AD-762 431

BID AND PROPOSAL COST RECONNAISSANCE STUDY

Logistics Management Institute

Prepared for:

Department of Defense

May 1973

DISTRIBUTED BY:

NTIS

National Technical Information Service
U. S. DEPARTMENT OF COMMERCE
5285 Port Royal Road, Springfield Va. 22151

AD 762431

Reproduced by
NATIONAL TECHNICAL
INFORMATION SERVICE
U S Department of Commerce
Springfield VA 22151

UNCLASSIFIED

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author)

Logistics Management Institute
4701 Sangamore Road
Washington, D. C. 20016

2a. REPORT SECURITY CLASSIFICATION

UNCLASSIFIED

2b. GROUP

3. REPORT TITLE

Bid and Proposal Cost Reconnaissance Study

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)

5. AUTHOR(S) (First name, middle initial, last name)

6. REPORT DATE

May 1973

7a. TOTAL NO. OF PAGES

52

7b. NO. OF REFS

11

8a. CONTRACT OR GRANT NO.

SD-271

b. PROJECT NO.

SD-271-180

c.

d.

9a. ORIGINATOR'S REPORT NUMBER(S)

LMI Task No. 73-6

9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)

10. DISTRIBUTION STATEMENT

"A" Approved for public release; distribution unlimited.

11. SUPPLEMENTARY NOTES

12. SPONSORING MILITARY ACTIVITY

OASD(I&L)

13. ABSTRACT

The purposes of this reconnaissance study were to gain an insight into contractors' bid and proposal (B&P) activities, to examine the impact of Government policies on those activities, and to make recommendations concerning the desirability of additional study in this area.

The reconnaissance revealed that, on the whole, there are not the serious problems in contractors' B&P activity which the amount of controversy in the area would suggest.

The report discusses Government constraints on contractor B&P activity, such as negotiated cost ceilings and the requirement that such activity have potential military relevancy. The report also treats contractors' B&P policies, rationale, and criteria, as they influence the formulation of B&P budgets, proposals for Government versus commercial work, and specific bid decisions.

Except for the possible development of uniform criteria which would facilitate consistency in the negotiation of advance agreements on B&P costs, LMI believes that there is no significant potential for further study in the B&P area at this time.

DD FORM 1473

UNCLASSIFIED

Security Classification

BID AND PROPOSAL COST

RECONNAISSANCE STUDY

LMI Task 73-6

D D C
JUN 28 1973
B

May 1973

Prepared pursuant to Department of Defense Contract No. SD-271. Views or conclusions contained in this document should not be interpreted as representing the official opinion or policy of the Department of Defense. Except for use for Government purposes, permission to quote from or reproduce portions of this document must be obtained from the Logistics Management Institute.

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

LOGISTICS MANAGEMENT INSTITUTE
4701 Sangamore Road
Washington, D. C. 20016

SUMMARY

The purposes of this reconnaissance study were to gain an insight into contractors' bid and proposal (B&P) activities and to examine the impact of Government policies on those activities. LMI was also requested to make recommendations concerning the desirability of additional study in this area.

In conducting the reconnaissance, LMI visited some 30 Government offices and contractor plants and interviewed over 50 people. We collected B&P cost data on the Air Force Subsonic Cruise Armed Decoy (SCAD) Program competitions and visited contractors with a mix of business ranging from virtually 100% Government contracts to only commercial business. We wish to acknowledge with appreciation the cooperation of all of our study contacts.

The report presumes some reader familiarity with the Armed Services Procurement Regulation (ASPR) and recent recommendations of the Commission on Government Procurement—with respect to contractor B&P activities.

This reconnaissance revealed that, on the whole, there are not the serious problems in contractors' B&P activity which the amount of controversy in the area would suggest.

Other findings are:

- B&P cost ceilings negotiated in advance agreements are effective constraints, although not necessarily equitable. (page 11)
- Tri-Service Negotiation Groups do not deal consistently with contractors, but we found no immediate adverse effects of any significance because of such inconsistency. (page 9)

- The requirement in P. L. 91-441 that B&P costs must bear a potential relationship to a military function or operation to be reimbursed by the Department of Defense (DoD) needs clarification. To date it has caused some administrative burden, and it has not had any appreciable effect in reducing B&P expenses, although it is still too early to assess its full impact. (page 12)

- The differences between a Defense contractor and his commercial counterpart in making "bid/no-bid" decisions are not very great and can usually be attributed to the market conditions created by the buyer (Government or commercial firm). (pages 21-24)

- Defense contractors are motivated to segregate their Government and commercial business into separate profit centers for various reasons, not the least of which are Government contract requirements and administration. (page 20)

- Defense prime contractors competing for major weapon system contracts incur roughly 50% of their B&P costs prior to the issuance of a request for proposal (RFP). This fact should be considered before any decision is made to limit the number of contractors solicited to respond to RFPs. (page 15)

- It would be useful if the Government were to collect B&P cost data on programs in order to assess the impact or desirability of a policy which limits the solicitation of competition and, by implication, competition itself. (page 17)

Except for the possible development of uniform criteria which would facilitate consistency in the negotiation of advance agreements on B&P costs, LMI believes that there is no significant potential for further study in the B&P area at this time.

CONTENTS

		Page
SUMMARY		ii
Section		
I.	INTRODUCTION	1
II.	DISCUSSION	5
	A. Government Constraints on Contractor B&P Activity	5
	1. Advance Agreements on B&P Expenses	7
	2. Potential Relationship to a Military Function or Operation	11
	3. Number of Competitors for Defense Work	13
	B. Contractor B&P Policies, Rationale, and Criteria	19
	1. Contractors Visited by LMI	19
	2. Government and Commercial Market Places	21
	3. Formulation of B&P Budgets	22
	4. Proposals for Government versus Commercial Work	24
	5. Criteria Influencing Specific Bid Decisions	25
	6. Reasonableness of Defense Contractor B&P Costs	32
III.	CONCLUSION AND RECOMMENDATION	35

CONTENTS

Section

APPENDIXES

A. Task Order for LMI Task 73-6

B. Contractor B&P Costs on Selected Competitions

C. Five Year B&P, IR&D, and Sales Data - Major Defense Contractors

D. Development of Contractor's Weighted Average Share in Cost Risk (CWAS) for the Aggregate Business of 167 Reporting Divisions (77 Major Defense Contractors

I. INTRODUCTION

A. BACKGROUND

This task requested LMI to conduct a reconnaissance study into contractors' B&P policies, rationale, and costs. The purposes of the reconnaissance were to gain an insight into contractors' strategies and criteria with respect to their B&P activities and to examine the impact of Government and DoD policies upon those activities. Based on its findings, LMI was also requested to make recommendations as to the desirability of additional study in this area.

B&P costs are the administrative and technical overhead costs incurred by contractors in preparing, submitting, and supporting bids and proposals on potential Government or non-Government contracts.*

B. MAGNITUDE OF MAJOR DEFENSE CONTRACTORS' B&P COSTS

As a frame of reference, 167 reporting divisions of 77 major Defense contractors incurred $469 million in B&P costs during fiscal year 1972.** The DoD reimbursed those contractors for $304 million (or 64%) of those costs as allowable overhead on their sales to DoD of over $18 billion. The total sales to DoD ($18.4 billion) amounted to some 59% of the total sales (Government and commercial) of those reporting divisions, which were almost $31 billion.

---

*ASPR 15-205.3

**Data extracted from Defense Contract Audit Agency (DCAA) report, Independent Research and Development and Bid and Proposal Costs Incurred by Major Defense Contractors in the Years 1971 and 1972, March 1972, Cameron Station, Va.

The $469 million of incurred B&P costs represented 1.5% of the total sales of those 167 contractor profit centers.

The $304 million in B&P costs reimbursed by the DoD represented 1.7% of the contractors' sales to the DoD.

The 77 major Defense contractors constitute virtually all of the companies with which the DoD negotiates advance agreements upon B&P costs. Their sales to the DoD historically have represented a major portion of the DoD procurement budget.

C. SCOPE OF STUDY

This task was initiated by the Department of the Air Force, with the concurrence of the Office of the Assistant Secretary of Defense (Installations and Logistics).

We were specifically tasked to:

- Discuss B&P policies, practices, and rationale with selected Air Force prime contractors.
- Interview DoD Tri-Service Departmental Negotiation Groups concerning their B&P negotiations with Defense contractors.
- Analyze one or more selected awards to determine the relationship between B&P costs incurred by prime competitors and the price of the contract.

By mutual agreement with the Air Force, the scope of the reconnaissance was expanded to include meetings with contractors whose business is mixed (Government and commercial) or completely commercial—to obtain an understanding of their B&P policies, criteria, and rationale.

We were also requested to limit our attention to B&P activity since the related areas of contractor independent research and development (IR&D) and other technical effort had received sufficient attention. Limiting the reconnaissance

to B&P, however, would have rendered the study incomplete when addressing those circumstances where B&P is indistinguishable from IR&D. IR&D is, therefore, discussed where it is considered necessary to a more comprehensive treatment of B&P.

D. CONDUCT OF STUDY

In conducting the study, LMI:

- Reviewed pertinent literature—including reports of Congressional hearings, General Accounting Office (GAO) reports, the ASPR, Defense Procurement Circulars, and other Government and industry publications.
- Interviewed personnel from the Office of the Secretary of Defense (OSD), DCAA, Air Force Headquarters, industry associations, the Cost Accounting Standards Board, and the Commission on Government Procurement.
- Met with representatives of the Army, Navy, and Air Force Tri-Service Negotiation Groups.
- Collected and analyzed prime competitors' B&P cost data associated with contract awards on an Air Force program. Visited seven of those competitors.
- Visited eight contractors whose business is mixed or predominantly commercial.

E. ORGANIZATION OF REPORT

Section II of this report is a discussion of how Government policies and DoD constraints influence contractor B&P activities. Defense and commercially-oriented contractors' B&P policies, rationale, and criteria are also treated in Section II.

Our general conclusion and recommendation are presented in Section III.

The body of the report is followed by four appendixes.

Appendix A is a copy of the task order.

Contractor B&P costs associated with competitions for the Subsonic Cruise Armed Decoy (SCAD) Program and the B-1 Program development contracts are summarized and analyzed in Appendix B.

Appendix C presents major Defense contractor summary B&P, IR&D and sales data for the five year period from 1968 through 1972.

Appendix D develops the computation of a Contractor's Weighted Average Share in Cost Risk (CWAS) rating for the aggregate business of 167 profit centers of 77 major Defense contractors.

II. DISCUSSION

B&P expenses are at once both discretionary and mandatory for any contractor. In the overall view of a contractor's operations, B&P expenses must be incurred if the company is to compete for new business. The DoD recognizes that B&P expenses (1) are necessary costs of doing business, and (2) should be reimbursed to the extent that they are reasonable. Although B&P activity is essential to acquiring business, such activity is discretionary in that a contractor selects, from among alternative prospects, those opportunities he wishes to pursue, given various limiting constraints. Contractors are usually willing to incur B&P costs only on projects on which they believe they have some chance of winning contracts.

The policies, practices, and objectives of the Government and contractors with respect to B&P activities are discussed in this section of the report.

A. GOVERNMENT CONSTRAINTS ON CONTRACTOR B&P ACTIVITY

In formulating policies with respect to contractor B&P expenses, the Government is in somewhat of a dilemma. On the one hand, it is committed to encouraging maximum competition whenever practical. This policy costs money, but the increased cost of competition in terms of B&P expense is belived to be offset by obtaining the contract most advantageous to the Government. Furthermore, it is against public policy to exclude any responsible offeror from consideration. On the other hand, the Government perceives a need to protect itself from paying inordinate amounts of B&P expenses—which even the most prudent contractor might sometimes incur in going after a hotly con-

tested award. The Government recognizes that the conditions which influence (and provide safeguards in) a free market often do not prevail in Government procurement.

The DoD, with the encouragement of Congress, has addressed itself to this problem through ASPR provisions which place certain restrictions on contractors' B&P costs. Two such ASPR constraints are of primary interest in this reconnaissance. One is the requirement for certain contractors to negotiate advance agreements on ceilings which limit the amount of B&P (as well as IR&D) expenses which the DoD will reimburse as overhead. The second requirement limits the DoD's reimbursement to certain contractors for only those B&P costs incurred for projects which have a "potential relationship to a military function or operation".*

An example of how the requirements for ceilings and determination of potential military relationship are intended to operate may be helpful at this point. Consider a hypothetical contractor who estimates that he requires $1.2 million in B&P costs and another $2.5 million for IR&D. He expects to allocate both expenses equally between his DoD and non-DoD sales in a profit center because that 50-50 split represents his mix of business between DoD and other customers in that profit center. Since he exceeds the $2 million combined IR&D and B&P threshold, he submits

---

*ASPR 15-205.3 requires that an advance agreement, establishing a ceiling for B&P expenses for the subsequent fiscal year, be negotiated with contractors receiving in a fiscal year more than $2 million for IR&D and B&P in overhead, allocated to DoD contracts. Such allocated B&P expenses must have a "potential relationship to a military function or operation". Contractors with less Defense business generally have their B&P expenses regulated by formulas based on prior experience.

his plans to the DoD for its review and for negotiation. We will assume that he is successful in negotiating a ceiling of $1.0 million in B&P and $2.0 million for IR&D. Should he eventually incur $1.2 million on B&P, he may only recover $1.0 million of it by allocating it to his sales bases—the $1.0 million B&P ceiling precludes any additional allocation—unless he should happen to underrun his IR&D ceiling by incurring only, say, $1.8 million, in which case he is allowed to have his overrun in one account offset by a commensurate underrun in the other account. That is how ceilings operate. Continuing the example, let us assume our contractor incurred $1.2 million in B&P and $1.8 million in IR&D with $1.0 and $2.0 million in ceilings, respectively. He allocates half of his B&P or $600 thousand to DoD contracts and the other half to his other work because his mix of business during the year holds to the 50-50 split he estimated. Or audit, it is determined that $700 thousand of his $1.2 million in B&P were for projects judged not to have a potential relationship to a military function or operation. In that case, instead of the $600 thousand he otherwise would have been able to charge to his Defense contracts, he may charge only the $500 thousand of his $1.2 million in B&P which were for projects considered to have a potential military relationship. The two requirements for ceilings and potential military relationship determinations evolved independently of any objective criteria as to what constitutes "reasonableness" with regard to B&P costs.

1. Advance Agreements on B&P Expenses

In discussing the negotiation of advance agreements with Tri-Service Negotiators and contractors, LMI found little

uniformity in the process—probably because of a lack of uniform, objective criteria on which to base negotiations. Criteria which have influenced the amount of negotiated B&P ceilings include:

- Amount of burden applied
- Historical and projected sales
- Basis of allocation
- Amount of fixed-price business
- Level of the DoD procurement budget
- Potential military relevancy of proposals
- Mix of business
- B&P expense to sales ratio (a) compared to other years for the contractor; and (b) compared to the contractor's competitors
- Extent of sharing (but not from the first dollar)
- Business trends.

The extent to which each of these criteria influences the advance agreement is unknown. It is worth noting, however, that the DoD lacks one perspective which might be useful. That perspective would relate contractors' proposed B&P costs for anticipated major programs to those programs. Presently, such information on B&P cost planning is not available on a program basis.

Some of the comments made to LMI by various Government and contractor personnel experienced in B&P negotiations may illustrate the range of views on the subject:

- The ASPR notwithstanding, the Government implicitly and sometimes explicitly expects contractors to share (not be reimbursed for) a portion of B&P expenses.

- There seems to be a policy to force down B&P costs. Each year we get the same or less than the prior year. Even if we get the same amount, inflation means that it will fund fewer man-months of effort.
- We know of no policy to the effect that B&P costs should be reduced.
- We interpret that Congress intended a reduction of B&P expenses; otherwise, why have ceilings at all?
- If we don't spend B&P funds up to the ceiling, it could make the negotiator look bad. Certainly it would mean that we wouldn't get as much next year.
- We recognize that B&P ceiling agreements are a one way street and if the contractor has any commercial business in his profit center, it will subsidize to some degree B&P expenses incurred for Government proposals. We take that into consideration in reaching our negotiating position.
- If there is subsidizing of DoD proposals by other business, it is probably offset by the Government absorbing more general and administrative expenses than it should.
- B&P ceilings are too rigid considering our lack of ability to predict the availability of new business prospects 12 months in the future.
- B&P ceilings are not that bad—after all, one can underrun his IR&D ceiling if he needs more B&P effort (migration).
- The Government has too much leverage. It can force its position on us or else we are stuck with 75% of its position.
- We have to consider the reliability of contractor's data.

There is a degree of truth in each of the above comments. Tri-Service Negotiation Groups do not deal consistently with contractors, but we found no evidence of serious

inequities thus far. There is some evidence that some DoD Tri-Service negotiators are requiring Defense contractors to share in B&P costs, but that does not appear to be causing as much of a B&P recovery problem as are ceilings. Contractors are bearing more B&P expenses now than they did when there were no ceilings on B&P expenses. In fiscal years 1971 and 1972, the Government did not accept for allocation some $75 million in B&P costs incurred by the major Defense contractors—or an average of $37.5 million per year. For the five year period 1966-1970, when ceilings on B&P were not required, the Government did not accept for allocation an average of $15 million per year for virtually the same group of contractors.* For the 1963-1966 period, the figure averaged $6.5 million.

The question of migration of effort (e.g., from IR&D to B&P when sales are off) tends to be academic. Most contractors said that they would be able to foresee a need for more B&P emphasis sufficiently in advance to incorporate it in their B&P negotiations.

We were unable to determine whether DoD was, in fact, enforcing a "same or less than last year" absolute dollar B&P ceiling on contractors. While ceilings have gone up in 1972 over 1971, so has the amount of burden applied to B&P effort. In any event, the Government has been receiving more B&P effort in total than it has been paying for. Major Defense contractors as a group have overrun their ceilings on both IR&D and B&P for each of the last seven years.** Unaccepted B&P goes directly against profit and provides a strong motive for contractors to be judicious in

---

*Annual DCAA reports, Independent Research and Development and Bid and Proposal Costs Incurred by Major Defense Contractors, op. cit., 1966-1972.

**Ibid.

their expenditure of B&P funds.

LMI's assessment of advance agreements on B&P is that they are effective constraints, although not necessarily equitable.

On the other hand, LMI does not believe that contractors should be motivated to spend up to the ceiling solely for the sake of protecting next year's bargaining position. An inflexible ceiling, based in part on past experience, can encourage such action.

We believe that the DoD should permit appropriate adjustments (upward or downward) to ceilings during the year, as warranted by actual business experience. Another possibility would be for the Tri-Service Groups to negotiate a range consistent with industry norms rather than a fixed amount for B&P. The company would be able to operate within the range from year to year but be expected to be within the midpoint of the aggregate of the ranges over, say, a five year period. Hence a contractor would not be motivated to spend up to his ceiling each year just to protect the next year's ceiling.

2. Potential Relationship to a Military Function or Operation

Section 203 of P.L. 91-441 provides that B&P costs of contractors required to negotiate ceilings must have a potential military relationship (PMR) in order to be reimbursed through DoD contracts. Since this potential relationship can be assessed only after the fact and since some companies are just now having their 1972 fiscal years audited—when the PMR rule first had complete application, it is still too soon to determine the requirement's real impact. However, some com-

panies are apprehensive. For one thing, there is little agreement as to just what constitutes a potential relationship to a military function or operation. Some DoD personnel would condition PMR on whether the recipient of the proposal was a military department (a proposal to the Navy would qualify; one to the Federal Aviation Agency would not). Others would be guided more by the product proposed (an aircraft engine would qualify but a computer terminal would not).

Other effects of the PMR requirement worth noting are:

- It prevents the larger defense contractors—those required to have ceilings—from proposing non-PMR projects to other Government agencies and allocating the proposal cost to DoD work. The converse of charging other Government agencies with the cost of DoD proposals is acceptable.
- It encourages companies to segregate their Government and commercial business into separate profit centers.
- It adds to the administrative burden and costs of the procurement process.
- It has been considered inconsistently in B&P negotiations. Some negotiators eliminate what they consider to be non-PMR items prior to negotiating while others negotiate first and then look to see if any non-PMR effort 'spilled over' into DoD sales.

To date, the PMR requirement does not appear to have saved any money. DoD officials have stated that the PMR provision has had no effect on the ceiling negotiated with any contractor during either 1971 or 1972. The GAO found that the PMR requirement has not had the effect of reducing reimbursements to Defense contractors for their IR&D and B&P expenditures.*

---

*GAO Report B-167034, Payments for Independent Research And Development And Bid And Proposal Costs, 16 April, 1973, Washington, D. C., p. 34.

LMI believes that the DoD might be able to persuade the Congress to reconsider the PMR requirement based on

- The lack of clarity as to what should constitute a potential military relationship
- The increased administrative burden it has created without receiving offsetting benefits
- The recommendations of the Procurement Commission which call for a potential relationship to a function or operation of any federal agency with which the contractor does business.

In the meantime, we recommend that the mechanics of the application of PMR during B&P ceiling negotiations be made consistent. We believe that the total B&P pool should be allocated between a contractor's DoD and non-DoD business before PMR is assessed against the DoD's portion of B&P costs.

3. Number of Competitors for Defense Work

DoD personnel tend to encourage a maximum number of contractors to compete for negotiated, competitive procurements. On the 1972 SCAD Program development contract competitions, for example, the Air Force solicited 63 contractors for six awards.* Thirty-two contractors attended the bidders' conference, and 17 responded to the RFPs.

As part of this task, LMI decided to explore the feasibility of a policy providing for the solicitation of only the most highly qualified potential contracting sources—with the objective of conserving B&P (and related IR&D) funds.

---

*See Appendix B.

The Commission on Government Procurement has recommended that the statutory provision on solicitation in competitive procurements other than formal advertising be adjusted to provide for: (1) soliciting a competitive rather than a "maximum" number of sources; (2) the public announcement of procurements; and (3) honoring the reasonable requests of other sources to compete.*

The Commission's report discusses the problem:

> Under 10 U.S.C. 2304(g), solicitation of proposals is required "from the maximum number of qualified sources consistent with the nature and requirements" of a procurement. Translating this requirement to practice poses a vexing problem.
>
> R&D procurements, probably more than any other, embody the two characteristics which give rise to the problem; namely, a large number of firms seeking Government contracts and relatively complex proposals which are costly to prepare and evaluate. Under these circumstances, total solicitation costs may exceed the value of the contract. Moreover, most R&D procurements seek innovative ideas and frequently cannot be considered as essentially cost or price competitive. Therefore, the participation of a maximum number of firms does not necessarily ensure minimum costs to the Government, a primary purpose of the statute. Participation by a "maximum" number of firms in such situations may unduly complicate the selection process and add considerably to both the procuring agency's and the offerors' costs.

---

*Report of the Commission of Government Procurement, December 1972, U. S. Government Printing Office, Washington, D. C., Volume 1, p. 22.

> Several agencies now interpret the statute to permit limiting the initial issuance of requests for proposals (RFPs) to a reasonable number of firms deemed most competent. Others are reluctant to follow this practice. They believe a blanket issuance of the RFP and the evaluation of all proposals is easier, safer, and possibly less costly than attempting to justify a limited solicitation.*

Limiting solicitation to those contractors considered most competent may be a sound concept and would indeed conserve B&P (and related IR&D) funds and reduce proposal evaluation costs to the DoD. It would also relieve contractors from making "bid/no-bid" decisions; they would probably always bid when invited to do so and complain if they thought they were not invited as often as they should be. One important fact complicates the implementation of the concept, however, and should not be overlooked. That fact is that some 50% of incurred B&P costs associated with a DoD competition for a major weapon system development contract is usually incurred long before (during the four or five years prior to) issuance of the RFP. For that reason, maximum savings from the limitation of sources will not be realized unless the restriction is imposed at a very early point in time—during the early conceptual effort (or "program initiation" phase) of the acquisition process.

B&P cost data on the SCAD and B-1 development competitions illustrate the point.

We collected B&P costs associated with the SCAD Program development competitions from 14 of the 17 bidders

---

*Ibid., pp. 22-23.

(three declined to provide data). Those costs totaled $11 million. Ten of the 14 contractors incurred B&P costs on the SCAD Program long before the development RFPs were issued. Those costs were incurred as early as 1968—four years before the RFPs. Of the total of $11 million in incurred B&P costs, 63% (or $6.9 million) was incurred prior to the date of the RFPs.

In the case of the B-1 Program development contract competitions, 44% of total prime competitor's B&P costs was incurred prior to the date of the RFPs (commencing five years before RFP issuance).*

We were repeatedly advised by Defense contractors that it is absolutely imperative that they commence B&P activity on an anticipated RFP long before its issuance—or there is little point in bidding at all. Defense contractors are permitted to set up B&P accounts associated with anticipated major RFPs years before RFP issuance, and they do so.

For that reason, any limitation upon the number of sources which are to be solicited must be made at an equally early point in time—so early, in fact, that it may be difficult to determine just which potential sources are to be judged most qualified.

We believe the Procurement Commission's related recommendations on the public announcement of procurements and for honoring the reasonable requests of other sources to compete need some restrictions if they are to be effective.

---

*Appendix B, pp. 4-6.

Some sanction would have to be imposed upon an uninvited offeror who does decide to compete against contractors declared to be most qualified. One solution would be an ASPR provision that B&P costs incurred by such an uninvited offeror on that competition will not be allowed or reimbursed by the DoD unless he wins the competition. There is ample backing for this sanction in the ASPR principle of "reasonableness". Clearly, a prudent businessman would not incur costs for a project when the customer has already decided that other contractors are considered to be more qualified.

A related point—already alluded to (page 8)—is that the DoD does not collect B&P cost data on a program basis so that the total amount industry spent in the competition could be determined. It would seem that such information would be necessary before the DoD could formulate a position as to the impact or desirability of a policy which limits the solicitation of competition, and by implication, competition itself. Although it would appear that the cost of collection of B&P cost data by the program office would not be significant, a few tests would show whether the cost would be worth the benefits derived from obtaining the B&P data. In any case, without information as to industry's B&P funding experience for given programs, DoD is not in a position to make any judgment as to whether a future program justifies the amount of B&P effort which industry is likely to expend on it or whether even more B&P effort should be encouraged.

Had this information been systematically collected by DoD on the SCAD program, for example, it would have shown that contractors would spend in excess of $11 million in B&P.*

---

*Appendix B.

Though it could not have been foreseen, had the SCAD competitions been limited to only the winner and the one other contender who spent the most on B&P, the total B&P costs would have been reduced by less than 8 percent. While we have no evidence which suggests that the SCAD competitions are typical, it is just that lack of evidence which prompts us to suggest the usefulness of DoD collecting B&P data on a program basis.

LMI makes no recommendation concerning limiting the solicitation of competition in this report. We do offer this perspective, however. Reflecting on the $304 million in B&P costs which DoD paid to its largest contractors in 1972,* it should be pointed out that B&P costs bear overhead (though not G&A) just as if each project were a contract. Most of those overhead costs would tend to continue and be reallocated to DoD contracts even if there were no B&P activity. A conservative estimate would put the continuing overhead costs at $114 million out of the $304 million B&P costs reimbursed by DoD last year. The question can then be asked whether competition in 1972, in the form of proposals from DoD's largest contractors, doing $18.4 billion in sales to DoD that year, was worth $190 million in terms of B&P costs. Even that figure of $190 million is somewhat misleading because of the following influences:

- It costs a company B&P money to prepare proposals in response to sole source requests for proposals.

---

*Appendix C.

- It costs a company B&P money to submit unsolicited proposals.
- A company may incur B&P expenses in the process of finding out enough about a requirement to intelligently determine not to bid.
- Roughly 50 percent of B&P costs are incurred prior to receiving an RFP in order to orient a company's technical effort toward satisfying the requirements of the anticipated contract, and that activity would be necessary in any event.

We were unable to determine the amount of B&P costs which could be associated with the above influences, but we believe them to be substantial.

B. CONTRACTOR B&P POLICIES, RATIONALE, AND CRITERIA

1. Contractors Visited by LMI

LMI visited 15 contractors during this reconnaissance.

We met with seven contractors (representing nine bidders) who submitted proposals on the SCAD Program competitions.* The seven are engaged in the following manufacturing areas: one aircraft, one aircraft engine, one navigation/guidance systems, and four electronics systems. In each case, the contractor we visited has organized a separate profit center for Government work. Sales to the DoD by the seven companies for contractor fiscal year 1971 ranged from 74.8% to 99.5% of their total profit center sales—averaging 89% of total profit center sales. A similar sales ratio existed for seven of the other eight SCAD competitors with which we corres-

---

*Appendix B summarizes and analyzes contractor B&P costs associated with competitions for the SCAD Program development contracts.

ponded—whose fiscal year 1971 sales to the DoD averaged 72.5% of total sales.

The SCAD Program competitors are illustrations of the tendency of many corporations to establish separate profit centers for their Government and for their commercial work. Factors cited as motivating corporations to set up separate profit centers include:

- The controls and administrative burdens associated with Government business.
- The application of the cost principles (Section 15) of the ASPR—including the provisions relating to B&P costs.
- The conviction that the technical complexities of Government work are such that the Government and the commercial arenas represent "two different worlds" (television sets are vastly different from electronic countermeasure equipment) and should be organized and managed separately.

Although beyond the scope of this reconnaissance, LMI makes the above observation as to the motivation of corporations to establish separate profit centers because the tendency is inconsistent with the philosophy which argues for the combination of Government and commercial business—to obtain the benefits of greater cost consciousness, common management, technical cross feed, and joint utilization of personnel and facilities.

LMI also visited four contractors whose business is mixed (Government and commercial)—two aircraft manufacturers, one aircraft component/rapid transit company, and one shipbuilding firm.

Finally, we visited four contractors whose business

is predominantly or completely commercial—two construction firms and two petrochemical processing plant contractors.

2. Government and Commercial Market Places

The purpose of our interviews was to discuss Defense and commercial contractors' B&P strategies and criteria—which should be viewed in the perspective of the market places in which those contractors operate. This perspective is especially important because it is extremely difficult to find a commercial industry which permits a true comparison between its contractors and Defense contractors. In the first place, the marketing strategy of the typical commercial firm is to try to develop a demand for its products or services. In the DoD market place, the Defense contractor tries to convince the DoD that its needs will be satisfied best by awarding the contract to his firm. Other factors which characterize the DoD market place include:

- There is only one buyer, so that there is a much higher incidence of repeat business. This prospect of repeat business works to the Government's advantage.
- The relationship between buyer and seller tends to be structurally more rigid. In the commercial market place, formal regulations and specifications often give way to unwritten understandings based on mutual trust and respect. A firm's reputation appears to count for more in the commercial arena than in Government procurement.
- The attitudes of Defense contractors and Government procurement officials at times seem to reflect an adversary relationship

between the two. In commercial endeavors, the attitudes of buyer and seller often tend to reflect a mutually supportive relationship.

- In the commercial market, there may be several opportunities to bid at any given time. If a contractor is not successful today, there is always tomorrow. The competition is different in the Defense market place. Since DoD contracts for major systems infrequently, the next opportunity for a Defense contractor to bid may be months or years away—and he may not be around by then if he is not successful on the current competition.

Another important distinction between the two market places is that Defense contractors encounter the bulk of the technological risk and associated cost uncertainty after the sale, whereas commercial contractors usually face those risks prior to the sale.

3. Formulation of B&P Budgets

a. Defense Contractors*

In the case of Defense contractors, proposed annual B&P budgets are formulated at the profit center and reviewed and approved by corporate headquarters. The proposed budgets are highly structured and are based upon identified "targets of opportunity"—known or firmly anticipated RFPs to which the center plans to respond.

---

*Hereafter in this report, we use the term "Defense contractors" to cover contractors whose business is predominantly with the DoD and who are required to negotiate advance agreements on B&P ceilings. We use the term "commercial contractors" to describe contractors whose business is mixed or predominantly commercial.

Negotiations are conducted (at corporate or profit center level) with the Tri-Service Departmental Negotiator to arrive at an advance agreement as to the total B&P costs the DoD will accept as allocable to all of the contractor's business, as well as the estimated DoD share of the negotiated ceiling.

Copies of the advance agreements are provided to the contract administration services office which has cognizance of the plant and to the appropriate DCAA office.

Defense contractors' actual versus budgeted B&P expenditures are often monitored by local DoD representatives, and the contractors are sometimes expected to justify major deviations from their plan, although the DoD recognizes the need for flexibility in the area—since expected proposal opportunities frequently fail to materialize and unanticipated opportunities sometimes appear.

b. Commercial Contractors

In contrast, most commercial contractors do not establish discrete B&P budgets. Their proposal activities are usually included in their marketing budgets and are not forecast with the precision required of Defense contractors. No separate B&P accounts for Government and commercial proposal activities are established.

Usually, commercial contractors do not organize a special team to prepare a proposal, although key personnel are often identified as a major selling point. The effort is performed as though it were part of an employee's

day-to-day functional work and is not separately charged to the proposal. There is a considerable amount of indirect labor associated with the preparation of proposals, but those costs are not separately identified as such.

Proposal costs are usually included in marketing costs, which are recovered as overhead on current sales. But there is flexibility here also. Some firms try to make agreements with their customers whereby there is no cost for the proposal if they are successful—otherwise, they are reimbursed for the cost of the proposal up to some predetermined amount. Also, commercial firms can often deliberately underapply overhead on one contract bid and overapply it on another.

4. Proposals for Government versus Commercial Work

Contractors who have a mix of Government and commercial business advised LMI that proposal activities associated with commercial work are less costly than proposals for Government business. They hastened to add, however, that commercial business is not less competitive than Government business. They also stated that they will pursue both commercial and Government business opportunities—within the constraints of their work load and proposal resources. Faced with a decision whether to go after a Government versus a commercial award, however, they would seek the commercial business.

The major reasons for such a preference are:

- The complex and detailed technical specifications and data requirements associated with Government work.

- The formality implicit in dealing with the Government, as contrasted with the informality of the commercial market place.
- The management surveillance and administrative burdens imposed by the Government upon a winning contractor.

We should add, however, that contractors are seldom forced to decide whether to go after a commercial instead of a Government award. While they may have some preference for commercial work, they usually are also interested in Government work—for both monetary and other reasons.

5. Criteria Influencing Specific Bid Decisions

Having noted some of the differences between Defense and commercial contractors, we tried to identify differences in the ways they determine whether to compete for new business. Our finding is that the two are more alike than they are different. Those differences which do exist are more attributable to the different customers' desires (Government and commercial firms) than they are attributable to any inherent policies or strategies of the contractors. We found that there is no universal, standard set of criteria which different contractors use as a guideline in making specific "bid/no-bid" decisions. Proposal decisions are made on a case-by-case basis and are influenced by many factors. The weight given to any single factor will vary from case to case. Some companies do have formal, written proposal decision guide lines, which they temper with management judgment in each specific situation. Other contractors make their decisions on a completely subjective basis. Some of the factors which come into play in reaching a bid decision are discussed below.

a. Likelihood of Making a Profit

The profit potential of a business opportunity is always a key consideration. Both Government and commercial contractors interviewed by LMI stated that profitability is often the primary criterion and that they do not bid unless they perceive a reasonable opportunity to make a profit on a contract award.

In the past, it was not uncommon for a Defense contractor to "buy in" by submitting an unrealistically low bid—in anticipation of turning a loss into a profit through contract changes or follow-on production awards. This practice is not unknown in the commercial world, but it appears that it is not prevalent today in either commercial or Defense business. Defense contractors advised LMI that they would not submit a proposal knowing they would lose money in the event of contract award—in part because of the uncertainty of a follow-on. Commercial firms see "buying in" as a questionable business practice requiring strong compensating justification.

b. Dollar Magnitude of Instant Award

The dollar value of the anticipated instant contract award is usually an important factor. In fact, this figure often determines the management level at which the ultimate bid decision will be made.

Some companies use the dollar value of the instant award as an indicator of the amount of B&P funds to be expended on the proposal; one Defense contractor, for example, uses a rule of thumb under which $1 in B&P funds may be spent for every $65 of expected contract price.

In rare cases, the anticipated award can be so large as to remove companies from the competition. One of the commercial contractors we visited, for example, advised that they decided not to bid on a job which was so huge that it would effectively have taken the company out of its usual market place for a period of years. They believed they would lose too much in the way of goodwill and contacts with their current customers if they were to devote virtually all company resources to one contract over an extended period of time. Sometimes, an extremely large job will lead contractors to form joint ventures before they will bid. This is not too different from Defense contractors lining up their first tier subcontractors for a proposal.

c. Production Follow-On Potential

The anticipated magnitude of possible production follow-on contracts is another important factor—especially with Defense contractors. Commercial contractors are not as influenced by such a prospect, since orders for additional work usually must be derived from customers other than the original source. The likelihood of a large production follow-on will usually heavily influence a Defense contractor's decision to compete for an award for the development of a system which ultimately is to be produced in quantity.

d. Availability of Proposal Manpower and Funds

The availability of appropriate personnel and funding to mount a proposal is another factor—especially with commercial contractors. Since they usually do not set up spe-

cial proposal teams, the talent to prepare a proposal must come from personnel who may already be fully occupied with current work. But once a decision to bid has been made, additional manpower and funds over the amounts budgeted can be and often are made available.

Proposal manpower constraints do not appear to be as significant a factor for Defense contractors. Some Defense contractors have special organizations solely dedicated to writing proposals; others treat each effort as a project and set up a special team to prepare the proposal. Those dedicated proposal staffs suggest that some DoD contractors might be more likely to work on a marginal prospect as "make-work" in anticipation of an imminent and important RFP than they would be to lay off the staff only to rebuild it at a later time.

a. Likelihood of Success

Some contractors attempt to assess their "likelihood of success" in winning the instant award. Standards employed include such guide lines as:

- Do not bid unless there is a very strong expectation that the company will be one of the top three in the competition.
- Assign a "probability of win" percentage (30%, 90%) to each prospective proposal; use this percentage as a guide line but not as a firm constraint in making bid decision.

Some contractors with a mix of business advised LMI that their "win ratio" is better on their commercial work. At least one Defense contractor stated that it is difficult to predict whether it will win or lose DoD competitions.

Commercial contractors which LMI interviewed said that the informality and fast communication channels of the commercial world enable them to obtain some insight into their likelihood of success. While they have some sole source business, it is not a significant factor in their planning. It did not appear that they enjoyed any more sole source contracts than did DoD contractors—if indeed as much.

f. Work Load Backlog

A company's current and projecte work load backlog can be a factor. A commercial contractor with a large work load—occupying his key personnel and facilities—may not have the capacity to perform additiona' :ork and may reduce his marketing and proposal activities. A Defense contractor may find itself in a similar situation.

The existence of a backlog does not always operate as a constraint, however. One Defense contractor told LMI that top management had decided to intensify its proposal activities in the face of the highest backlog in company history. A commercial contractor stated that a high backlog can operate to bring in unsolicited new business—through the visibility provided the company by its performance of current work.

g. Number and Competence of Competitors

All contractors consider the number and technical competence of their competition when making proposal decisions.

Typically, there are fewer competitors in the commercial arenas we explored (aircraft, ships, and large construction jobs) than there are on major Defense competitions.

Commercial contractors advised that their customers usually are selective in soliciting possible sources—and will solicit only two or three for a major job. As already noted, Defense procurement officials often solicit a maximum number of potential sources.

h. Technical Complexity of Work

The technical complexity of the work to be performed can be a factor. If a company believes that it has a great degree of technical competence in the area, the tendency is to compete. If the proposed work is in an advanced but related area of technology, it can be even more attractive, because it presents an interesting challenge to the engineering talent of the firm, as well as an opportunity to obtain a reputation for company expertise in that technical area.

i. Familiarity With Customer's Requirement

The knowledge a contractor has with respect to the customer's requirement is a criterion—especially for Defense contractors. We have already noted that Defense contractors are reluctant to bid on a "dark horse"; if they are not familiar with and have not been working on the requirement long before the RFP is issued, they will seldom bid.

To a lesser degree, commercial contractors also find this factor to be important. The commercial arena is characterized by less formality than the Defense world, however, and a commercial contractor will often work directly with the prospective customer to define the requirement. If he "knows" his customer from prior jobs, he is usually more confident in his decision to bid.

j. Diversification Policy

Some contractors have a policy to diversify their bases of business by entering into new product or technical areas or by obtaining new customers, or both. Successful diversification can bring about the benefits of stability, a leveling of the business cycle, and a reduction in fixed overhead rates. In general, when a decision to bid has been made by either Defense or commercial contractors, because of diversification objectives, the recovery of the attendant B&P expenditures is only an incidental consideration. The more crucial factors in contemplating a diversification policy appear to be timing and a careful assessment of business trends.

k. Availability of Financing

Whether funds are or can be made available to finance contract performance is certainly a factor—not only from a cash flow viewpoint but also with respect to the source of financing. In some endeavors, it is the paramount consideration in the bid decision. A policy of restricted progress payments on the part of a customer operates in favor of the more financially able, although not necessarily the more technically competent, competitor.

Other criteria influencing specific bid decisions include the degree of subcontracting anticipated, time allowed for proposal submission, proposal evaluation criteria, the bases for making the award, and the type of contract contemplated. Two other circumstances may prompt the submission of a proposal—the "courtesy" bid and the unsolicited proposal.

l. Courtesy Bids

When a contractor has done and plans to do work

for the same customer over a period of time, he is sometimes requested by that customer to propose, in the words of a contractor, a "courtesy" bid. Those bids range in comprehensiveness from an informal estimate given to the customer so that he can plan his capital budget to formal proposal submissions enabling the customer to document a "competition", although the contractor has no expectation of winning. While the informal quotations are routine, contractors are very reluctant to prepare formal proposals for any customer if they think that it is just an exercise with no chance of winning. In those cases, at least the commercial contractor is likely to require reimbursement for his proposal effort.

m. Unsolicited Proposals

Both Defense and commercial contractors will, from time to time, prepare a proposal outlining an idea for a project which they believe to be of interest to a potential customer. These unsolicited proposals might account for 25% to 30% of the number of proposals a firm prepares, but, in terms of B&P dollars, they are relatively insignificant. They are generally unpriced outlines of concepts developed without the usual input of engineering man-hours for detailed drawings and specifications. Most of the people we interviewed saw them as worthwhile vehicles of communication which often enough materialized in a sale.

6. Reasonableness of Defense Contractor B&P Costs

One of the most difficult aspects of a contractor's costs to come to grips with is that of "reasonableness." Its elusiveness has prompted the DoD to adopt a technique known as the Contractor's Weighted Average Share in Cost Risk (CWAS)*.

---

*ASPR 3-1000, et seq.

The idea behind the CWAS system is that when a contractor's mix of contracts provides enough risk that he is motivated to conduct his business prudently and with maximum economy, the Government can reduce its involvement in the contractor's operations. A measure of that risk is the amount of fixed price and commercial business a contractor has in relation to the total business in his profit center.

In accordance with P.L. 91-441, the ASPR does not allow the CWAS technique to be applied in accepting the reasonableness of a contractor's B&P expenses if he received from DoD in excess of $2 million for B&P and IR&D allocated to DoD contracts during the prior fiscal year. Instead, that contractor must negotiate a ceiling. The ASPR does allow the CWAS method to be used in determining B&P reasonableness for all smaller contractors which have received a CWAS rating. (Those smaller contractors without a CWAS rating have their B&P expenses regulated by a formula using historical B&P averages and current sales.)

For B&P (and other cost items), the ASPR cites a CWAS rating of 65 points or higher, 35 points or more of which rating were derived from competitive firm fixed-price contracts or commercial sales, as the threshold above which the reasonableness of the costs will not be questioned, absent fraud or similar abuses. Additionally, a CWAS rating of 50 to 65 points will allow the administrative contracting officer, at his discretion, to accept the reasonableness of the costs without question.*

---

*ASPR Sec. 15-201.3.

As an attempt to establish another perspective from which B&P could be viewed, LMI undertook to estimate, however roughly, the CWAS rating of 167 profit centers (reporting divisions) of major Defense contractors in the aggregate, as if they were one huge profit center. This group includes all profit centers for which B&P ceilings were negotiated in 1971 and 1972 but excludes the commercially oriented profit centers of those contractors.

While we concede that our data permit only the crudest approximations, and those approximations are based on equivalency assumptions which not everyone would allow, we nevertheless believe the result to be a useful indicator of the general motivation of major Defense contractors concerning B&P expenditures. For fiscal years 1971 and 1972, the CWAS rating for the aggregate business of 167 reporting divisions of the largest Defense contractors was roughly 66 and 67 points, respectively.*

While we cannot conclude from this calculation that the Government should now abandon ceilings on B&P costs, we can infer that much of the Government's concern about contractor B&P activity may be misplaced.

---

*See Appendix D for development of the aggregate CWAS rating.

III. CONCLUSION AND RECOMMENDATION

The Procurement Commission has characterized B&P (and IR&D) as a very controversial and often emotional topic which, in recent years, has been blown out of proportion to its importance as a cost item relative to other costs.* We concur. The amount of money to be saved if there were no B&P at all is, in our judgment, not significant in view of the benefits which the Government derives from having competition.

We do believe, however, that there are a few things which the DoD might do to improve the present B&P environment—specifically in the area of consistency among individual negotiations. We would recommend that work be done to develop uniform criteria on which to base B&P negotiations. Implicit in such criteria would be a procedure for the consistent treatment of PMR.

Beyond that, LMI does not see any payoff from further study in the B&P area. For one thing, the dollar magnitude, as noted earlier, is relatively small. Perhaps more to the point is the practical assessment that any recommendations emanating from additional study would probably be beyond DoD's ability to do anything about because of the requirements of the present law. If the Congress should change the law, it is likely to do so because of the several recommendations which the Procurement Commission has already made in this area.

For these reasons, LMI does not recommend additional study in the B&P area at this time.

---

*Report of the Commission on Government Procurement, op.cit., pp. 32-33.

COPY

ASSISTANT SECRETARY OF DEFENSE
Washington, D. C.

Installations and Logistics DATE: 29 August 1972

TASK ORDER SD-271-180
(Task 73-6)

1. Pursuant to Articles I and III of the Department of Defense Contract SD-271 with the Logistics Management Institute, the Institute is requested to undertake the following task:

A. TITLE: Bid and Proposal Cost Reconnaissance Study

B. SCOPE OF WORK: LMI will conduct a reconnaissance study into contractors' bid and proposal (B&P) costs. The reconnaissance will include:

1. Discussions with selected Air Force prime contractors on their B&P policies, practices and rationale on such matters as the criteria employed in deciding to compete for Government vs. commercial work, the level of B&P effort to be undertaken in the face of increased vs. decreased business, and current accounting practices on the allocation of B&P costs.

2. Interviews with DoD Tri-Service Groups to determine the consistency with which they deal with those contractors and similar companies with respect to the reasonableness of B&P ceiling amounts and evaluation of the P.L. 91-441 requirement of military relevancy.

3. An analysis of one or more selected awards to determine the relationship between B&P costs incurred by prime competitors and the price of the contract.

COPY

2. SCHEDULE: LMI will submit a report covering the findings of the reconnaissance, including recommendations as to the desirability of additional study in this area, by 31 May 1973.*

/s/ Hugh McCullough

ACCEPTED /s/ William F. Finan

DATE 29 August 1972

*As extended from 31 January 1973.

CONTRACTOR B&P COSTS ON SELECTED COMPETITIONS

A. SUBSONIC CRUISE ARMED DECOY PROGRAM COMPETITIONS

1. Contract Awards

LMI was tasked to analyze one or more selected awards to determine the relationship between B&P costs incurred by prime competitors and the price of the contract. In coordination with the Department of the Air Force, we selected the Subsonic Cruise Armed Decoy (SCAD) Program competitions for this purpose. The SCAD is a decoy being developed for the B-52 bomber.

In 1972, the Air Force awarded six development contracts on the SCAD Program. One contract was awarded on a sole source basis; the others were competed. In total, 63 contractors were solicited, 32 attended the bidders' conference, and 17 responded to the requests for proposals (RFPs).

The SCAD System Program Office provided LMI with the following breakdown on the awards:

1972 SCAD Program Contract Awards

Award	Contract Price (In Millions)	Number of Contractors Solicited	Number of Bidding Contractors
Airframe	$ 66.6	7	2
Decoy Electronics	14.2	24	5
Navigation/Guidance	5.2	26	6
Engine (two awards)	4.4 3.0	5	3
Carrier Aircraft Equipment (sole source)	43.4	1	1
Totals	$ 136.8	63	17

The dates of issuance of the RFPs, submission of proposals, and awards were as follows:

Award	RFP Issuance to Proposal Submission	Proposal Submission to Date of Award
Airframe Decoy Electronics Navigation/Guidance	14 Feb-27 Mar 72 (6 weeks)	28 Mar-7 Jul 72 (15 weeks)
Engine	14 Feb-30 Mar 72 (7 weeks)	31 Mar-31 May 72 (9 weeks)
Carrier Aircraft Equipment (sole source)	16 Feb-10 Mar 72 (3 weeks)	11 Mar-15 Jun 72 (13 weeks)

2. Contractor B&P Costs

LMI visited seven of the SCAD Program competitors—which represented nine of the 17 competitors (one contractor bid on three RFPs). We talked by telephone and corresponded with the other eight competitors. Three of the companies declined to participate in the study.

We collected B&P cost data associated with the SCAD Program competitions from 14 of the 17 competitors. We requested the companies to estimate the amount of their incurred B&P costs which was recoverable from the DoD as allowable overhead. The B&P costs are burdened—including not only all direct costs but also all allocable indirect costs except general and administrative costs.*

---

*ASPR 15-205.3(b) requires burdening of B&P costs.

We collected cost data for three periods of time:

- Date of RFP issuance to date of proposal submission.
- Date of proposal submission to date of award.
- Prior to date of RFP issuance—from 1968 to 14 February 1972.

The B&P costs are understated to some extent because of the unavailability of data from three of the 17 competitors.

Contractor B&P Costs on SCAD Program
(In Millions)

Time Frame	Incurred B&P Costs	Recoverable from the DoD
RFP to Proposal Submission	$ 3.4	$ 2.7
Proposal Submission to Award	.7	.6
Subtotals	$ 4.1	$ 3.3
Prior to Date of RFP	6.9	5.8
Totals	$ 11.0	$ 9.1

3. Analysis of Cost Data

The $11 million in B&P costs represent 8% of the total dollar value of the six SCAD Program development awards—3% from RFP issuance to award and 5% prior to RFP issuance. Total B&P costs on each of the six awards ranged from .2% to 23% of the contract price.

Of the total $11 million in incurred B&P costs, 37% ($4.1 million) was incurred from the date of issuance of the RFP to date of contract award, and 63% ($6.9 million) was incurred prior to the issuance of the RFPs.

Of the $4.1 million in B&P costs incurred from the date of the RFP to contract award, 83% ($3.4 million) was incurred from the date of RFP issuance to date of proposal submission, and 17% ($.7 million) was incurred from proposal submission to date of contract award.

The 14 competitors estimated that 83% ($9.1 million) of their SCAD Program B&P costs was recoverable from the DoD. For individual competitors, the percentage of DoD reimbursement ranged from 37% to 100%. Non-reimbursement can be attributed to allocation of part of the B&P costs to commercial sales or to penetration of B&P cost ceilings.

Other points which emerged from our analysis of the B&P cost data from the 14 competitors were:

- Four of the 14 competitors did not set up B&P accounts identified to the SCAD Program competitions until the date of issuance of the RFPs; any SCAD proposal effort of those competitors prior to the RFPs was charged to some other account—probably IR&D.
- The $11 million in total incurred B&P costs, which represent 8% of the total dollar value of the instant SCAD development contract awards, reduce to about 1.2% if viewed as a percentage of total anticipated development and production SCAD Program costs. That percentage is consistent with overall Defense industry statistics, where B&P costs range from 1.0% to 1.5% of total sales.

B. B-1 PROGRAM COMPETITIONS

As part of a previous study, LMI collected contractor B&P costs associated with competitions for the B-1 Program development contracts.*

---

*See LMI report, Contractor Costs During Proposal Evaluation and Source Selection, B-1 Program, LMI Task 71-2, August 1971, Washington, D. C., AD 730499.

The B-1 competitions we reviewed resulted in two awards (one airframe, one engine) totaling $1,757 million.

There were five prime competitors (three airframe, two engine) which submitted proposals in response to the RFPs. There were also two avionics companies which incurred B&P costs on the B-1 Program.

We collected B&P costs on the B-1 competitions from the seven prime competitors and requested them to estimate the amount of their incurred costs which was recoverable from the DoD.

Contractor B&P Costs on B-1 Program
(In Millions)

Time Frame	Incurred B&P Costs	Recoverable from the DoD
RFP to Proposal Submission (11/3/69-2/9/70) (14 weeks)	$ 19.1	$ 9.6
Proposal Submission to Award (2/10-6/5/70) (17 weeks)	16.7	7.8
Subtotals	$ 35.8	$ 17.4
Prior to Date of RFP (1964-1969)	28.0	13.6
Totals	$ 63.8	$ 31.0

The $63.8 million in B&P costs represent 3.6% of the total dollar value of the two B-1 Program awards—2% from RFP issuance to award and 1.6% prior to RFP issuance.

Of the total $63.8 million in incurred B&P costs, 56% ($35.8 million) was incurred from the date of issuance of the RFP to date of contract award, and 44% ($28.0 million) was

incurred prior to the issuance of the RFPs.

Of the $35.8 million in B&P costs incurred from the date of the RFP to contract award, 53% ($19.1 million) was incurred from the date of RFP issuance to date of proposal submission, and 47% ($16.7 million) was incurred from proposal submission to date of contract award.

The seven competitors estimated that 48.6% ($31 million) of their total B&P costs on the two B-1 development competitions was recoverable from the DoD. The remainder of those costs was allocated to commercial sales or written off against profit.

FIVE YEAR B&P, IR&D, AND SALES DATA
MAJOR DEFENSE CONTRACTORS* (ALL $ AMOUNTS IN MILLIONS)

Description	1968	1969	1970	1971	1972
B&P Incurred	$ 382	$ 426	$ 414	$ 428	$ 469
B&P Accepted by Government	368	407	398	390	432
B&P Reimbursed by DoD	271	286	278	265	304
Total DoD Sales	22,275	22,692	21,315	19,568	18,385
Other Government & Commercial Sales	14,679	13,738	11,204	12,497	12,767
Total Gov't. & Comml. Sales	$ 36,954	$ 36,430	$ 32,519	$ 32,065	$ 31,061
DoD Sales as a % of Total Sales	60.3%	62.3%	65.5%	61.0%	59.2%
B&P Reimbursed By DoD as a % of Total B&P Incurred	70.1	67.1	67.1	61.9	64.8
B&P Incurred as a % of Total Sales	1.0	1.2	1.3	1.3	1.5
B&P Reimbursed by DoD as a % of DoD Sales	1.2%	1.3%	1.3%	1.4%	1.7%
IR&D Incurred	$ 776	$ 808	$ 753	$ 703	$ 776
IR&D Accepted by Gov't.	579	653	597	568	620
IR&D Reimbursed by DoD	$ 338	$ 389	$ 376	$ 354	$ 400
Number of Contractors/ Reporting Divisions	96/178	98/188	84/175	77/167	77/167

NOTE: The number of contractors has changed somewhat over the years due to refinements in criteria. Basically, they are those contractors with more than $15 million in auditable business or requiring more than two man-years of direct audit effort by DCAA per year.

*Source: DCAA Annual Reports, Independent Research & Development and Bid and Proposal Costs Incurred by Major Defense Contractors, 1969-1972.

DEVELOPMENT OF CONTRACTOR'S WEIGHTED AVERAGE SHARE IN COST RISK (CWAS) FOR THE AGGREGATE BUSINESS OF 167 REPORTING DIVISIONS (77 MAJOR DEFENSE CONTRACTORS)

A. ASSUMPTIONS

In developing a CWAS rating for the aggregate business of 167 profit centers of major Defense contractors, certain equivalency assumptions were made. These were:

i. Virtually the same results would be achieved if a cost incurred base were used rather than the sales base. Also, the same proportions would obtain whether calendar year or fiscal year data were used.

ii. The percent distribution of the different types of contracts awarded to the 100 largest Defense contractors in 1971 and 1972 (adjusted to delete oil companies and certain other contractors assumed to have 100% Firm Fixed-Price business) reflects the composition of the types of DoD contracts on which sales were recorded for the 167 reporting divisions of 77 major DoD contractors for which the CWAS rating was computed.

iii. The awards made by NASA in 1971 and 1972 to all business firms approximate the sales made by the 77 major DoD contractors in 1971 and 1972 to all non-DoD Government agencies. Sales to NASA (awards made by NASA in 1971 and 1972) were given a zero percentage factor in computing the CWAS rating.

iv. All DoD Fixed-Price Redeterminable Contracts were given a 65 percent factor. All Fixed-Price Incentive Contracts were given a 55 percent factor.

Reference documents used as sources of data are listed on page 3 following the CWAS computation on page 2.

B. CWAS COMPUTATION (ALL $ AMOUNTS IN MILLIONS)

DoD Awards	Fiscal Year 1971 % Distribution	× CWAS % Factor	= Product	× DoD Sales	= CWAS Amount	Fiscal Year 1972 % Distribution	× CWAS % Factor	= Product	× DoD Sales	= CWAS Amount
Firm Fixed-Price-Competitive	16.9*	1.00	16.9	$19,568	$3,312	16.9	1.00	16.9	$18,385	$3,107
Firm Fixed-Price-Non-Competitive	23.3*	.80	18.6	19,568	3,641	24.0	.80	19.2	18,385	3,530
Fixed-Price Redeterminable	.7	.65	.5	19,568	90	.9	.65	.5	18,385	108
Fixed-Price Incentive	27.3	.55	15.0	19,568	2,935	24.4	.55	13.4	18,385	2,464
Fixed-Price with Escalation	4.7	.80	3.8	19,568	744	4.4	.80	3.5	18,385	643
Cost-Plus-Incentive Fee	9.9	.15	1.5	19,568	294	10.4	.15	1.6	18,385	294
Cost-Plus-Award Fee	2.4	.15	.4	19,568	78	2.6	.15	.4	18,[illegible]	74
All Others	14.8	.00	.0	19,568	0	16.4	.00	0.0	18,[illegible]	0
Sub Total	100.0			19,568	11,096	100.0			18,385	10,220
NASA awards to all business firms		.0		2,280	0		.0		2,143	0
Remainder of sales - assumed to be all commercial		1.00		10,217	10,217		1.00		10,533	10,533
Total sales & CWAS amount				32,065	21,313				31,061	20,753
CWAS Rating = 21,313 ÷ 32,065 = 66.5%						20,753 ÷ 31,061 = 66.8%				

*DETAIL OF DEVELOPMENT OF FIRM FIXED-PRICE % DISTRIBUTION FOR FY 1971
(FY 1972 COMPUTED IN SAME MANNER)

Awards of $10,000 or more	$29,692	Firm Fixed-Price	$12,580
Less awards to oil companies and other predominantly fixed-Price contractors	(1,080)		(1,080)
Net Gross Awards	$28,612		$11,500

% of Adjusted Firm Fixed-Price Awards. $11,500 ÷ $28,612 = 40.2%

% of Awards Made Competitively: 42.1%

% of Awards Made Non-Competitively: 57.9%

% of Competitive Firm Fixed-Price Awards: 42.1% × 40.2% = 16.9%*

% of Non-Competitive Firm Fixed-Price Awards: 57.9% × 40.2% = 23.3%*

C. REFERENCE DOCUMENTS AND DATA USED

Reference Documents	Data Used
i. DCAA Annual Report, Independent Research and Development and Bid and Proposal Costs Incurred by Major Defense Contractors in the Years 1971 and 1972, March, 1973.	Total Government and commercial sales for 1971 and 1972. Total DoD sales during 1971 and 1972 for those Defense contractors (77 comprising 167 reporting divisions) with an annual auditable volume of $15 million or more in incurred costs or which required two or more man-years of DCAA direct audit effort per year.
ii. Military Prime Contract Awards and Sub-contract Payments or Commitments: July 1971-June 1972, Office of the Secretary of Defense, Washington, D. C.	Percent distributions and amount of Fixed-Price (Firm, Redeterminable, Incentive, and Escalation) and Cost-Reimbursement (Incentive and Award Fee) types of contracts for fiscal years 1971 and 1972. Percent of competitive and non-competitive awards for fiscal years 1971 and 1972.
iii. Defense Department Tabulation of 100 Largest Prime Contractors, FY1972, Office of the Secretary of Defense, Washington, D. C.	Amount of prime contract awards made to oil companies and certain other contractors assumed to have 100% Firm Fixed-Price business.
iv. NASA Procurement Program Policies and Trends Handbook, Fiscal Year 197., NASA Procurement Office, Washington, D. C.	Net value of procurement awards to business firms for fiscal years 1971 and 1972.