1					1
<b>5. Expenditures for A-E design services (\$000)</b>						
FY85 costs	\$1,892			No data	No data	\$1,892
JOC test-year costs	\$963					\$963
Total construction contract costs	\$10,999					\$10,999
<b>6. Small &amp; disadvantaged business use program trends (\$M)</b>						
Total business FY83 - goal						\$0
Total business FY83 - performance	\$113	\$139				\$252
Total business FY84 - goal						\$0
Total business FY84 - performance	\$125	\$156				\$281
Total business FY85 - goal						\$0
Total business FY85 - performance	\$158	\$174				\$332
Small business FY83 - goal	\$74	\$64				\$138
Small business FY83 - performance	\$67	\$68				\$135
Small business FY84 - goal		\$68				\$318
Small business FY84 - performance	\$184	\$66				\$422
Small business FY85 - goal	\$102	\$70				\$172
Small business FY85 - performance	\$106	\$73				\$180
Small business set-asides FY83 - goal	\$30	\$42				\$72
Small business set-asides FY83 - performance	\$42	\$50				\$92
Small business set-asides FY84 - goal		\$48				\$48



TABLE C-10

## IMPACT OF JOC ON BUSINESSES (Continued)

Installation name	APG	Bragg	Monroe	Ord	SIH	Total
6. Small & disadvantaged business use program trends (SM) (Continued)			No data	No data	No data	
Small business set-asides FY84 - performance	\$153	\$48				\$202
Small business set-asides FY85 - goal	\$47	\$52				\$98
Small business set-asides FY85 - performance	\$62	\$55				\$118
8a FY83 - goal	\$7					\$7
8a FY83 - performance	\$2	\$6				\$8
8a FY84 - goal						\$0
8a FY84 - performance	\$13	\$7				\$20
8a FY85 - goal	\$5					\$5
8a FY85 - performance	\$14	\$8				\$22
Direct award FY83 - goal	\$7					\$7
Direct award FY83 - performance	\$4					\$4
Direct award FY84 - goal						\$0
Direct award FY84 - performance	\$2					\$2
Direct award FY85 - goal	\$5					\$5
Direct award FY85 - performance	\$1,000					\$1,000
Subcontract FY83 - goal	No data					\$0
Subcontract FY83 - performance						\$0
Subcontract FY84 - goal						\$0
Subcontract FY84 - performance						\$0
Subcontract FY85 - goal						\$0
Subcontract FY85 - performance						\$0

TABLE C-11

**INSTALLATION CONTRACTING ACTIVITIES**  
**DEH contractual actions (construction services)**

	APG	Bragg	Monroe	Ord	Sill	Total
<b>1. DEH contractual construction actions (#)</b>						
FY85	730	144	N/A	N/A	N/A	874
JOC year	569	N/A	N/A	N/A	N/A	569
<b>A. Discrete fixed-price contracts awarded</b>						
FY85	164	61	N/A	N/A	N/A	225
JOC year	86	12	N/A	N/A	N/A	98
<b>B. Requirements-contracts awarded</b>						
FY85	5	0	N/A	N/A	N/A	5
JOC year	4	0	N/A	N/A	N/A	4
<b>C. Delivery orders issued</b>						
FY85	246	0	N/A	N/A	N/A	246
JOC year	172	0	N/A	N/A	N/A	172
<b>D. Modifications issued</b>						
FY85	345	9	N/A	N/A	N/A	354
JOC year	303		N/A	N/A	N/A	303
<b>E. Claims processed</b>						
FY85	0		N/A	N/A	N/A	0
JOC year	4		N/A	N/A	N/A	4
<b>2. DEH contractual actions less than \$25,000</b>						
FY85	2,105	70	N/A	N/A	N/A	2,175
JOC year	5,406	12	N/A	N/A	N/A	5,418

TABLE C-12

## USACE CONTRACTING ACTIVITIES - INSTALLATION SUPPORT

Contracting value						
	APG	Bragg	Monroe	Ord	Sill	Total
<b>1. Number of A/E contracts awarded of JOC</b>						
FY85	11	20	0	6	0	37
JOC test year	13	13	2	4	0	32
<b>2. Total number of A/E DOs issued</b>						
FY85		150	0	8	0	158
JOC test year		56	0	2	0	58
<b>Dollar value of A/E delivery orders issued (\$000)</b>						
FY85		\$3,218	\$0	\$110	\$0	\$3,328
JOC test year		\$1,741	\$0	\$172	\$0	\$1,913
<b>3. Total number of fixed-price contracts, solicited for the DEH</b>						
FY85		30	0	18	0	48
JOC test year	9	48	51	5	0	113
<b>Dollar value of fixed-price contracts, solicited for the DEH (\$000)</b>						
FY85	\$59,889	\$19,712	\$0	\$4,706	\$0	\$84,307
JOC test year	\$1,698	\$28,035	\$1,505	\$1,400	\$0	\$42,639
<b>4. Total number of fixed-price contracts</b>						
FY85	95	27	0	18	0	140
JOC test year	83	42	26	5	0	156
<b>Dollar value of fixed-price contracts (\$000)</b>						
FY85	\$157,962	\$18,812	\$0	\$4,706	\$0	\$181,480
JOC test year	\$383,429	\$25,812	\$388	\$1,400	\$0	\$411,029
JOC support						
	APG	Bragg	Monroe	Ord	Sill	Total
<b>1. Estimated cost to solicit &amp; award JOC</b>						
Man days	120	30	15	30	0	195
Dollars (\$000)	\$25	\$10	\$5	\$7	\$0	\$47
<b>2. Estimate of district's contract administrative cost per delivery order</b>						
Man days	1.5	1	2	1	0	5.5
Dollars (\$000)	\$ .09	\$ .08	\$1	\$2	\$0	\$3

TABLE C-13

## INSTALLATION CONTRACTING ACTIVITIES - NON-JOC COST OF CONTRACTING

Post	Original contract amount (\$000)	Final contract amount (\$000)	Number of modifications	Number of claims	Estimated procurement costs (\$000)	Estimated contract administrative cost (\$000)
<b>Small &lt; \$25,000</b>						
Monroe					0.4	5.3
Sill					0.3	5.8
APG	\$ 7.6	\$ 5.9	0	0	\$0.5	\$14.9
APG	10.3	10.3	0	N/A	0.3	12.8
APG	9.3	10.4	1	0	0.5	10.7
APG	10.4	11.0	0	0	0.3	0.3
APG	15.1	11.8	0	0	0.4	0.6
APG	16.1	16.1	0	N/A	0.3	0.5
APG	21.1	21.1	0	N/A	0.3	0.7
APG	24.5	24.5	0	N/A	0.3	0.6
<b>Sum</b>	<b>\$114.40</b>	<b>\$111.10</b>	<b>1.0</b>	<b>0.0</b>	<b>\$2.60</b>	<b>\$41.10</b>
<b>Mean</b>	<b>\$ 14.30</b>	<b>\$ 13.89</b>	<b>0.1</b>	<b>0.0</b>	<b>\$0.33</b>	<b>\$ 5.14</b>
<b>Standard deviation</b>	<b>5.6</b>	<b>5.8</b>	<b>0.3</b>	<b>0.0</b>	<b>0.1</b>	<b>6.0</b>
<b>N</b>	<b>8</b>					
<b>Medium &gt; = \$25,000 &lt; \$20,000</b>						
APG	\$ 20.9	\$ 30.3	1	N/A	\$0.3	\$ 2.1
APG	45.4	52.0	3	N/A	0.4	2.7
APG	69.8	69.8	0	N/A	0.6	2.6
APG	69.8	73.6	1	0	0.3	4.0
APG	80.9	87.3	2	N/A	0.7	1.6
APG	88.0	91.4	1	N/A	0.3	10.7
APG	134.8	134.8	0	N/A	0.3	9.0
APG	175.8	177.3	1	0	0.3	7.8
APG	195.0	184.0	0	0	0.4	15.1
<b>Sum</b>	<b>\$880.40</b>	<b>\$900.53</b>	<b>9.0</b>	<b>0.0</b>	<b>\$3.30</b>	<b>\$55.60</b>
<b>Mean</b>	<b>\$ 97.82</b>	<b>\$100.06</b>	<b>1.0</b>	<b>0.0</b>	<b>\$0.37</b>	<b>\$ 6.18</b>
<b>Standard deviation</b>	<b>55.3</b>	<b>50.8</b>	<b>0.9</b>	<b>0.0</b>	<b>0.2</b>	<b>4.4</b>
<b>N</b>	<b>9</b>					

TABLE C-13

**INSTALLATION CONTRACTING ACTIVITIES - NON-JOC COST OF CONTRACTING**  
**(Continued)**

Post	Original contract amount (\$000)	Final contract amount (\$000)	Number of modifications	Number of claims	Estimated procurement costs (\$000)	Estimated contract administrative cost (\$000)
<b>Large &gt; = \$200,000</b>						
APG	\$ 223.7	\$ 223.7	0	N/A	\$0.3	\$6.7
APG	260.8	260.8	0	N/A		
APG	299.7	299.7	0	N/A		
APG	336.8	357.0	1	0		
APG	358.0	358.0	0	N/A		
APG	454.3	428.6	0	0		
APG	502.8	497.3	1	0		
APG	481.0	501.8	1	N/A		
Bragg	2,941.0	2,941.0				
Bragg	6,200.0	6,200.0				
Bragg	13,680.0	13,680.0				
Bragg	15,668.0	15,668.0				
Bragg	22,000.0	22,000.0				
Bragg	22,300.0	22,300.0				
<b>Sum</b>	<b>\$85,706.1</b>	<b>\$85,715.9</b>	<b>3.0</b>	<b>0.0</b>	<b>\$0.3</b>	<b>\$6.7</b>
<b>Mean</b>	<b>\$ 6,121.9</b>	<b>\$ 6,122.6</b>	<b>0.4</b>	<b>0.0</b>	<b>\$0.3</b>	<b>\$6.7</b>
<b>Standard deviation</b>	<b>8,183.0</b>	<b>8,182.5</b>	<b>0.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>N</b>	<b>14</b>					

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

## REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION Unclassified			1b. RESTRICTIVE MARKINGS	
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION / AVAILABILITY OF REPORT "A" Approved for public release; distribution unlimited.	
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE				
4. PERFORMING ORGANIZATION REPORT NUMBER(S) LMI-AR713R1			5. MONITORING ORGANIZATION REPORT NUMBER(S)	
6a. NAME OF PERFORMING ORGANIZATION Logistics Management Institute		6b. OFFICE SYMBOL (if applicable)	7a. NAME OF MONITORING ORGANIZATION	
6c. ADDRESS (City, State, and ZIP Code) 6400 Goldsboro Road Bethesda, Maryland 20817-5886			7b. ADDRESS (City, State, and ZIP Code)	
8a. NAME OF FUNDING / SPONSORING ORGANIZATION U.S. Army Corps of Engineers		8b. OFFICE SYMBOL (if applicable) USACE	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER MDA903-85-C-0139	
8c. ADDRESS (City, State, and ZIP Code)			10. SOURCE OF FUNDING NUMBERS	
			PROGRAM ELEMENT NO. PROJECT NO. TASK NO. WORK UNIT ACCESSION NO.	
11. TITLE (Include Security Classification) JOB ORDER CONTRACTING: A PROCUREMENT SUCCESS STORY				
12. PERSONAL AUTHOR(S) William B. Moore, Carl F. Stout				
13a. TYPE OF REPORT Final		13b. TIME COVERED FROM TO	14. DATE OF REPORT (Year, Month, Day) January 1988	15. PAGE COUNT 57
16. SUPPLEMENTARY NOTATION				
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD GROUP SUB-GROUP			Job order contracts (JOCs), RPMA construction, U.S. Army Corps of Engineers (USACE)	
19. ABSTRACT (Continue on reverse if necessary and identify by block number)				
<p>In the past 10 years, real property maintenance activities (RPMA) spending by Army installations has more than doubled in real terms while the staffs that support those efforts have remained relatively constant. The shortage of contract administration and engineering staffs has resulted in increases in the time required to obtain RPMA construction contracts and subsequent degradation of mission support.</p> <p>Job order contracts (JOCs), an innovative technique for providing RPMA support to Army installations, are being tested by the U.S. Army Corps of Engineers (USACE) as a solution to the problem. Job Order Contracting is the use of competitively-bid, firm-fixed-price, indefinite-quantity contracts that list detailed tasks, unit prices, and price multipliers that can be used to rapidly establish the prices and terms for RPMA projects. JOC differs from conventional firm-fixed-price contracts in that an "umbrella" contract is awarded under which individual work orders are issued, eliminating the need for separate contracts and much of the detailed specifications and formal drawings for each order. Thus, work order lead times and contracting and engineering effort are significantly reduced.</p> <p>Experience at eight installations confirm that a JOC does take less time and effort than conventional contracting methods with no sacrifice to quality and control. Further, contract administration of JOC actions is no different than that of other installation contracting. provides new opportunities for small and small disadvantaged businesses to participate in DoD construction contracts; commercial activity reviews affected.</p>				
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION	
22a. NAME OF RESPONSIBLE INDIVIDUAL			22b. TELEPHONE (Include Area Code)	22c. OFFICE SYMBOL