

721340 091203

## Some Comments on Total Package Procurement

By George D. Gearino

The author discusses the philosophy of a total package procurement contract and some of the significant features encountered in the survey of the C-5A aircraft program.

In 1965 the Air Force contracted for the C-5A aircraft under a new procurement technique called the Total Package Procurement Concept. This concept, commonly referred to as TPPC, is an outgrowth of attempts by the Department of Defense to institute competition into the procurement of major weapons systems. Previously, these procurements had been largely sole source. The idea of TPPC has generally been credited to Assistant Secretary of the Air Force, Robert H. Charles. Although it is still in the experimental stage and undergoing some changes, TPPC is being used on other major procurements and appears to be the model for the future in major defense contracts.

### *Introduction*

TPPC is intended to place as much development, production, and support as is possible of a major weapons system under one competitive umbrella. This entire package will be subject to all the advantages of competition. Previously, competitors tended to provide unrealistic price estimates and to over-

state proposed performance because of awareness that follow-on production procurements would of necessity be sole source to the winning competitor. This is referred to as "buy-in" bidding and TPPC is designed to prevent this.

TPPC is expected to motivate the winning competitor to emphasize simple design, economical production, easy maintenance, and high reliability. The buyer will benefit with an economical and reliable product. This technique is also expected to encourage the contractor to practice economies from the outset with respect to suppliers and subcontractors. It will provide incentive to the contractor to stabilize design and keep to a minimum the changes normally associated with a development program. To attain these objectives, the contractor will have to be encouraged to assume much of the development risk previously assumed by the Government and will have to be motivated to meet not only price but also performance commitments.

The C-5A procurement included in the Request for Proposal (RFP) and in the contract unique features not pre-

---

Mr. Gearino is a supervisory auditor in the Atlanta Regional Office. He is a graduate of the University of Georgia and has been with the General Accounting Office since 1952.



Photo Courtesy Lockheed-Georgia Corp.

First Air Force/Lockheed C-5 Galaxy, built—and first to fly—lines up with the kind of U.S. Army load it will be able to carry in Military Airlift Command service. Total load, including 50 troops accompanying equipment, weighed 256,000 pounds. It includes: one M109 self-propelled 155-mm. howitzer, one M113 armored personnel carrier, one M577 armored command post, two 2½-ton trucks towing 1½-ton trailers, three ¼-ton trucks with one 106-mm. recoilless rifle each, one ¼-ton truck towing a ¼-ton trailer, two 5-ton trucks towing 105-mm. howitzers, and three ¼-ton ambulances. With this load aboard, C-5 could fly more than 2,900 miles nonstop at a cruise speed of about 530 miles an hour and land in a distance of 4,480 feet.

## TOTAL PACKAGE PROCUREMENT

viously experienced in a conventional procurement. Some of these unusual features were:

1. A model contract to be completed and signed by each competitor was included in the RFP. This signed contract referenced the competitors' price and detail specifications on the performance to be obtained. After selection of the winning competitor, the Government representative affixed his signature to the model contract and it became the official contract document.
2. The RFP specified that there would be no negotiation of the proposed price. The price and performance commitments included in the proposal were binding.
3. The RFP also contemplated that Government-furnished equipment would be kept to a minimum or eliminated completely.
4. The contractor was permitted to select one of several methods by which he could participate in incentive profits. Each of these methods was explained in the RFP.

The contract document also contained some unusual features. Some of these were:

1. A correction-of-deficiencies clause provided that the contractor must meet or exceed performance criteria included in his proposal. This was intended to prevent any degradation of the specifications. Hopefully, this clause will preclude the Government from obtaining a less than acceptable product.

2. The contract placed full systems responsibility on the prime contractor. This responsibility included the interface of any major Government- or subcontractor-furnished equipment with the airframe. This is intended to place full responsibility for all performance criteria on the prime contractor that must be demonstrated during the test phase of the program.
3. The contract covered not only development but also production and options for future productions. If the options are exercised, the contract will span approximately a 10-year period. For this reason, the contract included a clause to protect the contractor from abnormal fluctuations in the economy over this extended period.
4. The contract included incentives on cost and performance to motivate the contractor to make every effort to keep costs to a minimum and to exceed proposed performance. The performance incentives are outside the contract price and will be paid even if the total cost exceeds the ceiling price.
5. The contract included a clause that any changes of less than \$100,000 each will be accomplished at no change in contract target price. As the magnitude of changes over \$100,000 increases, profit rates applicable to these changes will decrease. The objective of this clause is to minimize design changes during and after

development. Experience has shown that these changes are a means of recovering losses incurred during the development stage. These changes also tend to delay production of operational units.

The Department of Defense (DOD) recognized that the Government must relax certain controls considered restrictive in light of TPPC. Certain reviews and approvals which normally occur at different stages of development and production must be eliminated. This places on the contractor more responsibility to meet specification requirements and precludes any abrogation of the correction-of-deficiencies clause.

### *TPPC's Advantages and Some Related Audit Problems*

There appears to be general agreement among DOD officials that there are six principal advantages to be achieved from a TPPC procurement. However, a recent GAO survey of the C-5A program showed that some of these benefits presented problems to the GAO auditor. The success of TPPC hinges on achieving these benefits. Therefore, the auditor must recognize the pitfalls of these benefits when making an analysis of TPPC.

1. The concept requires a tightening of design and configuration discipline in both the proposal specification and the work under contract.

One problem associated with this benefit is that the Government must be more specific in detailing exactly what is required of the weapons system. The

GAO auditor reviewing the procurement must make a detailed study of the request for proposal to ensure that specific parameters are established against which competitive proposals can be measured. Also, the auditor must determine that these parameters are carried over into the contract to provide a base for measuring performance rewards.

2. TPPC inhibits buy-in bidding with its related problems of overstated performance and understated cost. Competition over more of the complete program is accomplished and thereby provides some assurance that price is reasonable.

The primary problem associated with this benefit is making a determination that competition did in fact exist. The very size of these procurements and the increased risk to the contractor restrict the competitive field. Only those fortunate few who can afford to invest a considerable amount of their resources in program definition and can assume the risks associated with the procurement are able to compete for the award. When the competitive field is narrowed to only two or three bidders, then outside conditions, such as a backlog of business, could influence a competitor's proposal and have the effect of negating competition.

3. Cost and performance commitments motivate the contractor to design, at the outset, for economical production, high reliability, and easy maintenance.

The problem associated with this benefit is that it requires all competitors to define these commitments dur-

## TOTAL PACKAGE PROCUREMENT

ing proposal preparation, and this increases the cost of contract definition. Although competitors are generally awarded fixed-price definition contracts which reimburse a part of this definition expense, the competitors are inclined to incur costs over and above the definition contract amount. The accounting treatment of these nonreimbursed costs presents a problem. Care must be taken to ensure that these costs have been properly categorized among basic research and development, bid and proposal expense, and costs directly associated with the work prior to contract award. Agency auditors usually examine into the treatment of these costs during their periodic reviews of overhead allocations. These reviews can be helpful in any GAO examination of the definition contract.

4. The contractor is encouraged to obtain supplies and services from the most reliable efficient sources.

To obtain maximum advantage of this benefit and to ensure that there is no interference in the contractor's activities which may later partially negate the correction-of-deficiencies clause mentioned above, the Government must refrain from reviewing and approving the contractor's make-or-buy decisions and subsequent changes to these decisions. It is conceivable that the contractor could subcontract a major portion of the work on a fixed-price basis and ultimately participate in rewards for cost underruns which are actually earned by the subcontractors. Also, the contractor can conceivably subcontract work to foreign suppliers and contribute to the balance-of-payments problem without Govern-

ment objection even though a Buy American clause is included in the contract.

5. The Government is permitted to make a choice between competing contractors on the basis of binding commitments over the entire program.

To achieve this benefit, the Government must place more emphasis on the techniques used in source selection. More attention must be given to the specifications and performance guarantees than had been given under previous procurements. In the past, price had been the primary factor in deciding the winning competitor. The GAO auditor, who is usually price oriented, must also become specification oriented when reviewing the selection process.

6. Both the Government and the contractor benefit from long-run program stability which permits better planning and funding.

Although this benefit appears to have no immediate disadvantage, it is possible that program terminations may be more expensive under TPPC procurement than under conventional procurements. Comment on this will have to be deferred until a termination is actually experienced and can be analyzed.

### *TPPC's Disadvantages and Some Related Audit Problems*

Our survey of the C-5A program revealed some disadvantages in procuring under this concept and some new audit problems. Some of these audit problems require changes in the audit approach previously used to review

contractors' activities and contract administration.

1. Increased cost in preparing a price proposal and specification document.

Because competitors must define so much more of a weapons system in the proposal than had previously been defined, the expense of proposal preparation is much greater. This additional cost may be nothing more than a shifting of certain development expenses to the definition contract. However, problems are presented with the allowability of these costs to the unsuccessful competitor. Care must be exercised to ensure that these costs are not being recovered through overhead distribution. A review of agency overhead audits can be helpful in determining if these costs are being allocated to other Government contracts.

Another problem is that increased proposal expense restricts competition to only those companies capable of absorbing these high costs. Also, many companies are reluctant to incur large definition expense without assurance of award of the contract.

Since competition is necessary to the success of the program, it is necessary to review both the successful and the unsuccessful proposals. A review of the unsuccessful proposals is necessary to establish the existence of competition and to ensure that proposals are responsive to the RFP. After contract award, this could present a problem of access to those proposal records and supporting documents prepared at the bidder's expense.

2. TPPC encourages disengagement from the contractor's day-to-day

activities and thereby alters the Government's normal contract administration responsibilities.

TPPC encourages the contractor to select and negotiate subcontracts, to plan production schedules, to make engineering and management decisions, etc., without Government review and approval. Therefore, new techniques must be devised to effectively monitor the contractor's activities after contract award. It logically follows that both the agency auditor and the GAO must devise new techniques to review this monitoring.

Another problem associated with this disengagement is that it has a tendency to inhibit independent reviews of the contractor's activities. For example, it is not yet completely clear what GAO's rights are with respect to performing postaudits on this type of contract. Also, after contract award, there is a reluctance on the part of the Government either to make management suggestions or to criticize contractor actions lest they be construed as interference. Consequently, the Government must continue surveillance over the contractor's activities without exercising control over these activities.

3. Because the competitors must define a major part of the weapons system during proposal preparation, the source selection process must include a review not only of cost but also of proposed production techniques, company management, proposed maintenance and operating costs, etc., before making a selection of the contractor.

This requirement places a tremendous burden on the source selection

## TOTAL PACKAGE PROCUREMENT

committee and shifts some of the Government's administrative responsibilities to a time frame prior to contract award. A review of a total package procurement must include an analysis of the method by which the selection was made and a determination of whether there was sufficient information available to make an intelligent selection. Another problem associated with reviewing the selection is ensuring that each element used to make the selection is properly weighed. TPPC encourages design of a product that will not only meet performance criteria but also achieve economical operation and low maintenance over the life of the weapon. Therefore, the importance of operating and maintenance costs should be fully considered, as well as design and production estimates, when making the selection. The GAO auditor reviewing TPPC must satisfy himself that the selection was not made solely on proposed design and production costs.

4. Another disadvantage of this type of procurement is that the prime contractor may tend to pass to subcontractors much of the risk associated with meeting price and performance criteria.

The TPPC contract provides for a higher profit rate than conventional contracts, and the incentive-profit-sharing ratio must be favorable to the contractor. Because the contract will usually cover a longer period, a clause is needed to protect the contractor from abnormal increases in labor and material costs. The prime contractor can conceivably pass much of the risk associated with performance and price to the subcontractors without passing

down some of the protection associated with this risk (e.g., higher profits and a cost increase clause). Although GAO is usually not involved in proposed profits of subcontractors, too low a profit structure could affect the quality of the subcontractors' work. Consequently, the GAO auditor must satisfy himself that the prime contractor is effectively monitoring the subcontractors' operations.

An interesting side problem associated with subcontractors is the determination of administrative responsibility. Under the philosophy of TPPC, the prime contractor is responsible for selecting subcontractors, reviewing price proposals, negotiating subcontracts, and administering the subcontractors' operations such as quality and production control. Many of these subcontractors occupy Government facilities, and many times a resident auditor and an agency contract administration team are stationed at the plant. If the Government representatives located at the subcontractors' plants perform these services for the prime contractor, material savings can be realized. However, this could result in the Government's assuming a responsibility which properly belongs to the prime contractor and, in effect, would be negating an advantage of TPPC.

### *Conclusion*

We have recently completed a survey of the C-5A program. One primary objective was to learn about TPPC and how we in GAO could effectively review this new concept.

GAO is charged with reviewing the manner in which Federal agencies ad-

## TOTAL PACKAGE PROCUREMENT

minister Government contracts. Because the Government's direct financial interest is in no way changed by TPPC, we were vitally interested in contract costs, management of Government-owned property, etc.

As we learned more about TPPC, we soon found that the usual review techniques would not work. For example, we found that, in a TPPC program, we should have been equally interested in how the agency disengages from the contractor's day-to-day activities as well as in the manner in which the agency administers the contract.

The philosophy of TPPC requires the auditor to place more emphasis on reviewing the competitive atmosphere surrounding the procurement. Competition on a TPPC program is necessary to provide the protection that price is reasonable. The contract is structured to recognize the existence of this competition by reducing some of the surveillance which has previously been exercised over conventional-type procurements. The auditor therefore must make an in-depth review to satisfy himself that effective competition did exist.

Another necessary change is for the GAO auditor to review in detail both the contract and the request for proposal. One objective of this review is to ensure that the parameters against which incentive rewards will be computed are clearly defined. Another is to determine if the contract is structured in such a way as to ensure that the contractor will take advantage of each opportunity to reduce cost and improve performance.

The GAO auditor must make a greater in-depth analysis of the source

selection process than had been made on previous procurements. During this source selection, the Government must satisfy itself that the contractor has the necessary management know-how, engineering and production capability, test plans, quality and reliability programs, etc., to achieve price and performance goals. This can only be done by an in-depth review of the proposal. Therefore, the Government's major administrative responsibility occurs prior to contract award and places greater importance on the source selection process. The auditor can best determine if the Government's interests are being protected by giving more attention to how this source selection was made and to whether all available tools were used by those making the selection.

The auditor should also review the method by which the Government representatives disengage themselves from the contractor's activities while still retaining enough information to permit program redirection or cancellation if necessary. The general relaxation of controls and hands-off philosophy engendered by TPPC prevents the Government from monitoring the contractor's activities in the usual manner. Therefore, new ways must be found to administer the contract and the auditor must analyze them to ensure that a proper balance between control and surveillance is achieved.

• • • •

TPPC is a significant departure from previously used procurement techniques and is by no means the last change we will see. The DOD is constantly reevaluating and changing its procurement methods. Some recent in-

## "TOTAL" PACKAGE PROCUREMENT

novations, in addition to TPPC, are DOD Directive 3200.9 covering systems development and the 7000 series directives covering management control systems. Currently being studied are cost performance and schedule control systems and uniform cost accounting standards for contractors. The GAO auditor must keep abreast of these new developments and must alter survey and review techniques to meet these new challenges. Indications are that TPPC will be used extensively in future weapons system procurements. Hopefully,

our experience on the C-5A program will benefit others in GAO who will be reviewing these future programs.

### *Bibliography*

*Total Package Procurement Concept*, Robert H. Turle, May 1966.

*Total Package Procurement Concept, Synthesis of Findings*, June 1967, prepared by Logistics Management Institute.

*Aerospace Management*, General Electric Co., Spring/Summer 1967.

Fixed Price Incentive Fee Contract AF 33(657)-15053, dated October 1965.

*Defense Industry Bulletin*, November 1967