REPORT TO THE
COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

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Payments For Independent Research And Development And Bid And Proposal Costs B-167034

Department of Defense

BY THE COMPTROLLER GENERAL
OF THE UNITED STATES

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-167034

The Honorable John C. Stennis, Chairman
Committee on Armed Services
United States Senate

Dear Mr. Chairman:

In accordance with your request of June 5, 1972, we have further examined the matters discussed in our April 17, 1972, report entitled "Implementation of Section 203, Public Law 91-441, on Payments for Independent Research and Development and Bid and Proposal Costs."

Due to time limitations, we did not obtain formal comments from the Secretary of Defense, although we did discuss the report with Defense officials.

As agreed to by your office, we are sending copies of the report to the Chairman of the House and Senate Government Operations Committees, the House and Senate Appropriations Committees, and the House Armed Services Committee.

We are also sending copies to the Director, Office of Management and Budget; the Secretary of Defense; the Executive Secretary, Council of Defense and Space Industry Associations; and the seven contractors we reviewed.

Sincerely yours,

Comptroller General
of the United States

Contents

		Page
DIGEST		1
CHAPTER		
1	INTRODUCTION	5
	IR&D and B&P costs	5
	Provisions of Public Law 91-441	6
2	DOD ACTIONS TO IMPLEMENT THE LAW	7
3	REQUIREMENT FOR POTENTIAL MILITARY RELATIONSHIP	10
	Lack of clarity in law	10
	Lack of DOD criteria	10
	Air Force PMR criteria	11
	Inconsistent PMR determinations	12
	Conclusion	14
	Recommendation	14
4	EFFECT OF TECHNICAL EVALUATIONS ON NEGOTIATED CEILINGS	15
	Use of technical evaluations	15
	Conclusions	18
	Recommendation	18
5	OTHER PROBLEM AREAS	19
	Delays in negotiating advance agreements	19
	Recommendation	20
	Need for consistency in technical evaluation debriefing procedures	21
	Cost sharing	21
	Recommendation	22
	Need for consistent negotiation procedures and records	23
	Recommendations	25
	PMR reviews	25
	Conclusion	26
	Recommendation	26

CHAPTER		Page
6	INDUSTRY VIEWS ON THE TREATMENT OF IR&D AND B&P COSTS UNDER PUBLIC LAW 91-441	27
	Comments of contractors visited	27
	PMR	28
	Military relevancy and NASA	28
	Reduced IR&D and B&P ceilings	29
	Advance ceiling on B&P	30
	Increased administrative costs	31
	Views of the Council of Defense and Space Industry Associations	32
	PMR requirement	32
	Arbitrary reduction of proposed cost	33
	Technical evaluations	34
	Our evaluation of industry comments	34
7	RECOMMENDATIONS	36
	Recommendations to the Secretary of Defense	36
	Recommendations to the Committee	37
8	SCOPE OF REVIEW	39
APPENDIXES		
I	Letter dated June 5, 1972, from the Chairman, Senate Armed Services Committee, to the General Accounting Office	41
II	Letter dated November 21, 1972, from the Council of Defense and Space Industry Associations to the General Accounting Office	42
III	Recommendations on IR&D and B&P and dissenting positions as summarized by the Commission on Government Procurement	48
IV	Summary of pertinent IR&D and B&P cost information for the seven contractors reviewed	51

ABBREVIATIONS

ASPR	Armed Services Procurement Regulation
B&P	bid and proposal
CODSIA	Council of Defense and Space Industry Associations
DOD	Department of Defense
GAO	General Accounting Office
IR&D	independent research and development
NASA	National Aeronautics and Space Administration
PMR	potential military relationship

COMPTROLLER GENERAL'S REPORT TO THE COMMITTEE ON ARMED SERVICES UNITED STATES SENATE

PAYMENTS FOR INDEPENDENT RESEARCH AND DEVELOPMENT AND BID AND PROPOSAL COSTS
Department of Defense
B-167034

D I G E S T

WHY THE STUDY WAS MADE

On June 5, 1972, the Chairman of the Senate Committee on Armed Services requested the General Accounting Office (GAO) to further examine matters discussed in its report entitled

> "Implementation of Section 203, Public Law 91-441, on Payments for Independent Research and Development and Bid and Proposal Costs" (B-167034, April 17, 1972).

In that report, GAO stated that the effectiveness of the actions taken by the Department of Defense (DOD) and the effects of section 203 could not be measured because enough time had not elapsed since the law was enacted.

In accordance with the Committee's interests, GAO directed this examination to determining DOD's progress in implementing the law, the impact of the potential military relationship test on contractors, and the reasonableness of the application of this test.

The Committee also requested that GAO determine whether the contractors' concern about the constraints implied by the relevancy test are valid or whether it is only the threat of these constraints causing concern.

Due to time limitations, GAO did not obtain formal comments on this report from the Secretary of Defense, although it did discuss the report with DOD officials and they agreed generally with GAO's findings and recommendations. Their comments have been noted in the report where appropriate.

BACKGROUND

Section 203 places certain conditions, restrictions, and requirements on DOD's payment of independent research and development (IR&D) and bid and proposal (B&P) costs to defense contractors after December 31, 1970. Among other things, it requires that:

--Funds authorized for appropriation to DOD shall not be available for payment of IR&D or B&P costs unless the Secretary of Defense determines that the work for which payment is made has a potential relationship to a military function or operation.

--DOD negotiate advance agreements to establish dollar ceilings on such costs with all companies which, during the last preceding year, received more than $2 million of IR&D or B&P payments from DOD.

--IR&D portions of the negotiated advance agreements be based on

company-submitted plans that are technically evaluated by DOD prior to or during the fiscal year covered by the agreement (See p. 6.)

FINDINGS AND CONCLUSIONS

The potential military relationship provision of section 203 continues to be vague. As interpreted and applied by DOD, it has had no measurable effect on DOD's ceilings or on IR&D or B&P payments. (See p. 10.)

DOD has taken a number of steps to improve its surveillance and administration of major contractors' IR&D and B&P activities. For example, it has:

--Established an IR&D Policy Council, delegated responsibility for determining potential military relevancy for IR&D projects to the IR&D Technical Evaluation Group, and delegated responsibility for determining potential military relevancy for B&P efforts to the negotiator.

--Issued regulations to require the negotiation of advance agreements, relevancy determinations, and technical evaluations by the military services.

--Issued standard forms for the military services to use in performing technical evaluations.

--Conducted an internal servicewide review of IR&D and B&P management and control. (See p. 7.)

Notwithstanding general DOD policy guidance, the lack of specific directives has permitted inconsistent implementation among the services. These inconsistencies and other problems in developing and negotiating IR&D and B&P advance agreements persist.

--Although advance agreements are now negotiated on a more timely basis, most agreements are not negotiated before costs are incurred. (See p. 19.)

--Negotiation procedures are neither uniform nor consistent; negotiators' files are frequently incomplete and do not specify the basis for determining the ceilings. (See p. 23.)

--There is little evidence that technical evaluations are adequately considered in negotiating ceilings or that they are used to motivate contractors to improve performance. (See p. 15.)

--Not all negotiators are conforming with the intent of the Armed Services Procurement Regulation which prohibits cost sharing within the ceiling limitation. (See p. 21.)

--After-the-fact reviews to determine relevancy, especially for B&P efforts, are excessively delayed; more timely reviews should be made to provide additional data for negotiating the subsequent year's ceiling. (See p. 25.)

--Contractors frequently are not given adequate feedback concerning results of technical evaluations. (See p. 21.)

Comments on the impact of the law were obtained from the Council of Defense and Space Industry Associations and from individual contractors. (See p. 27.) Contractors feel that sufficient time has not

elapsed to accurately assess the full impact of section 203 or DOD's implementation of it. They are concerned, however, that "the law will have a detrimental effect upon the national interest." They are particularly concerned about the repressive effect that the potential military relevancy requirement may have on innovative IR&D. However, neither the Council of Defense and Space Industry Associations nor any of the companies contacted provided GAO with specific evidence to validate these concerns.

RECOMMENDATIONS TO THE SECRETARY OF DEFENSE

DOD should:

--Issue guidelines to the services to insure more consistent determinations of potential military relevancy. (See p. 14.)

--Continue to emphasize the desirability of negotiating advance agreements either prior to cost incurrence or early in the contractor's fiscal year and to seek alternative means of solving this problem. (See p. 20.)

--Establish uniform negotiation procedures and policies for negotiators to aid in the consistent and equal treatment of contractors. (See p. 25.)

--Establish guidelines that uniformly recognize, during ceiling negotiation, the technical quality of contractors' IR&D programs with reward or penalty, as appropriate. (See p. 18.)

--Require the services to maintain negotiation files which record the rationale and show the dollar effect of the factors considered in establishing the ceiling. (See p. 25.)

--Insure compliance with the intent of the Armed Services Procurement Regulation which prohibits cost sharing within the ceiling. (See p. 22.)

--Perform after-the-fact reviews as soon as possible after the contractor's fiscal year ends to provide additional data for subsequent negotiations. (See p. 26.)

MATTERS FOR CONSIDERATION BY THE COMMITTEE

In its prior report, GAO suggested that the Congress clarify section 203. Since then, however, the Government's support of IR&D and B&P has been the subject of several intensive studies.

GAO does not recommend that any changes be made in the law at this time, pending thorough consideration of the results of these studies and the suggestions for improvements and alternative actions which emanated from them. GAO plans to use these studies and to continue its examination of the area, considering such matters as:

--Recommendations on IR&D and B&P by the Commission on Government Procurement and dissenting positions.

--Recommendations from a study by DOD's IR&D Policy Council.

--Possible inequities to the Government when contractors develop products under IR&D programs in defense/space cost centers and market them in commercial cost centers.

--Concerns of industry that some smaller companies receive inequitable treatment.

--Alternative means of insuring equitable allocation of IR&D and B&P costs. (National Aeronautics and Space Administration officials are concerned about the impact that DOD's relevancy test could have upon them and their contractors.)

--Upward trends in contractors' B&P expenditures and a corresponding reduction in innovative IR&D, which could possibly adversely affect the national industrial technology base. (See p. 37.)

CHAPTER 1

INTRODUCTION

Independent research and development (IR&D) is that part of a contractor's research and development program initiated by the contractor; it is not directly sponsored by, or required in the performance of, a contract, grant, or similar agreement. In an IR&D program, a contractor directs its resources to any effort it feels necessary to maintain or advance the company's technology.

Bid and proposal (B&P) costs are those costs the contractor incurs in preparing, submitting, and supporting bids and proposals for potential contracts. B&P effort is conducted at the discretion of the contractor to convince the buyer that the contractor is the most acceptable supplier for a particular product.

The Department of Defense (DOD) treats IR&D and B&P costs as indirect costs (overhead items). Accordingly, DOD and other Government agencies bear part of the contractor's IR&D and B&P costs by applying overhead costs to contracts, grants, or similar agreements. The extent to which DOD absorbs these costs depends on the business mix (the ratio of DOD sales to other Government/commercial sales) of each contractor. Therefore, if a contractor's work is primarily for DOD, DOD will generally absorb the major portion of the contractor's IR&D and B&P costs.

IR&D AND B&P COSTS

DOD's share of total costs incurred by major defense contractors for their IR&D and B&P efforts increased steadily (as did DOD sales) from $459 million in 1963 to $778 million in 1969. In 1970 and 1971 these costs decreased (as did DOD sales) as shown in the table below. DOD sales continued to decrease in 1972, but DOD's share of IR&D and B&P costs went up during 1972.

Total Costs for IR&D and B&P

Cost element (note a)	1968	1969	1970	1971	1972
	(000 omitted)				
Cost incurred	$ 1,286	$ 1,412	$ 1,318	$ 1,252	$ 1,245
Amount accepted by Government	1,057	1,191	1,093	1,038	1,052
DOD's share	673	778	714	673	704
Sales to DOD	22,275	22,692	21,315	19,655	18,385

[a]Cost data includes varying amounts of other technical effort.

A summary of pertinent IR&D and B&P cost information for the seven contractors that we reviewed is included in appendix IV.

PROVISIONS OF PUBLIC LAW 91-441

The Congress enacted Public Law 91-441 on October 7, 1970. Section 203 of the law placed certain conditions, restrictions, and requirements on DOD for paying IR&D and B&P costs to defense contractors after December 31, 1970. Among other things, section 203 provides that:

--Funds authorized for appropriation to DOD shall not be made available after December 31, 1970, for payment of IR&D or B&P costs unless the Secretary of Defense determines that the work for which payment is made has a potential relationship to a military function or operation and unless:

  --The Secretary of Defense, prior to or during each fiscal year, negotiates advance agreements establishing a dollar ceiling on such costs with all companies which during their last preceding fiscal year received more than $2 million of IR&D or B&P payments from DOD.

  --The IR&D portions of the negotiated advance agreements are based on company-submitted plans that are technically evaluated by DOD prior to or during the fiscal year covered by the agreement.

CHAPTER 2

DOD ACTIONS TO IMPLEMENT THE LAW

In implementing section 203, DOD issued Defense Procurement Circulars Nos. 84, 86, 87, and 90. These circulars were to furnish guidance on the negotiation of advance agreements and to amend the Armed Services Procurement Regulation (ASPR) 15-205.35 and 15-205.3 concerning IR&D and B&P costs. On April 28, 1972, the provisions of the circulars were incorporated into ASPR.

DOD Instruction 5100.66, published on February 29, 1972, (1) prescribed the role, mission, and composition of the IR&D Policy Council and (2) assigned responsibilities and outlined procedures for the technical evaluation and review of IR&D programs.

The IR&D Policy Council is responsible for developing and securing the Secretary of Defense's approval of policy and guidance for the IR&D program and related B&P activities. The Council determines the proper level of DOD support required, outlines IR&D and B&P goals, establishes the mechanisms to be used to increase or decrease the overall level of effort, provides the guidance necessary to insure valid potential relevancy determinations, determines appropriate negotiation policies, and responds to congressional inquiries.

The IR&D Policy Council consists of its Chairman, the Director of Defense Research and Engineering; the Assistant Secretaries of Defense (Installation and Logistics, and Comptroller); and the Assistant Secretaries for Research and Development and for Installation and Logistics from the Army, the Navy, and the Air Force. Representatives of the National Aeronautics and Space Administration (NASA) and the Atomic Energy Commission participate as observers.

The IR&D Technical Evaluation Group (formerly the Armed Services Research Specialists Committee) is composed of a chairman appointed by the Director of Defense Research and Engineering and three IR&D departmental managers--one each from the Army, the Navy, and the Air Force. This group is responsible for establishing criteria, methodology, and evaluation forms to be used by the military departments for the technical evaluations and ratings of IR&D programs.

These evaluations determine the relevance and quality of each IR&D project and categorize each project as research or development in accordance with the ASPR definition.

The IR&D Technical Evaluation Group is also responsible for:

--Establishing uniform procedures for debriefing companies whose IR&D programs have been reviewed.

--Determining the standard format for submitting companies' IR&D project descriptions.

--Establishing a schedule for submission of companies' IR&D brochures.

--Establishing procedures for providing the Defense Contract Administration Services with technical evaluations of company-submitted IR&D project descriptions to support their negotiation of advance agreements required by law.

--Establishing an annual schedule for onsite reviews of contractors' facilities.

--Establishing procedures for providing the Department-designated negotiator with a technical evaluation of each IR&D program to be used in determining the IR&D advance agreement with each company.

--Assisting contracting officers on an as-needed basis in determining the relevance of B&P effort.

DOD has also issued standard forms for use by the military departments in the performance of technical evaluations.

Since enactment of the legislation, DOD has increased the number of advance agreements negotiated with companies and cost centers from 104 in 1970 to 125 in 1971 and to 122 in 1972, thereby increasing visibility over contractors' IR&D and B&P efforts.

In September 1971 the IR&D Policy Council organized a working group to provide the Council with a concise definition of IR&D--including its objectives (as seen by DOD,

other Government agencies, and industry), its accomplishments, its deficiencies, and any impediments to the realization of the defined objectives.

The working group submitted its report, including recommendations for corrective action, to the Council for review in November 1972. GAO was advised by the Chairman of the working group that, except for the recommendations, the report has been approved. A copy of the working group's draft report, without the recommendations, was informally released to the General Accounting Office on January 15, 1973.

CHAPTER 3

REQUIREMENT FOR POTENTIAL MILITARY RELATIONSHIP

In our April 1972 report we noted that section 203 failed to provide criteria for determining when a project was considered to have a potential military relationship (PMR) or any indication as to what the provision was intended to achieve. We found in our current review that DOD still had not issued uniform criteria for determining PMR. As a result, the services have inconsistently applied the PMR provision.

The seven contractors we visited had experienced no measurable change in the amount of DOD's reimbursement for their IR&D and B&P effort as a result of the PMR requirement. DOD officials advised us that the PMR provision has had no effect on the ceiling negotiated with any contractor during either 1971 or 1972.

LACK OF CLARITY IN LAW

In September 1972 an official from the Directorate of Defense Research and Engineering pointed out that the law was not as clear as it might be concerning PMR and that it was inconsistent with the present administration's policy of encouraging more research and development.

Several contractors included in our review also commented on the lack of clarity in the law. One contractor claimed that the PMR review was largely subjective and unproductive because of the unclear definition of relevancy. Another maintained that relevancy standards should be developed if the test was to be continued so industry could take appropiate and consistent action to satisfy the criteria of such a test.

LACK OF DOD CRITERIA

Although DOD has initiated actions to improve its surveillance and administration of IR&D and B&P activities, it has not developed uniform criteria for determining PMR.

DOD Instruction 5100.66 delegated to the IR&D Technical Evaluation Group the responsibility for establishing criteria and methodology for uniform PMR determinations of IR&D.

The DOD contracting officer was delegated responsibility for PMR of B&P.

The instruction did not provide definite criteria for the services to apply in determining whether IR&D and B&P projects meet PMR requirements. This probably was due to the lack of clarity in the law and the difficulty of delineating objective criteria for determining PMR.

Technical evaluators acknowledge that the determination is purely judgmental. Of about 1500 IR&D projects and tasks proposed by the 7 contractors in 1971 and 1972, about 97 percent were determined to have PMR. Those projects determined to not have PMR had no effect on the ceilings negotiated or on DOD's payments to the contractors for IR&D costs.

AIR FORCE PMR CRITERIA

The Air Force recognized the need for a uniform interpretation of PMR. An informal document prepared by the Air Force entitled "Guidelines for Potential Relationship Determination for IR&D Projects" contained the following statement:

> Section 203 requires that IR&D payments by the DOD be made only for work which has a potential relationship to a military function or operation. Obviously, if potential relationship is taken in its broadest sense, almost any R&D effort could qualify, since military functions and operations involve at least incidentally almost every aspect of human life. But it seems clear that Congress intended to eliminate DOD payment for those IR&D efforts whose relationship to military functions or operations is remote or incidental. (Underscoring supplied.)
>
> In order to obtain a consistent determination of the potential relationship, for the varied technologies represented in the programs, this paper defines the degree to which a potential relationship must exist to be considered within the intent of the law.

Following this statement was a matrix (see p. 13) and a discussion of the basic considerations in determining PMR. Clearly, the Air Force matrix was designed to identify

projects which were only incidentally related to a military function or operation to eliminate DOD's cost for those projects.

Under the matrix, all projects must have substantial military application before they can be termed potentially relevant. However, some projects can have substantial military application and still be termed not relevant if another Government agency is responsible for that field of research and development.

Such a determination, however, is not always upheld. For example, a technical evaluator determined that a space shuttle project was nonrelevant. The Office of the Director, Defense Research and Engineering, overruled this determination and said that the space shuttle project had PMR. We believe the Air Force matrix would support the technical evaluator's determination since NASA had prime responsibility for the space shuttle project.

DOD has not directed that the military services use the Air Force matrix and criteria but is considering such a policy. In our opinion, the Air Force matrix, if properly applied, would provide a greater degree of consistency in relevancy determinations. The other services have voluntarily adopted the matrix or similar criteria for a guide when evaluating the relevancy of IR&D. Even so, PMR application is inconsistent.

INCONSISTENT PMR DETERMINATIONS

In 1971 and 1972 the Army considered one contractor's NASA projects relating to deep space applications to be relevant. However, the Air Force considered similar deep space IR&D efforts of another contractor to be nonrelevant.

In another instance, Navy evaluators considered as relevant a marine sciences project which concentrated on developing an understanding of the water environment and pollution in the New York area. The evaluators considered the project relevant because the Navy had a social responsibility to protect the environment in areas where it has bases and because information on coastal environment was important to the Navy in amphibious-warfare planning. However, the project's contractor did not consider it to have PMR; we

AIR FORCE MATRIX FOR DETERMINING PMR

IS THE DOD PRECLUDED, BY LAW OR OTHERWISE FROM FUNDING SUCH R&D?	WHAT IS THE NATURE OF THE MILITARY REQUIREMENT FOR THE END PRODUCT?	WHAT WILL BE THE APPLICATION OF THE END PRODUCT?	IS ANOTHER GOVERNMENT AGENCY RESPONSIBLE FOR THIS FIELD OF R&D?	CONCLUSION: IS THE IR&D PROJECT POTENTIALLY RELEVANT?
YES				NO
NO	URGENT			YES
NO	NONE (NOT USED BY MILITARY)			NO
NO	ROUTINE	PRIMARILY MILITARY		YES
		PRIMARILY NONMILITARY BUT HAS SUBSTANTIAL MILITARY APPLICATION	YES	NO
			NO	YES
		ONLY INCIDENTAL MILITARY APPLICATION		NO

believe that application of the Air Force's PMR matrix would confirm the contractor's opinion.

At another location, the contracting officer requested assistance from the Defense Contract Audit Agency to determine relevancy for B&P projects. The audit agency, in turn, requested help from the Air Force plant representative. The plant representative examined nine projects and determined that six were relevant. The audit agency, on the other hand, determined that four of the six deemed relevant by the plant representative were not relevant and that one of the three considered not relevant was relevant.

CONCLUSION

These inconsistencies demonstrate the need for better PMR criteria to be applied consistently on a servicewide basis for both the contractor's IR&D and B&P efforts. The military services are not using the same criteria; at the time of our review, there was no DOD requirement that uniform PMR criteria be developed.

Uniform criteria would provide contractors with consistent treatment under the law and with a clearer understanding of DOD's basis for evaluating their IR&D and B&P efforts. This would help contractors manage their programs and would provide them with additional information to determine the scope of their IR&D and B&P efforts.

RECOMMENDATION

We recommend that DOD issue guidelines to the services to insure more consistent determinations of PMR.

CHAPTER 4

EFFECT OF TECHNICAL EVALUATIONS ON NEGOTIATED CEILINGS

Section 203 requires that DOD technically evaluate each contractor's proposed IR&D program. The evaluation should give the negotiator a basis for judging the quality of the contractor's efforts against a standard and other contractors in similar product areas. The evaluation is to be considered in negotiating the IR&D dollar ceiling included in the advance agreement.

DOD's IR&D Technical Evaluation Group is responsible for insuring that technical evaluations are performed and that the results are communicated to the cognizant service negotiator. DOD generally recognizes that the technical quality of a contractor's program should have some effect on the level of DOD funding. However, DOD has not provided the necessary guidance to specify how the technical quality rating will be recognized or how the contractor should be rewarded or penalized. Nor has DOD insured that all contractors will receive equal treatment under the law. As a result, each service has its own view concerning the significance of the technical evaluation and how the results will be considered in negotiating an advance agreement.

The proposed 1971 and 1972 IR&D programs of the seven contractors were technically evaluated. In three instances negotiator's records did not identify the effect, if any, that the technical rating had on the ceiling negotiated, nor were the negotiators able to identify or quantify the impact it had on the ceiling. For the other four contractors, the negotiator stated that he considered the technical evaluation but felt that the change from last year's rating did not warrant an increase or decrease in the contractor's program.

USE OF TECHNICAL EVALUATIONS

The Army regulation governing technical evaluations stated that it is the intent of the Government to reward high quality effort with higher than normal support and low quality effort with lower than normal support. The regulation

recommended a level of support commensurate with the technical quality of the IR&D program--identified in such terms as minimum, average, and maximum--but not quantified.

The Army member of the IR&D Technical Evaluation Group advised the Army negotiator who was negotiating the IR&D ceiling for one contractor that, on the basis of a cursory examination of the 1972 program and considering the 1971 evaluation, a tentative rating of "good" was assigned. The contracting officer took the position that the evaluation did not justify increasing or decreasing the ceiling. Army regulations, however, do not provide any guidelines as to what a good rating should support.

The Navy has not issued any guidelines which prescribe the technical rating system to be used or how the results of a technical review will be considered in negotiating a ceiling.

In negotiating a contractor's 1972 ceiling, the Navy considered the contractor's program to be "average to good" and rated several areas "superior." The contractor's 1972 ceiling was about 6 percent higher than its 1971 ceiling. Ceilings negotiated increased from 1970 to 1972 by almost $2 million while DOD sales decreased by about $143 million during the same period as shown below.

	Program year		
	1970	1971	1972
	(000 omitted)		
Proposed program	$ 34,000	$ 35,000	$ 35,000
Ceiling negotiated	27,750	28,000	29,660
Sales to DOD	739,215	618,040	[a]596,000

[a]Contractor estimate.

The responsible Navy negotiator informed us that the technical evaluations were one of several factors considered during negotiations. However, he could not identify or quantify the impact they had on the ceilings.

The Navy also negotiated another contractor's 1972 ceiling. On the basis of the 1971 technical evaluation, the program was considered "average or slightly above average." The 1972 negotiated ceiling increased about 8 percent over the 1971 ceiling, but sales to DOD decreased slightly. The Navy negotiator informed us that, although the technical evaluation was considered during negotiation, it was not reasonable to quantify these factors.

During 1972 the Air Force negotiators were instructed to adjust the negotiation position by stated percentage rates to recognize a change in a contractor's technical evaluation rating. This was to provide contractors with an incentive to improve the technical quality of their IR&D programs.

For the three contractors we reviewed who had negotiated ceilings with the Air Force, the change in the technical rating was insufficient to warrant a change in the negotiation position.

We also examined statistics concerning advance agreements with contractors other than those seven we reviewed. However, we were not able to establish any meaningful or consistent pattern of correlation between technical ratings and adjustments in the negotiated ceilings.

According to the DOD IR&D study group's November 1972 report, most contractor officials felt that one of the principal weaknesses in the IR&D ceiling negotiation procedures was the lack of reward and motivation for the technical quality of their programs. The contractors said that the negotiations did not sufficiently emphasize the technical quality of their IR&D programs. The study group recognized that all contractors did not receive equal treatment and that quantification, at least to some degree, of

the process for determining the Government's negotiation position would alleviate some of these problems.

CONCLUSIONS

To treat all contractors consistently and equitably and to acknowledge the technical quality of the proposed IR&D programs, DOD should issue guidelines that prescribe a quantified means for adjusting the level of DOD support on the basis of the technical quality of the IR&D program. The guidelines should also reward or penalize a contractor for changing the quality of its effort.

RECOMMENDATION

DOD should establish guidelines that uniformly recognize, during ceiling negotiations, the technical quality of contractors' IR&D programs with reward or penalty, as appropriate.

CHAPTER 5

OTHER PROBLEM AREAS

DELAYS IN NEGOTIATING ADVANCE AGREEMENTS

Section 203 requires DOD to negotiate an advance agreement with each major defense contractor to establish a dollar ceiling for IR&D and B&P costs. The negotiated ceiling limits the amount of IR&D and B&P costs that the Government will pay. It also provides some assurance to the contractor that its IR&D and B&P costs will be recovered and that disputes concerning the reasonableness or allocability of the costs will be minimized or avoided. Section 203 states that such agreements will be negotiated prior to or during the contractor's fiscal year. To be most effective, such agreements should be negotiated prior to cost incurrence.

Our April 1972 report stated that DOD was aware of the problems associated with delays in negotiating advance agreements and was attempting to bring about earlier negotiations of 1972 agreements by requiring earlier submissions of proposed programs, better scheduling of technical evaluations, etc.

The following table shows how long it took to negotiate advance agreements with contractors in 1971 and 1972.

Timeliness of Ceilings Negotiated

	Army		Navy		Air Force		DSA		Total	
	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972
Negotiated prior to contractor's fiscal year	-	1	-	2	-	3	-	-	-	6
Negotiated during contractor's fiscal year:										
1 to 3 months	-	1	5	9	3	18	-	-	8	28
4 to 6 months	1	5	13	25	9	20	2	2	25	52
7 to 9 months	2	-	8	5	12	10	1	2	23	17
10 to 12 months	6	1	13	1	39	14	5	2	63	18
Total	9	7	39	40	63	62	8	6	119	115
Negotiated subsequent to contractor's fiscal year	-	-	3	-	3	-	-	1	6	1
Total advance agreements	9	8	42	42	66	65	8	7	125	122

DOD has made considerable progress in the timeliness of advance agreements. Approximately 33 advance agreements were negotiated during the first 6 months and 86 were negotiated during the last 6 months of the contractor's 1971 fiscal year. During 1972, however, 80 were negotiated during the first 6 months and 35 during the final 6 months.

Nevertheless, many contractors are still incurring substantial program costs before negotiation. For example, the 1972 advance agreement for one of the contractors we reviewed was not signed until November 21, 1972, less than 6 weeks before the end of the year covered by the agreement. The 1971 advance agreement for the same contractor was not signed until December 30, 1971.

The timeliness of negotiations could be improved by using multiyear agreements. Both the Army and the Air Force used multiyear agreements during 1972. Three of eight 1972 advance agreements negotiated by the Army and 8 of 62 advance agreements negotiated by the Air Force included the contractor's 1973 IR&D and B&P programs.

The timeliness of the technical evaluation may directly affect the negotiation date of the advance agreement since this information should be available for use by the negotiator. When current technical evaluations are not available, the Air Force inserts a clause in the agreement which provides that the negotiated ceiling represents an interim agreement pending an evaluation of the contractor's current year program. The clause provides that, if the current year's technical rating is less than the rating used in the interim agreement (usually the previous year's rating), the Air Force can reopen the agreement to negotiate an appropriate reduction.

RECOMMENDATION

DOD should continue to emphasize the desirability of negotiating advance agreements either prior to cost incurrence or early in the contractor's fiscal year. DOD should also seek alternate means of solving this problem, such as using more multiyear agreements and using prior year evaluations for current year negotiations with subsequent adjustments (upward as well as downward) as necessary.

NEED FOR CONSISTENCY IN TECHNICAL EVALUATION DEBRIEFING PROCEDURES

There is no uniform policy as to whether a debriefing will be given to a contractor following an onsite technical review. As a result, each service has a different practice. The Navy does not debrief the contractor, but the Air Force conducts a detailed briefing. The Army practice is somewhere in between.

Six of the seven contractors included in our review received an onsite technical evaluation during 1972. The seventh contractor had received an onsite review in late 1971. Only two of the seven contractors were given both a timely and a meaningful debriefing, another contractor was given a general debriefing 6 months after the evaluation, and four contractors did not receive any debriefing.

The onsite review provides DOD with first-hand knowledge of the quality of IR&D efforts and maintains technical communication between DOD and the contractor. If properly conducted, the onsite review, coupled with more detailed debriefing procedures, can give the contractor valuable insight into how a major customer views its IR&D efforts. The contractor can then improve the quality and change its IR&D programs to better meet the needs of DOD.

After our review the Office of the Director of Defense Research and Engineering implemented a policy whereby each contractor will be debriefed when the onsite technical review is completed. The debriefing will include a discussion of the quality of the contractor's IR&D program, covering any major problems and what should be done by the contractor to improve its program.

In view of the action taken by that Office, we are not making any recommendation.

COST SHARING

ASPR 15-205.35, as revised in April 1972, states in section (d)(1)(D) that:

> Ceilings are the maximum dollar amounts of total costs for IR&D work that will be

allowable for allocation to all work of that part of the company's operation covered by an advance agreement. Within the ceiling limitations contractors will not be required to share IR&D costs * * *.

This section of ASPR was to assure the contractor that DOD would accept an allocable share of the contractor's IR&D costs which do not exceed the negotiated ceiling. We recognize that contractors frequently spend more than the agreed ceiling, presumably where such expenditures are expected to benefit the company in the long run. To the extent that the ceiling is exceeded, the contractor must absorb the excess costs.

The Navy is practicing a form of cost sharing by requiring the contractor to exceed the ceiling negotiated. For example, the Navy negotiated a ceiling of $29.7 million with one contractor on the basis of the contractor's proposed program of $35 million for 1972. The Navy said it expected the contractor to spend $32.7 million, or $3 million above the negotiated ceiling. The Navy negotiator stated that he felt the contractor would exercise better program control because of its increased financial participation. He stated that, if the contractor did not spend the full $32.7 million, this would be considered in the negotiation of the subsequent year's ceiling.

We were advised that the Navy negotiates all of its advance agreements with similar understandings.

In our opinion, this practice has the effect of negotiating two ceilings, one for the contractor which requires cost sharing and a lower one for DOD reimbursement purposes. We believe that it is the company's prerogative to exceed a ceiling if it so desires, but the Navy practice of forcing cost sharing is contrary to the ASPR provision.

RECOMMENDATION

DOD should insure compliance with the intent of the ASPR provision which prohibits cost sharing within the ceiling.

NEED FOR CONSISTENT NEGOTIATION PROCEDURES AND RECORDS

We examined numerous negotiation records to determine the various factors used to establish contractors' ceilings. We found that negotiators' files are frequently incomplete, and do not specify how ceilings are determined. The files may show the factors considered but do not show the dollar effect of each factor. These factors also vary among and within the services; these inconsistencies have resulted in inequities to some contractors.

In its draft report, the IR&D Policy Council recognized the need to develop uniform negotiation guidelines, criteria, and policies for negotiators to insure similar treatment for all contractors. Contractors have stated that this is a major weakness in DOD's administration of IR&D.

The IR&D Policy Council's findings support our observations. The following information was extracted from its draft report.

> The factors considered by the DOD in reviewing contractors to determine reasonableness of IR&D and B&P costs included a four year historical review and one to three year projections of the following data submitted by each contractor:
>
> | | |
> |---|---|
> | IR&D costs | Product Line Information |
> | B&P costs | Mix of Contracts |
> | Sales | Burdening Procedures |
> | Allocation Base Data | IR&D Technical Effort |
> | Customer Mix | B&P Technical Information |
>
> Other data considered include the following:
>
> - Departmental Budgets
> - General Business Trends
> - Reliability of Contractor Estimates
> - Potential Relationship of Contractor Program to DOD Needs
> - Technical Evaluation
> - Ceilings

Use of these factors helps provide some uniformity of approach to determining the reasonable level of governmental participation in contractors' programs. The weights given to the factors identified above vary considerably, however, between Departments, among contractors reviewed, and from year to year.

Procedurally, all contractors are supposed to receive uniform treatment of their IR&D and B&P costs. The same data are requested from all contractors; the negotiation objectives are derived from the analysis of these data.

Despite procedural intent, all contractors may not, in fact, receive uniform treatment. Each service considers the factors described above in different ways. For all services, the considerations are basically subjective, and thus the danger of inconsistency is great. No overall guidelines have been developed within or between the services. It appears, for instance, that the ceilings established in recent years by Navy negotiators have been generally somewhat higher in proportion to proposed programs than those established by Army and Air Force negotiators. Furthermore, even within the Services, treatment has not always been consistent. In the case of the Air Force, for example, the major factor considered in establishing the government's negotiation position has been the previous year's ceiling of the contractor. This policy has tended to perpetuate any inequities already existing.

The negotiation process also results in IR&D reimbursement being partially based on the effectiveness and tenacity of the contractor's negotiator. A contractor with an excellent technical program, but an agreeable negotiator, will accept a lower relative ceiling than a contractor with a poorer program and a more aggressive negotiator. This may result in cancellation of a portion of the excellent program and expansion of the poor program over a period of years. Quantification (to at least some degree) of the process for determining the government's negotiation position would alleviate this problem.

RECOMMENDATIONS

The IR&D Policy Council's draft report clearly outlines the problems confronting negotiators in their attempts to establish reasonable ceilings. We recommend that, in accordance with the Policy Council's suggestion, DOD establish uniform negotiation procedures and policies for negotiators to aid in the consistent and equal treatment of contractors. We also recommend that DOD require the services to maintain negotiation files which record the rationale and show the dollar effect of the factors considered in establishing the ceiling. Such records would provide a documentary reference against which a contractor's progress in technical merit and other factors could be measured and used in future negotiations.

PMR REVIEWS

Section 203 states that payments cannot be made unless IR&D and B&P projects have PMR. Tests for PMR are made on a before-the-fact and an after-the-fact basis. Before-the-fact reviews are performed to determine the relevancy of proposed projects and to establish a dollar ceiling for such costs. Because the contractors' proposed program changes throughout the year, after-the-fact PMR reviews are performed to give final assurance that the costs spent on PMR projects equal or exceed DOD's allocable share.

The before-the-fact review of B&P is inadequate; it appears to be of little help to the negotiator. The lack of detailed B&P data submitted by a contractor is a problem inherent with the nature of B&P itself. The contractor is not fully cognizant of all B&P projects which may develop during the year, and those anticipated may be postponed or may not materialize. We noted that no before-the-fact PMR determinations were performed for about 16 percent of the 1972 advance agreements negotiated by the Army, the Air Force, and the Defense Supply Agency.

Timing of after-the-fact reviews depends to a great extent on the contractor because the Government cannot perform such reviews until the contractor submits after-the-fact data. Time limits have not been established for the submission of a contractor's after-the-fact data or for when DOD will perform its after-the-fact tests.

CONCLUSION

After-the-fact reviews are seldom completed in time to be of much value to a contractor or to a negotiator in establishing the subsequent year's advance agreement ceiling.

At the present time, contractors have no real assurance that DOD will share in the cost of certain projects, especially B&P, because they may or may not be considered to have PMR. This is not known until the after-the-fact reviews have been performed.

RECOMMENDATION

In conjunction with our recommendation that advance agreements be negotiated prior to cost incurrence (see p. 20), we also recommend that DOD perform after-the-fact relevancy reviews as soon as possible after the close of the contractor's fiscal year to provide additional data for subsequent negotiations.

CHAPTER 6

INDUSTRY VIEWS ON THE TREATMENT OF IR&D AND B&P COSTS UNDER PUBLIC LAW 91-441

COMMENTS OF CONTRACTORS VISITED

We asked the seven contractors to give their views on DOD's implementation of section 203 and the impact of the law on their IR&D and B&P programs. Comments on the law's impact are in some respects preliminary, since audits have not been completed and amounts of recovery have not been finalized.

Some of the contractors noted that the requirements of section 203 are more restrictive than previous requirements. Although most of the contractors would not state that DOD has used the law to negotiate reduced ceilings for IR&D and B&P, they were concerned about the strong authority the statute gave DOD. Contractors cited DOD's authority to decide ceilings; if the contractors do not accept DOD's ceiling, they are limited to no more than 75 percent of the amount to which they are otherwise entitled as determined by the contracting officer.

The contractors feel that the most repressive aspect of the law is the PMR or relevancy requirement which the statute added. They believe that the requirement is not susceptible to precise definition or interpretation.

No contractor identified specific projects which had been dropped from IR&D programs as a result of the PMR requirement; however, they generally agreed that new projects had been screened out by contractors in favor of those projects which tended to satisfy a near-term military requirement. They feel that limiting the independence of IR&D is not in the best national interests and that the requirement should either be dropped or broadened to encompass any project undertaken in the Government's interest.

All of the contractors replied that DOD's efforts to insure compliance have increased the amounts of time and money spent by the companies and DOD.

PMR

The contractors believe that the PMR requirement is unclear and subject to arbitrary interpretation. For example, one contractor expressed the need for a reasonable, realistic set of guidelines, since the national interest would be served best by a rule-of-reason or, even more so, by complete elimination of the relevancy test.

Another contractor stated that, since no instructions or definitions have been published, DOD personnel have used a limited interpretation, imposing an immediate requirement for a DOD product only. This contractor believes that limiting its technological efforts to military needs will not be in the best interests of the Government or the Nation in the long run. Other contractors expressed similar sentiments.

We asked the contractors if the PMR test had forced them to drop IR&D and B&P projects. One contractor replied that it had not undertaken certain new IR&D projects and had not spent what it might otherwise have spent on established projects because of the PMR provision. The contractor did not wish to provide specific examples.

None of the other contractors reported that they had dropped projects because of the PMR requirement. However, one contractor reported that it was screening out projects in the planning stages and that its technical people were undoubtedly not proposing efforts they might have proposed if, in their opinion, it would be difficult to prove PMR. This contractor suggested that section 203 be modified to allow reimbursement for any project which has a potential Government relationship.

Another contractor stated that, in the long run, the PMR requirement may inhibit initiation and request for authorization of projects directed to solutions of non-military problems. A third contractor saw an added deterrent to the pursuit of opportunities for applying defense/aerospace technologies to solution of problems in the civil sector.

Military relevancy and NASA

One contractor foresaw a potential problem when a contractor's work is for both DOD and NASA. For a number of

years DOD and NASA have recognized the commonality of procurements by joining in the negotiation of overhead and advance agreements. There frequently is a disparity between the amount of IR&D and B&P effort applicable to a specific customer in a given year and in the overhead base upon which such costs are allocated to the customer. However, DOD, NASA, and industry have recognized that these disparities are temporary and, in the long run, application of IR&D and B&P costs through overhead would result in equitable treatment to all parties.

Under the relevancy requirement, some costs incurred for related IR&D and B&P for DOD or NASA in a given year, although otherwise acceptable, may not be reimbursed. If such costs exceed the share allocable to that particular customer on a percentage-of-sales basis and cannot be shared by the other customer because of nonrelevancy, they could be disallowed. According to this contractor, the problem is further compounded when a contractor does work for other Government agencies as well.

Another contractor stated that the PMR requirement was unreasonable in that B&P expenditures did not parallel the sales mix in any given year. In 1 year, one-third of this contractor's sales were to NASA and most of the B&P expenditures were for proposals for military aircraft. If IR&D and B&P costs allowed to be allocated to NASA had been limited to projects that had NASA relevance, the contractor's ability to bid on the military aircraft programs would have been restricted. Similarly in a later year, 80 percent of sales were to DOD and most B&P funds were expended on a NASA program. If this program had not had military application, the contractor's effort would have been adversely affected.

Reduced IR&D and B&P ceilings

Although none of the contractors flatly stated that DOD had used the law to reduce its IR&D and B&P payments, some were concerned that this has been the effect. A contractor informed us that it had been subjected to arbitrary disallowances of otherwise reasonably incurred and allocable IR&D and B&P costs on DOD contracts. The contractor said this is contrary to DOD's policy of reimbursing contractors for DOD's share of such expenditures.

The other contractors are also concerned with the strong authority available to DOD. One contractor noted that, although the law does not specifically provide for arbitrary levels in the amount of allowable IR&D and B&P costs, its implementation results in such a policy.

This contractor said that DOD negotiators have unfair leverage because DOD's implementation procedures provide that a major contractor without an advance agreement not receive more than 75 percent of the amount to which the company would be entitled with an advance agreement. The contractor also cited an appeal procedure which it considered less fair than the normal recourse to the Armed Services Board of Contract Appeals. It also pointed to a clause in the advance agreement which calls for a downward-only adjustment in the ceiling if the technical rating is lower than a stipulated rating based on prior experience.

Another contractor stated that it has accepted reduced ceilings as a result of negotiations conducted in a reasonable and businesslike manner. Nevertheless, the contractor is concerned with the extent of authority the statute and ASPR grant to DOD.

Advance ceiling on B&P

Several contractors advised us that the requirement for including a B&P ceiling in the advance agreement is unrealistic.

One contractor believes that the requirement for an advance agreement ceiling on B&P costs is not equitable; that B&P efforts cannot be determined months in advance; and that, by attempting to do so, the contractor's bidding efforts are limited during a given year.

A second contractor also believes that B&P should not be part of the advance agreement. Unlike B&P, IR&D programs are planned in advance, primarily on the basis of prior years' successes and failures, and are susceptible to planning and control. Actual B&P efforts required during any year, however, may differ greatly from what was planned. Major requests for proposals may be issued, canceled, or reissued in a time frame which was not anticipated in the

planning, budgeting, and negotiation of advance agreements. The results could cause a serious overrun of the negotiated ceiling.

Increased administrative costs

All seven contractors advised us that the increased emphasis on technical evaluations and PMR reviews had increased administrative costs for them and DOD. Four of the seven contractors furnished estimates which showed, cumulatively, increased annual costs of between $500,000 and more than $1 million. The other three contractors did not attempt to quantify the amount that their expenditures have risen.

One contractor is concerned with increases in indirect costs attributable to the voluminous documentation and the expensive professional time devoted to the IR&D reviews DOD requires. The contractor contends that annual expenditures have very little, if any, positive impact on the productivity of IR&D and B&P programs but, nevertheless, have increased three-fold since implementation of the new statute.

Another contractor said that the law placed more emphasis on the technical evaluation of the contractor's IR&D program. Since the rating is one of the factors considered in setting the dollar ceiling in the advance agreement, the contractor has to display its work to the DOD evaluators in sufficient depth and detail to receive an equitable rating. Generation of this technical documentation involves a much greater iterative effort between investigators and the administrative staff, with substantial increased costs not readily susceptible to quantitative measurement.

A third contractor stated that, in addition to preparing an additional brochure to satisfy the advance PMR review, it has to analyze each IR&D and B&P project actually performed to permit postaudit of its potential relationship.

A fourth contractor estimated that it has incurred between $50,000 and $100,000 in additional annual costs because of the law, but it feels that it now has better management control of its programs.

A fifth contractor stated that it is spending a great deal of time complying with demands for (1) preparing preliminary and final technical brochures, (2) furnishing data for the DOD IR&D technical data bank, (3) responding to technical, administrative, and auditing requirements, (4) communicating with all levels of Government in support of IR&D, and (5) presenting and arguing relevancy of projects. The contractor stated that this effort could cost up to $750,000 in some years.

VIEWS OF COUNCIL OF DEFENSE AND SPACE INDUSTRY ASSOCIATIONS

The Council of Defense and Space Industry Associations (CODSIA) advised us on November 21, 1972 (see app. II), that sufficient time has not elapsed to fully assess all implications of section 203. Industry has experienced only the negotiation of advance understandings, not the full cycle of actual cost recovery. Nevertheless, CODSIA finds that certain significant trends are continuing.

CODSIA believes that it has become increasingly clear that the statute will detrimentally affect the national interest and that this effect is contrary to recent concerns expressed by some members of Congress and the executive branch. CODSIA cited, as an example, the President's message on science and technology which stressed the need for technology advancement in solving many of the critical domestic and environmental problems facing the Nation.

CODSIA stated that its member companies continue to question the need for a statutory constraint or limitation on selected segments of overhead costs--in particular, on IR&D and B&P costs. The companies feel that the natural forces of competition, close management controls, and Government scrutiny insure the reasonableness of IR&D and B&P expenditure levels.

PMR requirement

CODSIA believes that the PMR requirement has a repressive effect on highly innovative research and development and that appropriate corrective action should be taken. Its arguments were similar to those of the contractors we visited.

1. A narrow interpretation of PMR inevitably reduces the focus of projects to those emphasizing today's military problems.

2. The PMR test materially restrains the solution of critical problems in nondefense areas.

3. The PMR test seriously impedes and erodes the independent ingredient in contractor-funded research and development programs and proposal efforts which may contribute to high-priority national objectives.

4. The program content is affected because proposed projects are screened out by company management at an early stage to make the program responsive to the requirements of section 203.

Arbitrary reduction of proposed costs

CODSIA believes that, although the Congress desired an improved understanding and control of IR&D and B&P costs, it recognized that continuing such efforts was in the national interest.

According to CODSIA, its companies feel that DOD has interpreted the legislation as a mandate from the Congress for continued yearly reductions in the national total of such expenditures, irrespective of national needs and priorities. CODSIA feels that DOD has used this assumed mandate to establish internal pricing objectives which result in arbitrarily imposed ceilings. This often results in cost sharing of otherwise reasonably incurred and allocable IR&D and B&P expenses. This, coupled with threat of a penalty for failure of agree, has resulted in a reduction in the total amount of recovery.

CODSIA submitted tables showing that real dollar totals for IR&D have declined about 8 percent since 1969. However, the direct man-hour effort has decreased by 24 percent over 3 years. Recognizing the growing national need, CODSIA believes that this decline in technical effort should not be compounded by a narrow interpretation of congressional desires.

Technical evaluations

CODSIA informed us that using brochures for reviews required considerable time and effort of scientists and engineers and cost much more than onsite reviews. There is evidence that onsite evaluations result in a substantially better understanding by the Government of a contractor's technical activities.

Because DOD's technical ratings are used in establishing dollar ceilings for IR&D work, CODSIA believes the key problem to be solved is how DOD and the contractors can obtain an economical but effective review of at least the key elements of a contractor's program. CODSIA supports DOD in looking for improvements in this area.

OUR EVALUATION OF INDUSTRY COMMENTS

Our review showed that the statute in general and the PMR requirement in particular have not had any measurable effect on DOD's reimbursements to defense contractors for their IR&D and B&P expenditures. DOD's payments declined in 1970 and 1971, and CODSIA views this decline as a result of the repressive effect of section 203. A recent DOD study, however, attributed these reductions in IR&D and B&P spending to economic conditions. Our analyses of the correlation between increases and decreases in contractors' sales to DOD and payments for IR&D and B&P supports the DOD study.

Where contractors have accepted reduced ceilings in the negotiation process, it cannot be conclusively determined that these reductions are any more attributable to DOD's interpretation of the law than to economic considerations or the quality of the proposed program. The PMR requirement has not affected the dollar amounts of the negotiated ceilings. This was true for the seven contractors we visited and we were advised that this has been the case for every contractor with an advance payment.

Since enactment of section 203, contractors have referred to vital projects in the national interest which have been dropped from proposed programs because of the PMR requirement. None of the seven selected contractors or CODSIA, however, provided specific examples to support such comments.

We specifically inquired at three companies identified for us by CODSIA. However, company officials could not or would not provide examples of projects they had screened out as nonrelevant, as had been cited in CODSIA's letter. We were advised that company projects had generally been eliminated because (1) short-range payoff potential was lacking, (2) an excessive amount of resources were required to implement the projects, or (3) the projects were not in line with the company's business plan.

We concur that clarification of the intent of the PMR requirement would be helpful. As stated in our April 1972 report, almost any project could be determined to have PMR, even though it may be primarily for commercial or nondefense purposes. We could find no evidence, however, that the requirement has had a repressive effect in view of the lack of dollar impact on contractors' ceilings.

The contractors' contention that IR&D and B&P efforts are emphasizing short-term military needs to the detriment of long-range technology may be valid, whether due to PMR or economic considerations. This appears to be a legitimate concern which we are considering for further study.
(See p. 37.)

CHAPTER 7

RECOMMENDATIONS

Although considerable work is being done to comply with section 203, numerous problems still exist. We recognize that some improvements can be made within the law, and we are making recommendations to DOD. We are also recommending to the Committee that any changes in the law be deferred.

RECOMMENDATIONS TO THE SECRETARY OF DEFENSE

We recommend that DOD improve the administration of contractors' IR&D and B&P programs by:

--Giving guidance to the services which will lead to greater uniformity in determinations of PMR. Such consistent treatment of contractors will provide them with a basis for being more responsive to DOD's requirements in formulating and managing their programs. (See p. 14.)

--Emphasizing timely negotiation of advance agreements, prior to cost incurrence or early in the contractor's fiscal year, to provide the contractor and DOD with an understanding of the costs the Government will accept for reimbursement. (See p. 20.)

--Establishing uniform negotiation procedures and policies so contractors will receive consistent treatment regardless of which service acts as negotiator. (See p. 25.)

--Establishing guidelines that require a quantification of the technical quality of contractors' programs to be uniformly recognized in the negotiation of ceilings with reward or penalty as appropriate. (See p. 18.)

--Requiring the services to maintain complete negotiation files which record the rationale and show the dollar effect of the factors considered in establishing the ceiling. (See p. 25.)

--Eliminating the practice of requiring contractors to spend more than the agreed-to ceiling, since ASPR prohibits cost sharing. (See p. 22.)

--Providing for more timely review of contractors' after-the-fact data, especially of B&P costs, to aid the contractors in expeditiously completing their transactions in a businesslike manner and to provide a basis for subsequent negotiations. (See p. 26.)

RECOMMENDATIONS TO THE COMMITTEE

Our April 1972 report suggested that the Congress clarify section 203. Since issuance of that report, however, the Government's support of IR&D and B&P has been the subject of several intensive studies. Although there obviously are many problems associated with determining DOD's optimum share of contractors' IR&D and B&P, no clear-cut alternative has been devised which would warrant any change in the present statute at this time.

We therefore are recommending that changes in the law be deferred pending thorough consideration of these studies and the suggestions for improvements and alternative actions emanating from them. We plan to use the studies and to continue our examination of the area, considering such matters as:

--Recent recommendations by the Commission on Government Procurement which, if implemented, would affect all Government agencies and their acceptance of contractors' IR&D and B&P programs. (See app. III.)

--Recommendations under consideration by the IR&D Policy Council to improve DOD's management of its IR&D and B&P programs.

--Inequities that may arise when contractors spin off to commercial cost centers products developed under IR&D efforts in cost centers primarily engaged in defense/space work, wherein DOD and NASA absorb most of the IR&D costs.

--Concerns expressed by representatives of smaller companies not required to enter into advance

agreements about the inequity of applying DOD's formula approach to determine the reasonableness of their IR&D and B&P expenditures. They feel that the formula approach, which is based on recent sales and IR&D and B&P costs incurred, is inadequate for young, fast-growing companies. They contend that their right to appeal for an advance agreement is too burdensome and costly. Our study did not include such companies. We plan to look into this matter.

--Alternative means of insuring equitable allocation of IR&D and B&P costs. NASA officials are concerned about the impact that DOD's relevancy test could have on NASA and its contractors. Contractors have expressed concern that, if other Federal agencies applied their own relevancy tests to IR&D and B&P, it could lead to accounting complexities and exclusion from any Government reimbursement of some IR&D and B&P costs believed by the contractor to be legitimate.

--Concerns of Government agencies and contractors about the trend toward increased short-term IR&D and B&P efforts with a corresponding reduction in longer range and innovative research and development. Reasons cited for this trend include the relevancy requirement, tighter Government scrutiny of IR&D, excess capacity in the defense/aerospace industry, and the discretion given defense contractors to interchange IR&D and B&P effort. We want to consider whether the influence of these factors on IR&D and B&P programs has reduced the contractors' incentives for innovative technical effort.

We believe that our examination of such areas of concern will assist the Congress in any future assessment of section 203.

CHAPTER 8

SCOPE OF REVIEW

Our review was directed primarily to determining DOD's progress in implementing section 203, the impact of the relevancy test on contractors, and the reasonableness of the test's application. We also inquired into contractors' concerns to determine whether the restrictions implied by the relevancy test are valid or whether it is only the threat of this constraint causing concern.

Our review covered the treatment of IR&D and B&P efforts at seven major defense contractors--one under the direction of the Army, two under the Navy, three under the Air Force, and one under the Defense Supply Agency. Two contractors were carryovers from our 1971 review, and five were new contractors to provide the coverage requested.

We examined DOD's policies, practices, and procedures for compliance with the legislation. We reviewed records and obtained information from officials responsible for the management and administration of IR&D and B&P in DOD; the Departments of the Army, the Navy, and the Air Force; and the Defense Supply Agency. We also reviewed statistics concerning negotiated advance agreements for 1971 and 1972, contractors' data, and Defense Contract Audit Agency reports. We held numerous discussions with appropriate DOD, military, and contractor personnel at both the field and headquarters levels.

We obtained the views of CODSIA and of contractors included in our examination. We examined the Commission on Government Procurement's recommendations concerning IR&D and B&P and the results of a DOD study directed by the IR&D Policy Council.

Due to time limitations, we did not obtain formal comments on this report from the Secretary of Defense, although we did discuss the report with DOD officials. They agreed in general with our findings and recommendations, and we noted their comments where appropriate.

United States Senate
COMMITTEE ON ARMED SERVICES
WASHINGTON, D.C. 20510

June 5, 1972

Honorable Elmer B. Staats
Comptroller General of the United States
General Accounting Office
Washington, DC 20548

Dear Mr. Staats:

Reference is made to your report number B-167034 dated April 17, 1972, covering Independent Research and Development as implemented by the Department of Defense pursuant to Section 203 of the Fiscal Year 1971 Military Procurement Authorization Act.

The subject report indicated that because DOD implementation had not been completed when the review was made, it was still too early to make a conclusive evaluation of either the actions taken or the effects of the provisions of Section 203. To provide the Committee with a more current and complete status of implementation of Section 203, it is requested that a further examination of these matters be conducted, including the sampling of the activities of additional contractors who were not previously covered.

A report of findings, including appropriate comments and recommendations, should be submitted by March 1, 1973, for consideration of any further actions which may be appropriate in conjunction with the review of the fiscal year 1974 budget. The report also should address recommendations made in the previous report, which have not been acted upon by the Congress, if such recommendations are still valid in the light of more current and complete information.

Sincerely,

John C. Stennis

APPENDIX II

COUNCIL OF DEFENSE AND SPACE INDUSTRY ASSOCIATIONS (CODSIA)

1619 MASSACHUSETTS AVE., N.W.
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(202) 667-0708 and 0709

November 21, 1972

Mr. Osmund T. Fundingsland
Assistant Director
Procurement and Systems Acquisition Division
U. S. General Accounting Office
Washington D. C. 20548

Dear Mr. Fundingsland:

This is in response to your letter of August 23, 1972 requesting the views of the Council of Defense and Space Industry Associations (CODSIA) on Section 203, Public Law 91-441, concerning Independent Research and Development (IR&D) and Bid and Proposal (B&P) costs, and related implementation by the Department of Defense.

Our CODSIA letter of January 31, 1972 to Mr. Lincicome of the GAO, advised that sufficient time had not then elapsed to assess accurately all of the effects of Section 203 and DoD's implementation. Sufficient time still has not elapsed to assess fully all of the implications. Industry has experienced only the negotiation of advance understandings, not the full cycle of actual cost recovery from such understandings. Nevertheless, certain trends continue which are of such significance that consideration should be given to them promptly.

Responsive to your inquiry on the law, it has become increasingly clear that the statute will have a detrimental effect upon the national interest. This effect is contrary to the more recently expressed concerns of the Executive Branch as well as by members of the Congress. For example, in his historic Message to the Congress, March 16, 1972 on Science and Technology, the President stressed the need for technology advancement in solving problems not only for defense but for increased productivity in our national economy and for solution of many of our critical domestic and environmental problems which face the nation. Also in respect to the law, our member companies continue to question the need for a statutory constraint or limitation on selected segments of overhead costs and, in particular, on IR&D and B&P costs. The natural forces of competition, close management controls, and government scrutiny, assure the reasonableness of IR&D and B&P expenditure levels.

We indicated in our January 31, 1972 letter that some evidence of potentially harmful effects of the legislation and DoD's implementation were emerging. Some of these effects are now clearer as contractors continue to encounter the problems discussed below. It is urged that appropriate action be taken promptly to correct these inequities.

1. THE REPRESSIVE EFFECT OF THE REQUIREMENT FOR A POTENTIAL MILITARY RELATIONSHIP UPON HIGHLY INNOVATIVE R&D

A most serious concern regarding statutory and regulatory constraints is the repressive effect of statutory requirement that IR&D and B&P have a "potential relationship to a military function or operation."

Any attempt to determine the usefulness of IR&D and B&P work on the basis of a military relationship test inevitably focuses on today's military problems. This leads to a progressively restrictive interpretation of what constitutes "related" IR&D and B&P and therefore places undue emphasis on meeting only the known military requirements. Such a narrow interpretation is evidenced by DoD determinations that IR&D and B&P costs are not "potentially relevant" when the customer is non-military even though the product or service does have a definite potential relationship to a military function or operation.

Additionally, the potential relationship test will materially restrain the solution of critical national domestic problems in such fields as pollution, transportation, health, and housing. Through recent activities, mentioned earlier, the legislative and executive branches have recognized that technological advance is vital to solving these domestic problems as well as providing for a strong economy, both of which impact on the security of the United States. Therefore, an anomaly exists in the military relationship test of P.L. 91-441 that, whether intended or not, seriously impedes and erodes the vital independent ingredient in contractor funded research and development programs and proposal efforts which may contribute significantly to attaining these high priority national objectives.

The GAO report of April 17, 1972 errs in its conclusion that the test requirement has had no negative effect on non-military oriented effort "because the cost of projects found to be non-related has been relatively insignificant." The report did not deal with the fact that the content of IR&D and B&P programs can be adversely affected prior to their formal submission for DoD scrutiny and evaluation. Proposed IR&D is screened-out as non-related by company management at an early stage of its IR&D program formulation in order to make its program responsive to the requirements of P.L. 91-441. It does not take long before the system becomes conditioned. Engineers and scientists will then

more and more refrain from proposing work which may be difficult to prove to be "potentially related." It is this cumulative, repressive effect that industry regards as highly inimical to the national interests, and irreconcilable with increasing Congressional and Presidential concerns to stimulate the transfer of defense technology to the solution of problems in the civilian sector and to encourage private sector research and development.

In summary, the restrictive nature of the statutory requirement is contrary to broader national interests. It is strongly recommended that the statute be amended to replace the military relationship test with a requirement for potential relationship to the interests of the U.S. Government.

2. ARBITRARY REDUCTION OF CONTRACTOR'S PROPOSED IR&D AND B&P PROGRAM COSTS RECOVERABLE UNDER GOVERNMENT CONTRACTS

It is clear that while Congress desired an improved understanding and control of IR&D and B&P expenditures recoverable under DoD contracts, it further recognized that continuance of such efforts is in the national interest. Unfortunately, experience shows that many DoD people are laboring under the impression that Congress in desiring better "control" has, in fact, mandated a continuing yearly reduction in the national total of IR&D and B&P costs reimbursed to contractors irrespective of national needs and priorities. With this assumed "mandate" as a guide, and despite long established DoD technical evaluation criteria and allowability criteria, such reductions have been primarily accomplished by establishing internal DoD pricing objectives which result in arbitrarily imposed ceilings which often result in cost sharing of otherwise reasonably incurred and allocable IR&D and B&P expenses.

The selective use of this arbitrary technique, coupled with the threat of "failure to agree" (discussed in our letter of January 31,1972), results in a reduction in the total amount of IR&D and B&P costs recovered under DoD contracts.

The actual dollar reductions reflect only part of the real impact of these cost reductions upon technical effort. As shown in the attached chart (TAB A), the dollar totals for IR&D and B&P have declined some 8% (in real dollars) since 1969. However, the additional effects of increased costs for labor and materials and rising overhead rates (as a consequence of the decline in business level) have combined to reduce the direct manhour effort by 24% over the three years. This serious decline in technical effort is a very disturbing trend, especially when recognized as being a reduction of a vital national resource.

In summary, in view of the growing recognition of the national need to maintain and advance technology, the inevitable attrition of technical effort due to rising costs must not be compounded by narrow interpretation of Congressional desires.

3. TECHNICAL EVALUATION OF IR&D PROGRAM

The April 17 GAO report states: "In view of the time and cost required to make on-site reviews, we believe that after a contractor's program has once been subjected to a thorough on-site review, the annual reliance thereafter on paper (brochure) reviews, augmented periodically with on-site reviews, is a reasonable practice." This conclusion overlooks the fact that much time and effort are spent endeavoring to state, clearly and concisely, the objective and technical approach being pursued by a contractor's principal scientists and engineers. As a consequence, the total costs, in many cases, for brochure preparation, publications, and supporting services, far exceed the more visible costs normally associated with on-site reviews. Conversely, the lack of discussion and the corresponding need to anticipate and address the evaluator's every question, when the paper (brochure) review is the only medium of communication, usually result in inadequate reviewer understanding. Further, the government reviewer's ability to offer constructive comment on the contractor's work is limited to a sentence or two on his IR&D project evaluation form, and such comments may never reach the contractor. There is evidence that on-site evaluations result in a substantially better understanding by the government of contractor's technical activities than can be drawn solely from brochures and related data banks.

It is clearly in the national interest to provide for an effective two way flow of technical evaluation information. The use of the DoD established technical rating by the DoD negotiators in establishing dollar ceilings for IR&D work makes this imperative. Thus, the key problem to be addressed is how to obtain an economical but effective review of at least the key elements of a contractor's IR&D program. It is understood that the DoD is now considering improved ways of conducting technical evaluations, and our member companies strongly support improvement in this area.

We have not provided specific examples to support our comments since such case examples frequently would require disclosure of information which companies consider private. In all probability, some examples may have already been furnished to GAO representatives during the selected company audits now underway. However, other individual member companies of the CODSIA will be pleased to furnish your field auditors with such examples if that should be necessary.

CODSIA appreciates the opportunity to comment once again upon Section 203, P.L. 91-441 and its implementation, and to have our letter made a part of the GAO report to Congress. CODSIA representatives will be available to discuss our letter and to clarify any aspects. Please do not hesitate to contact us if you desire further information.

Very truly yours,

James G. Ellis, Manager
Defense Liaison Department
Motor Vehicle Manufacturers Assn.

George E. Lawrence
Executive Vice President
Scientific Apparatus Makers Assn.

J. A. Caffiaux
Staff Vice President
Electronic Industries Assn.

Robert E. Lee
President
National AeroSpace Services Assn.

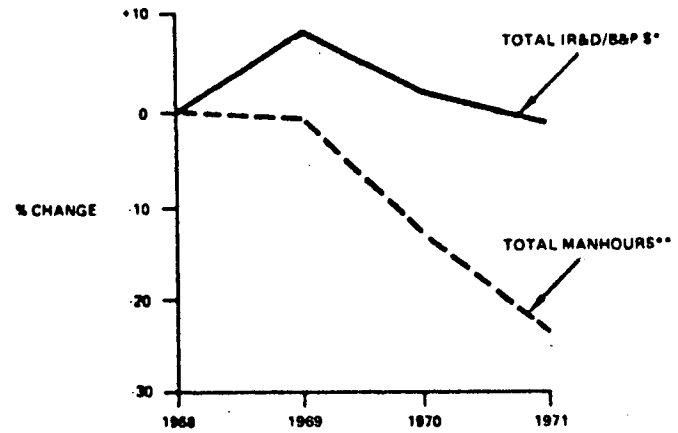
Karl G. Harr, Jr.
President
Aerospace Industries Assn.

Edwin M. Hood
President
Shipbuilders Council of America

Joseph M. Lyle
President
National Security Industrial Assn.

John C. Beckett
WEMA

TRENDS OF IR&D/B&P - 1968-1971



*DOD DATA REPORTED TO CONGRESS

**RESULTS OF AIA SURVEY - 22 COMPANIES

Extracted from:

AEROSPACE INDUSTRIES ASSOCIATION

RECOMMENDATIONS TO DOD IR&D POLICY COUNCIL, MAY 2, 1972

RECOMMENDATIONS ON IR&D AND B&P AND DISSENTING POSITIONS AS SUMMARIZED BY THE COMMISSION ON GOVERNMENT PROCUREMENT

Recommendation 10. Recognize in cost allowability principles that independent research and development (IR&D) and bid and proposal (B&P) expenditures are in the Nation's best interests to promote competition (both domestically and internationally), to advance technology, and to foster economic growth. Establish a policy recognizing IR&D and B&P efforts as necessary costs of doing business and provide that:

(a) IR&D and B&P should receive uniform treatment, Government-wide, with exceptions treated by the Office of Federal Procurement Policy.

(b) Contractor cost centers with 50 percent or more fixed-price Government contracts and sales of commercial products and services should have IR&D and B&P accepted as an overhead item without question as to amount. Reasonableness of costs for other contractors should be determined by the present DOD formula with individual ceilings for IR&D and B&P negotiated and trade-offs between the two accounts permitted.

(c) Contractor cost centers with more than 50 percent cost-type contracts should be subject to a relevancy requirement of a potential relationship to the agency function or operation in the opinion of the head of the agency. No relevancy restriction should be applied to the other contractors.

Dissenting Position 1

A number of Commissioners* do not support the concept presented as the Commission position, although they accept the opening paragraph and subparagraph (a) of Recommendation 10. They believe that the propriety and feasibility of subparagraphs (b) and (c) are questionable. Their opinion is that subparagraph (b), if adopted, would result in increased costs of between $50 million and $100 million annually. Furthermore, it may encourage contractors to realign their organizations in order to quality under the 50-percent rule, thus leading to even greater annual DOD costs for IR&D.

Under subparagraph (c), a number of small companies (particularly those engaged in research and development work) may fail to qualify under the 50-percent rule and thus would become subject to the test of relevancy. They conclude that this subparagraph would complicate administration of the program and would penalize these small business firms.

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*Commissioners Chiles, Holifield, Horton, Staats, and Webb.

Dissenting Position 1 is intended to retain the current DOD procedure covering IR&D and B&P costs, which was adopted pursuant to Section 203 of the Fiscal Year 1971 Military Procurement Authorization Act. Subparagraph (d) was added in the dissenting position to enable the Government to obtain assurance that IR&D and B&P costs are allowable, as explained below.

Dissenting Recommendation 10. Recognize in cost allowability principles that IR&D and Bid and Proposal expenditures are in the Nation's best interests to promote competition (both domestically and internationally), to advance technology, and to foster economic growth. Establish a policy recognizing IR&D and B&P efforts as necessary costs of doing business and provide that:

(a) IR&D and B&P should receive uniform treatment, Government-wide, with exceptions treated by the Office of Federal Procurement Policy.

(b) Allowable projects should have a potential relationship to an agency function or operation in the opinion of the agency head. (These will be determined in the negotiation of advance agreements with contractors who received more than $2 million in IR&D and B&P payments during their preceding fiscal year.)

(c) Agency procurement authorization and appropriation requests should be accompanied by an explanation as to criteria established by the agency head for such allowances as well as the amount of allowances for the past year.

(d) A provision should be established whereby the Government would have sufficient access to the contractor's records for its commercial business to enable a determination that IR&D and B&P costs are allowable.

(e) In all other cases, the present DOD procedure of a historical formula for reasonableness should be continued.

(f) Nothing in these provisions shall preclude a direct contract arrangement for specific R&D projects proposed by a contractor.

APPENDIX III

Dissenting Position 2

One Commissioner* believes that in addition to the prime and dissenting recommendations mechanisms exist that, if adequately explored, may offer reasonably acceptable solutions to the IR&D dilemma.

He believes the current IR&D process is an attempt to balance the need to stimulate innovation against the need for reasonable control over the funds channeled into such R&D endeavor, and the argument that funds spent to finance IR&D effort cycle back into the economy is in many ways valid and desiring of much broader understanding.

To meet this objective he proposes eleven alternative devices that should be explored on a test case basis, either singly or in various combinations, by various agencies to determine their suitability as mechanisms to replace the current IR&D and B&P procedure. Commissioner Sampson also recommends that these alternatives be explored.

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*Commissioner Sanders.

APPENDIX IV

SUMMARY OF PERTINENT IR&D AND B&P

COST INFORMATION

FOR THE SEVEN CONTRACTORS REVIEWED

Responsible negotiating organization	Contractor	Year	Month of final agreement	Proposed program	Negotiated ceiling	
					Amount	Percent of program
				(000,000 omitted)		
Army	A	1970	May 1970	$39	$37	94
		1971	Oct. 1971	39	37	94
		1972	Apr. 1972	39	34	87
Navy	B	1970	Aug. 1970	34	31	90
		1971	Aug. 1971	35	31	89
		1972	June 1972	35	33	93
Navy	C	1970	June 1970	9	8	85
		1971	Mar. 1971	7	7	99
		1972	Mar. 1972	9	8	89
Air Force	D	1970	Mar. 1970	45	35	76
		1971	Dec. 1971	35	28	81
		1972	Apr. 1972	39	34	86
Air Force	E	1970	Aug. 1970	31	26	83
		1971	June 1971	32	26	81
		1972	Dec. 1971	32	28	87
Air Force	F	1970	Dec. 1970	6	6	89
		1971	Dec. 1971	7	6	82
		1972	Nov. 1972	11	7	66
Defense Supply Agency	G	1970	Dec. 1970	3	2	61
		1971	Dec. 1971	6	5	84
		1972	July 1972	6	6	100

APPENDIX IV

SUMMARY OF PERTINENT IR&D AND B&P

COST INFORMATION

FOR THE SEVEN CONTRACTORS REVIEWED

Technical evaluation		Sales (note a)			Percentage of ceiling to total sales
Score	Scale used	Total sales	DOD sales	DOD percent	
		(000,000 omitted)			
(b)	(b)	$758	$577	76	5
2.4	4 point	758	583	77	5
(b)	(b)	780	645	83	4
(c)	(c)	973	739	76	3
(c)	(c)	770	618	80	4
(c)	(c)	740	596	81	4
54.8	100 point	103	72	70	8
63.0	100 point	116	69	60	6
7.12	10 point	165	95	58	5
3.68	5 point	409	288	70	9
3.70, 6.50	5 and 10 point	513	413	81	5
(b)	10 point	745	562	75	5
3.7	5 point	760	735	97	3
3.62	5 point	714	673	94	4
6.41	10 point	647	600	93	4
3.56	5 point	176	173	98	3
3.44, 6.09	5 and 10 point	166	161	97	4
7.55	10 point	216	212	98	3
3.0	5 point	73	52	72	3
3.0	5 point	75	53	71	7
2.7	5 point	80	56	70	8

[a]1972 sales are estimates.

[b]Not available.

[c]A composite technical evaluation score was not furnished to the Navy contractor negotiator.