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UNITED STATES GENERAL ACCOUNTING OFFICE
 REGIONAL OFFICE
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 GOVERNMENT CENTER
 BOSTON, MASSACHUSETTS 02203



July 19, 1976

Mr. Arthur Schoenhaut, Executive Secretary
 Cost Accounting Standards Board
 441 G Street, N.W.
 Washington, D.C. 20548

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Dear Mr. Schoenhaut:

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Enclosed is a draft of our report to Senator Proxmire on our study of contractors' investment in work in process under selected fixed-price Government contracts. We are sending you a copy because of its relationship to the proposed cost accounting standard on the Cost of Money as an Element of the Cost of Capital.

On December 5, 1975, the Cost Accounting Standards Board released a draft cost accounting standard on the Cost of Money as an Element of the Cost of Capital. With respect to operating capital, the purpose is to estimate the average operating capital requirements of a contract by relating projected contract costs and profits to the time required to recover these costs and profits from the Government procurement activity or finance office. The contract operating capital will then become the base to which the cost of money will be applied. This will serve to reimburse the contractor by imputing interest on his investment in the contract.

The draft standard recognizes the possibility of using two distinct methods for computing the amount of operating capital allocable to a specific contract. The methods are the "business unit average method" and the "specific contract method". The Board designed a proposed form for the "specific contract method". The form deals separately with costs and profits and allows for different contractual cost reimbursement or payment patterns. An adjustment factor was also developed for accounts payable. In our opinion, the many variables which influence contractor cash flow make it difficult to design an effective abbreviated form such as the one being proposed by the Board.

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To test the Board's technique, we completed the form using data obtained from the aircraft engine contract included in our study and compared the results with the output of the computerized contract financing model. Our comparison showed significant differences which were discussed with your staff on June 9, 1976.

Although the computerized contract financing model makes certain assumptions, we believe it results in a more accurate computation of the amount of operating capital required by a specific contract. Accordingly, we believe that the Board could effectively use the model in developing its standard for imputing interest on operating capital.

One potential application of the model is to use it on an after-the-fact basis to determine a contractor's average investment in the operating capital of a contract. However, we have not as yet determined the administrative costs associated with using the model in this manner. If the administrative costs are determined to be excessive, we believe the model could be used to evaluate the reasonableness of any abbreviated technique the Board may design for computing contractor investment in working capital.

We appreciate the interest shown by your staff in our findings and would be pleased to discuss this matter further with you and your staff if you desire.

Sincerely yours,

Regional Manager

Enclosure

cc: Director, PSAD (w/o encl.)
Deputy Director, PSAD/CP (w/o encl.)

The Honorable William Proxmire
United States Senate

Dear Senator Proxmire:

Reference is made to our letter (B-140389) to you dated August 21, 1975. Our letter was in response to your May 21, 1975, request that we evaluate the impact of a proposed increase in the rates of progress payments made to contractors under Department of Defense (DOD) contracts.

In our response, we pointed out that the change in progress payment rates was delayed. We also expressed concern with the possibility that some contractors may already have negative investments under the current progress payment rate. Our concern was based on a Defense analysis of the cash flow of a hypothetical contract using a computerized mathematical model. We stated that we intended to obtain actual cash flow data under selected contracts and to use the model to process the actual data. On November 25, 1975, DOD withdrew its recommendation for increasing the progress payment rates. The reason for the withdrawal is that DOD initiated a study of defense contractors' profits, entitled Profit '76, which could have a significant effect on the financial posture of defense contractors.

The purpose of this letter is to apprise you of the results of our study.

SUMMARY

We used the model to process the actual data on three fixed price contracts of three different contractors. The results show that two contractors had negative investments in their contracts and the third

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contractor had a positive investment. The Air Force also processed six airframe contracts and the results show an average negative investment by the contractors. Although the sample is small, we believe that the results clearly show that the progress payment rate should not be increased.

The contract financing model can also be used to evaluate contractors' requests for unusual progress payments and to identify instances of over-financing by the Government. Also, by utilizing the model's sensitivity analysis capabilities, it can provide information on which Defense contract financing decisions can be made.

DEPARTMENT OF DEFENSE
CONTRACT FINANCING POLICY

The Department of Defense contract financing policy is that Government financing should be provided only if, and to the extent, reasonably required for prompt and efficient performance of Government contracts and subcontracts. Certain contracts, involving large amounts and a long period between the beginning of work and billing for the product can have a significant impact on a contractor's working funds. Defense procurement regulations appear to recognize this fact by providing progress payments to contractors as a means of sharing the prebilling costs.

Although the Defense progress payment concept and implementing instructions are basically sound, there have been problems in establishing how much financing should be borne by the Government and by the contractors. The problems are caused by the number of variables, cited below, that affect the extent of a contractor's cash investment in a contract.

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DESCRIPTION OF THE CONTRACT
FINANCING MODEL

A contract providing for progress payments is financed by a number of sources including:

- contractor's cash investment,
- profit, if partial deliveries are made,
- government progress payments,
- accrued salaries and wages,
- amounts owed vendors and subcontractors, and
- bank float on checks written but not cleared through the contractor's bank.

The model recognizes these sources and application of funds on a daily basis during the life cycle of a contract. The model also accepts as input the other known constraints and variables which influence cash flow:

- progress payment rate,
- liquidation rate,
- frequency of a contractor's request for progress payments,
- elapsed time between a contractor's request for and receipt of progress payments,
- elapsed time between the incurrence of various types of costs and their payments, and
- bank float time.

An output of the model is the average dollar amount and percent of total financing provided by each source; i.e., contractor, profit, Government, vendors and subcontractors, labor force, and banks. The

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model can also be used to perform sensitivity analyses by changing the constraints and variables listed above. Sensitivity analyses would provide Defense with information which might otherwise not be available but which should be considered in any Defense contract financing decisions.

We believe the procedures for calculating cash flow in the model are conceptually sound. However, it is important to note that the model does not purport to measure the investment of a contractor in his total defense business. Rather, the term 'investment' as used in the context of this study refers to investment in a specific contract only. It is assumed that the contractor has facilities and equipment available for performance of the contract as a prerequisite for contract award. This is the logical focus of any analysis of contract financing since Government pre-delivery payments are not intended to finance total investment in facilities and equipment but only depreciation or amortization properly allocable to the contract.

RESULTS OF STUDY

We selected three fixed price contracts that provided for partial deliveries and were either recently completed or more than 80 percent complete and were reasonably close to target cost. This study did not include shipbuilding contracts and cost-type contracts. Contracts for shipbuilding provide for progress payments based on a percentage or stage of completion of the specified work and, under cost-type contracts, reimbursement is at 100 percent of allowable costs incurred.

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The contracts in the study are for three difference product lines--- missiles, aircraft engines, and electronics. Following is a summary of pertinent data.

	<u>Missiles</u>	<u>Aircraft Engines</u>	<u>Electronics</u>
Percent complete at 12/31/75	83	100	83
Period of performance (months)	38	22	29
Target cost (millions)	\$162	\$48	\$20
Progress payment rate	80%	80%	80%

For each of the three contracts, we obtained (1) actual costs for each accounting period during the contract performance period, (2) the type of costs incurred, (3) the frequency the contractor paid the various types of expenses, (4) the average lag from the time checks were written until they cleared the contractor's bank, and (5) the actual dates and amounts that progress payments and invoice payments were received by the contractor from the Government.

The Air Force has recently completed a similar study on six airframe contracts performed by two contractors. The six contracts included in the Air Force study were selected by the two contractors and provided for a progress payment rate of 80 percent. Similar data to what we obtained in our study was developed and furnished by the contractors.

The percent of financing provided by the various sources of the three contracts we studied and the average of the six contracts the Air Force studied is shown below.

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PERCENT OF FINANCING

FINANCING SOURCE	Aircraft ^{1/}			
	Missiles	Engines	Electronics	Airframe
Government	77.2	68.9	71.7	67.0
Contractor	11.9	-3.2	-2.2	-1.0
Creditors/Labor	3.9	15.5	12.4	11.0
Profit	5.9	16.1	15.3	22.4
Bank Float	1.1	2.7	2.8	.6
	100.0	100.0	100.0	100.0

1/Average of six contracts

Controversy exists as to whether profit should be considered as contractor or Government investment. One view is that all payments including profit represent cash provided by the Government. Stated another way, the contract generated sufficient cash flow for contract performance without the need for the contractor to borrow funds or to utilize cash otherwise extraneous to the contract. Such funds would thereby be available for other purposes. The opposing view is that payments for profit are proprietary to the contractor and should be considered as contractor cash financing. The rationale for this view is that the profit has been earned by the contractor and is available for investment in the contract if the contractor sees fit.

A similar controversy exists regarding bank float. Bank float is defined as the difference between the balance shown in the contractor's checkbook and the bank's records. Based on our study, it takes about 5 days for checks to clear a contractor's bank account. The model assumes the contractor can utilize bank float on certain types of expenses. One view is that bank float is not necessarily used by contractors and there-

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fore should be added to contractor financing. Another position is that bank float is available for use and, accordingly, should be considered as a separate financing source.

As shown above, the contractors' investments, excluding profit and bank float, ranged from a negative 3.2 percent to a positive 11.9 percent, with the majority being in a negative position. There are a number of reasons for this range such as the mix of labor and material costs, the contractors' payment policies, and the stage of contract completion at December 31, 1975, the cut-off date of our study. Since progress payments are limited to cash payments made for items purchased directly for the contract and for other items on the basis of accrued costs, a material intensive contract increases the contractor's investment. Also, a contractor's investment increases if he pays his vendors, for example, every 15 days versus 30 days. Our study further indicates that as a contract nears completion and deliveries are made profit financing increases and contractor financing decreases.

CONCLUSIONS

Although our study was based on a limited number of contracts, we believe that the results clearly show that the standard 80 percent progress payment rate should not be increased. Further, since the Armed Services Procurement Regulations provide for giving a contractor a rate higher than the standard rate in unusual circumstances if the contractor can demonstrate fully his actual need, we believe that the contract financing model can be used effectively to evaluate contractors'

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requests for unusual progress payments.

We also believe that Defense should recognize the utility of the model for other purposes; such as, identifying instances of over-financing by the Government and determining through sensitivity analyses the feasibility of varying the standard progress payment rate, the liquidation rate, and Government payment frequency.

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We are sending copies of this report to the Chairman, Subcommittee on Federal Spending Practices, Efficiency, and Open Government, Senate Committee on Government Operations; the Director, Office of Management and Budget; and, the Secretary of Defense. Since the model has potential for use by other agencies concerned with contractors' investment related to Government procurement, we are also sending copies of this report to the Chairman of the Renegotiation Board and to the Executive Secretary of the Cost Accounting Standards Board.

Sincerely yours,

Comptroller General
of the United States

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July 16, 1976

Deputy Director, PSAD/GP - John P. Flynn

Assistant Regional Manager, Boston - Paul M. Foley

Review of contractors' investment in work in process
under selected fixed price contracts.

Here is our referenced draft report on the subject review. The Air Force has not yet officially released its data we included in the report, but we expect the release during your processing. Also, the FGMS staff has been reviewing the model and we expect you will receive a favorable report from them soon.

Another potential application of the Air Force contract financing model we want to bring to your attention relates to GAO reviews of the Lockheed Aircraft Corporation guaranteed loan under the Emergency Loan Guarantee Act, 1971 (15 U.S.C. 1841, Supp. I, 1971). We believe PSAD should consider using the model in examining Lockheed's cash flow and revenues. We would be pleased to discuss this further with you and to assist, if you agree.

Attachment: as stated

cc: Director, PSAD