

GAO

Report to the Chairman, Subcommittee  
on Defense, Committee on  
Appropriations, U.S. Senate

# GOVERNMENT CONTRACTING

## Compensation of Defense Contractors Working Capital Financing Costs



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United States  
 General Accounting Office  
 Washington, D.C. 20548

National Security and  
 International Affairs Division

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January 31, 1990

The Honorable Daniel K. Inouye  
 Chairman, Subcommittee on Defense  
 Committee on Appropriations  
 United States Senate

Dear Mr. Chairman:

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As requested, we reviewed the Department of Defense's (DOD) profit policy to determine whether it appropriately considers a contractor's working capital costs by taking into account the important factors that affect working capital.

DOD's profit policy includes a provision to recognize the millions of dollars defense contractors incur annually in financing working capital costs on fixed-price contracts. Working capital costs consist of the contractor's work in process costs—material, labor, and overhead—that are not financed through progress payments<sup>1</sup> or other payments. In negotiating contract prices, DOD does not attempt to prepare an exact calculation of such costs, but instead tries to give general recognition to the contractor's working capital costs under varying contract circumstances, financing policies, and economic environments. If DOD's policy does not appropriately consider a contractor's working capital financing costs, it could affect contract profits, either to the contractor's or the government's disadvantage.

DOD's policy generally recognizes the important factors that affect contractors' working capital financing costs. Our analysis of a sample of contracts showed that in the aggregate the policy resulted in approximately the right amount of these financing costs being included in the profit objective. That is, the costs likely to be incurred during the life of the contract were close to the amounts estimated by DOD. While this was true in the aggregate, there were differences of 10 percent or more in most of the individual contracts between DOD's estimate and our estimate of working capital costs. On individual contracts, therefore, if contracting officers do not adjust for the specific circumstances of that contract, too much or too little profit could be included in the contract price.

<sup>1</sup>Progress payments are used by DOD to finance a certain percentage of a contractor's work-in-process on fixed-price contracts through monthly reimbursements of allowable costs incurred.

## Results in Brief

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Because working capital is just one element used in determining contractor profit objectives, these adjustments for working capital financing costs would generally not be large in relation to the total contract price. In some of our sample cases, however, our analysis showed differences of close to \$1 million in the contract price, comparing DOD's estimate to ours. We believe that DOD contracting officers need to carefully consider whether adjustments are needed in working capital financing costs to more closely approximate cost actually incurred.

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## Background

DOD's profit policy consists of a set of structured guidelines that are used by its contracting officials to establish a profit objective for contract negotiating purposes. The working capital profit factor is one element included in the profit objective.

DOD revised its profit policy in October 1986. Before this revision, the policy only recognized contractors' financing expenses implicitly as an undefined portion of the contract risk profit factor. The revised policy, for the first time, enables a contracting officer to include an explicit amount in the total profit objective for a contractor's forecasted costs of financing working capital.

DOD developed a simplified calculation that negotiators can use to determine the element representing the working capital profit factor to be included in the overall contract profit objective. This calculation considers (1) the contractor's estimated working capital costs (estimated total contract costs less progress payments), (2) the 6-month Treasury rate, and (3) the contract length<sup>2</sup> and the timing of delivery payments to contractors. In determining the overall working capital profit objective, DOD's policy provides general guidance that calls for adjustments to be made for scheduled delivery payments<sup>3</sup> and other factors that would reduce contractor working capital requirements.

Data on the negotiated profit objective for the working capital profit factor were not available when our review was initiated. However, according to DOD's data, 2,015 negotiated fixed-price contracts were awarded in fiscal years 1985-87, which would likely be subject to the working capital profit factor in DOD's profit policy.

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<sup>2</sup>The contract length factor represents the period of time that the contractor has a working capital investment in the contract.

<sup>3</sup>Delivery payments consist of the price for the items delivered less progress payments. The funds received as part of the delivery payment reduces the contractors' financing requirements.

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We sent a questionnaire to contractors to collect data on expected working capital costs. Using this data, we estimated working capital costs on these contracts and compared it to the working capital profit factor derived from using the current profit policy. (See app. III for examples of our computation of projected working capital financing costs.)

Our purpose was to evaluate the relationship between the amount of working capital profit factor that would be established in a profit objective using DOD's profit policy and the predicted working capital financing costs for a sample of DOD contracts.

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## DOD's Working Capital Profit Factor Accurate Overall, but Not for Individual Contracts

In our study, we applied DOD's current profit policy methodology to the delivery payments and spending plan data obtained on contracts in our sample. We concluded that DOD's methodology, in total, would result in about the same amount of financing cost that we estimated contractors would incur. Therefore, in terms of generally recognizing the important factors that affect contractors' working capital financing costs, the policy achieves its goal. However, the impact on individual contracts varied—our analysis showed that DOD's policy underestimated the working capital financing costs on many contracts and overestimated the working capital on many other contracts.

Our analyses of the relationship between the working capital profit objective in DOD's current policy and contractors' expected financing costs<sup>4</sup> are based on contracts that provided detailed data about the expected timing of contract expenditures. Based on the contractors' monthly unreimbursed costs, we estimated the total working capital financing costs for these contracts to be about 1.4 percent of the total contract costs. Applying DOD's methodology to the contract data collected indicated that profit objectives also would be about 1.4 percent of the total contract costs in the aggregate.

We compared the profit objective and the financing costs on each contract by subtracting the estimated working capital profit objective from the predicted financing costs on a contract-by-contract basis. For approximately 87 percent of the contracts, representing about 80 percent of the projected dollar value, or \$25 billion, inaccuracies of 10 percent or more in working capital profit objectives would result under

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<sup>4</sup>We used a progress payment rate of 80 percent and an interest rate of 8.5 percent in calculating financing costs. We chose these rates because they were in effect at the time DOD revised its policy. Future changes in the progress payment rates and interest rates would not alter the relationships studied (i.e., DOD's working capital adjustment factor and contractor's expected financing costs).

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DOD's current policy. For contracts that had a total value of about \$12 billion, the working capital profit factors would be underestimated by a factor of 10 percent or more, whereas for contracts with a total value of about \$13 billion, the working capital profit factors would be overestimated by a factor of 10 percent or more. These variations result because DOD's working capital profit factor does not adequately consider the effects of the timing of contract cost expenditures and their relationship to delivery payments.

DOD's methodology and guidance recognize in a general way that delivery payments reduce working capital financing costs. It simplifies the calculation of working capital costs by assuming that the average time elapsed between incurring costs and receiving delivery payments is the same for all contracts with delivery schedules of a similar length. The projected cost expenditure data from our sample contracts, however, show that the level of expenditures varies from month to month. Variations in the timing of these cost expenditures and delivery payments affect financing costs in ways that are not accounted for by the DOD working capital profit factor.

DOD's guidance instructs the contracting officer to make adjustments under certain circumstances. For example, the guidance states that "the contracting officer may adjust [contract costs] where the contractor has a minimum cash investment."

While the guidance provides the latitude to make these adjustments, the policy does not provide specificity as to when and how to consider the variations in the timing of cost expenditures and delivery payments. For example, discussions with contracting officers and pricing analysts indicated that DOD's profit policy does not provide them with guidance that would enable consistent adjustments to contract costs and contract length. Therefore, the necessary adjustments to contract costs and contract length may not always be made. These adjustments should be made because they reduce the contractor's financing requirements.

The following examples show how the timing of contractor cost expenditures and delivery payments on two contracts affect the amount of financing costs even though contract costs and adjusted contract length are similar. Additional details on these examples are contained in appendix III. These examples highlight the methodology used in preparing this report.

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On one contract with a cost of \$121 million, and an overall length of 55 months, we calculated working capital financing costs of \$2.8 million, whereas application of DOD's profit policy showed that financing costs would be \$2.4 million.

During the first half of the 55-month contract, before any deliveries were made, the contractor incurred about 70 percent of the contract costs. During the final 26 months of the contract, the contractor incurred the remaining 30 percent of contract costs. In months 29 and 30, the contractor received payments for deliveries made. These deliveries accounted for 50 percent of the value of the items to be delivered. Two other deliveries were made, one in month 39 and one at the end of the contract. Under this contract, the contractor would incur higher working capital costs during the first half of the contract and significantly lower costs thereafter.

Unless adjustments are made to the working capital profit factor, application of DOD's methodology would result in a lower profit objective because it does not recognize that the contractor's investment was much higher during the first half of the contract than the second half.

In contrast, on another contract with a cost of \$118 million and an overall length of 48 months, we calculated working capital financing costs of \$1.2 million. DOD's profit policy would have allowed an amount for working capital financing costs of \$2.3 million. On this contract, only about 20 percent of total contract costs were incurred during the first half of the contract. Deliveries began at about this point and continued throughout the remainder of the contract.

DOD's methodology, unless adjustments are made, would result in over-recognition for working capital financing costs on this contract because it does not recognize that the contractor's investment was not very significant during the first half of the contract. Delivery payments later reduced the amount of the contractor's investment.

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## Conclusions

DOD awards contracts each year involving many millions of dollars in working capital profit. DOD's profit policy of generally recognizing working capital appears to provide for profit objectives that approximate working capital financing costs on contracts in the aggregate. We found, though, that if DOD's methodology is applied without adjustments there can be significant variations on individual contracts. Current guidance provides general instructions on when and how such adjustments should

be made, and DOD acknowledges the importance of contracting officers using their judgment to make adjustments.

When we initiated our review, the working capital profit policy had not been in effect long enough for data on actual working capital cost to be available. Our finding that the policy in the aggregate seems accurate but can result in sizable variations on individual contracts, is based on our analysis of projected contractor working capital needs. We believe it will be important for DOD to monitor actual experience with the policy to ensure that both the government and individual contractors are treated equitably under the policy.

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## Agency Comments

DOD did not agree with the findings and recommendation contained in a draft of this report. Our draft report proposed that DOD revise its methodology for determining the working capital profit factor.

DOD stated that the working capital profit factor was intended to give general recognition to some factors that affect contractors' costs for working capital under varying circumstances, not to calculate these amounts precisely. We recognize that the working capital profit objective is only one part of the overall profit policy and further that overall profit on negotiated contracts can represent only a portion of contract price. The report has been revised to more clearly present this.

DOD stated that the policy relies heavily on the contracting officer's judgment in adjusting the values of the various components that are used to develop the factor. We agree that the contracting officers should use their judgment in establishing the values of the various components that are used to develop the factor.

Because of this and because of the limited actual experience with the new policy at the time of our review, we are not making any recommendations in this report. We believe, however, that DOD needs to monitor the implementation of the policy over time to assure that it results in equitable, consistent treatment of working capital financing costs.

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We plan to distribute this report to interested parties and make copies available to others upon request.

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This report was prepared under the direction of Mr. Paul F. Math, Director, Research, Development, Acquisition and Procurement Issues, who may be reached on (202) 275-4587 if you or your staff have any questions. Other major contributors to this report are listed in appendix V.

Sincerely yours,

A handwritten signature in cursive script that reads "Frank C. Conahan".

Frank C. Conahan  
Assistant Comptroller General

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**Abbreviations**

DFAIR	Defense Financial and Investment Review
DOD	Department of Defense

# Defense Contractors' Working Capital Financing Costs

## Background

DOD revised its profit policy in October 1986 to include for the first time, a profit factor to recognize explicitly contractors' costs of financing working capital for work in process costs—material, labor, and overhead.

DOD's profit policy is applied to contract actions where price is to be negotiated.<sup>1</sup> The profit policy provides a range of profit factors applied by DOD contracting officials to several categories—contract performance, contract risk, and facilities capital employed—to arrive at a total profit objective used in negotiating contract profit. The working capital profit factor is part of the contract risk element.

The working capital profit factor applies to fixed-price contracts for which progress payments are authorized. The profit policy provides an implicit working capital profit factor for contracts that do not receive progress payments.

In fiscal years 1985-87, DOD's data indicated that it negotiated 2,015 fixed-price contracts for which progress payments were authorized.<sup>2</sup> Table I.1 presents a breakdown of these data by years.

**Table I.1: Summary of Fixed-Price Contracts With Progress Payments**

<b>Fiscal year</b>	<b>Number of contracts</b>	<b>Authorized customary progress payment rate (percent)</b>
1985	676	90 to 80a
1986	662	80
1987	677	75
<b>Total</b>	<b>2,015</b>	

<sup>a</sup>Progress payment rate decreased from 90 to 80 percent on May 1, 1985. The progress payment rate decreased from 80 to 75 percent on October 18, 1986.

Source: Data from DOD Form DD-350 (Individual Contracting Action Report).

Fixed-price contracts can be eligible for either customary progress payment rates at the rates shown in table I.1, or flexible progress payment rates, which are higher than the customary rate. Flexible progress payments are designed to recognize that working capital financing costs

<sup>1</sup>The profit policy applies to contract actions where price is to be negotiated and the contract action is valued at \$500,000 or more. DOD issued the revised profit policy initially on an interim basis, effective October 1986. It was issued, with some changes, as a final rule, effective August 1987.

<sup>2</sup>See note under source in table I.1.

may be higher than those costs anticipated by customary progress payment rates when considering the time difference between when contractors pay for costs incurred and when they are reimbursed for these expenses. Contractors may then qualify for a flexible progress payment rate that is higher than the customary rate. To determine the flexible rate, DOD has developed a computer program that uses contractors' projections of monthly incurred cost and delivery data over the contract life. These data are audited by the Defense Contract Audit Agency. According to DOD officials, the data necessary to establish flexible progress payment rates are generally submitted before the negotiation of contract price.

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### Why a Working Capital Profit Factor Is Needed

DOD's move to include an explicit working capital profit factor into the profit policy stemmed from the Defense Financial and Investment Review (DFAIR). DFAIR was a DOD study of the integrated effect of contract pricing, financing, and profit, which was completed in June 1985.

Historically, the government has not recognized interest costs as an allowable contract cost. Instead, the government has found it economical to provide financing to contractors through progress payments, which reduce the contractor's need to borrow money. Also, the government uses progress payments partly because it can borrow money at a lower rate than the contractor. This presumably reduces overall contract costs. Before the current profit policy was established, DOD compensated contractors for the expense of financing working capital requirements implicitly through the contract risk profit factor. Operating costs not covered by either delivery or progress payments may have to be financed by commercial borrowing.

DFAIR concluded that DOD needed to explicitly link its contract financing policies with its profit policy. DFAIR stated that the heightened awareness of the time value of money and other cash management concerns makes it imperative to develop an explicit link between contract financing and profit. The revised profit policy attempts to accomplish this objective by providing a methodology that generally recognizes the working capital costs that would not be financed through progress payments or delivery payments.

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### Working Capital Profit Adjustment

DOD's profit policy provides a methodology, similar to simple interest, to determine the working capital profit factor on an individual contract basis. Basically, the methodology is as follows:

**Portion financed by contractor x interest rate x contract length  
factor = working capital profit adjustment**

The contractor's share of financing is generally the portion not covered by progress payments. The contract length factor represents the period of time that the contractor has a working capital investment in the contract. The contracting officer uses a table provided in the profit policy to establish the contract length factor. Contract length is adjusted to reflect the timing of deliveries and periods of inactivity. The working capital profit factor is limited to a 4-percent ceiling of allowable contract costs. The interest rate used is the rate promulgated by the Secretary of the Treasury under Public Law 92-41. According to DOD, the interest rate, length factor, and the 4-percent ceiling were set so as to result in a conservative estimate of the working capital profit factor. Further, according to DOD officials, contracting officers' judgment, on such things as periods of inactivity, represent an important part of the working capital profit factor.

DOD developed this methodology primarily based on its DFAIR study. In that study, DOD used 12 contracts to draw conclusions about contract costs, delivery patterns, and contract lengths. In DFAIR, DOD used a model based on unreimbursed monthly costs to establish its methodology for calculating working capital financing costs. Our methodology was based on DFAIR's model of unreimbursed monthly costs. We evaluated the model and found that it took into account the important factors that affect working capital financing costs.

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**Cost Input and Contract  
Length Adjustments Based  
on Contract Profile**

In determining the profit objective that will be allowed for contractors' working capital costs, DOD's profit policy states that certain adjustments may be made for contract costs in which the contractor has a minimum cash investment. For example, the policy states that contract length be adjusted for the amount and timing of delivery payments that the government makes to contractors because these payments reduce their working capital financing costs. In addition, total contract costs should be adjusted when subcontracts are authorized for progress payments because these arrangements reduce the prime contractor's working capital investment.

Adjusted contract length is determined by eliminating periods of contractor inactivity. For example, the time that the contractor begins incurring significant amounts of costs may be several months after the contract award date. Also, a contract may not be closed out for months

after the last delivery is made and the last significant cost incurred. These time periods, according to DOD, should not be included in contract length. In addition, the contracting officer is required to adjust contract length on contracts with multiple deliveries. DOD is not explicit about how this adjustment should be made for all contracts. Our discussions with contracting officers indicate that the necessary adjustments to contract costs and contract length may not always be made because the guidance lacks specificity.

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## DOD's Profit Policy Does Not Always Compensate Contractors Accurately for Working Capital Financing Costs

Working capital financing costs on negotiated contracts amount to hundreds of millions of dollars every year. If DOD's methodology for determining contractors' working capital requirements does not adequately recognize these costs, inequities in profit objectives either to contractors or to the government may result on a contract-by-contract basis.

Our analyses of the relationship between the working capital profit factor and contractors' expected financing costs were based on 352<sup>3</sup> contracts from a universe of 2,015 for which detailed data about the expected timing of contract expenditures were available. The 352 contracts used in our sample had a projected value of approximately \$31.6 billion. Our analysis, which was based on the contractors' monthly unreimbursed costs, showed that total working capital financing costs for these contracts to be about 1.4 percent of the total contract costs. Applying DOD's methodology for estimating the working capital adjustment factor to the contract data we collected also indicated the financing cost to be about 1.4 percent. However, the impact on individual contractors varied—DOD's policy would result in overestimating the working capital costs on many contracts while underestimating on many others.

We compared the working capital profit factor and the estimated financing costs on a contract-by-contract basis. The results showed that for approximately 87 percent of the 352 contracts, representing about 80 percent of the dollar value, or \$25 billion, discrepancies between profit negotiation objectives and financing costs of 10 percent or more could be expected from working capital profit factors negotiated under DOD's current policy. For contracts valued at about \$12 billion, our analysis

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<sup>3</sup>Our analyses of whether the profit policy achieves DOD's objective of providing contractors with reimbursements that approximate contractors' financing costs are based on data from 168 contracts. The 168 contracts could be projected to represent about 352 contracts with flexible progress payments. Flexible progress payment contracts include about 70 percent of the dollar value of all 1,694 contracts receiving progress payments.

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showed that the contract would be assigned a profit objective that was at least 10 percent under the predicted financing costs. For contracts with a total value of about \$13 billion, the analysis showed that the contracts' profit objective would be at least 10 percent over the predicted financing cost. These variations result from DOD's working capital profit factor, which does not adequately consider such things as the effects of the timing of contract cost expenditures and their relationship to delivery payments.

**Table I.2: Summary of Comparison of Estimated Working Capital Profit Factor and Predicted Financing Costs<sup>a</sup>**

Dollars in millions			
Estimated financing costs (percent)	Projected number of contracts	Total price of contracts	Average over/under compensation (percent)
Close estimation:			
within + or -10	46	\$6,464	-1
Under estimation:			
-10 to -25	50	4,708	-17
more than -25	139	7,585	-41
<b>Total</b>	<b>189</b>	<b>12,293</b>	
Over estimation:			
+10 to +25	34	3,613	+18
more than +25	82	9,270	+79
<b>Total</b>	<b>116</b>	<b>12,883</b>	
<b>Total</b>	<b>305</b>	<b>\$25,176</b>	

Note: Entries may not add due to rounding.

<sup>a</sup>All entries are subject to sampling error. For example, the estimate from the first column that 87 percent (all but 46 contracts) would not be closely compensated is contained in a 95-percent confidence interval.

DOD's implementing regulations on the current profit policy clearly state that the formula is not intended to be an exact calculation of a contractor's cost of working capital. The policy gives only general recognition to cost input and delivery schedules. The results of our analysis, which are summarized in table I.2, suggests that the policy can result in significant differences among most contracts.

DOD's methodology, in its general recognition of working capital financing costs, assumes that the average time elapsed between incurring costs and receiving delivery payments is the same for all contracts with delivery schedules of similar lengths. Projected cost expenditure data from contracts in our sample showed that the level of cost expenditures on individual contracts varies from month to month. Our estimates of

imputed financing costs were based on projected net monthly unreimbursed contract costs (total monthly costs, less progress payments and delivery payments).

The following examples show how the timing of contractor cost expenditures and delivery payments affect the amount of financing costs even though contract costs and adjusted contract length are similar. A comparison of results using DOD's profit policy with our calculations produced important differences in financing costs in each case. Additional details on these examples are in appendix III.

On one contract with a cost of \$121 million, and an overall length of 55 months, we calculated working capital financing costs of \$2.8 million, while application of DOD's profit policy resulted in financing costs of \$2.4 million, based on an adjusted contract length of 37 months.

During the first half of the 55-month contract, before any deliveries were made, the contractor incurred about 70 percent of the contract costs. During the final 26 months of the contract, the contractor incurred the remaining 30 percent of contract costs. In months 29 and 30, the contractor received payments for deliveries made. These deliveries accounted for 50 percent of the value of the items to be delivered. Two other deliveries were made, one in month 39 and one at the end of the contract. The cost and delivery data on this contract indicate that the contractor would incur higher financing costs during the first half of the contract and significantly lower costs thereafter. This pattern caused our estimate of financing costs being higher than DOD's working capital profit factor would provide.

DOD's methodology would result in a lower negotiated profit objective on this contract because it does not recognize that the contractor's investment was much higher during the first half of the contract.

In contrast, on another contract with a cost of about \$118 million and an overall length of 48 months, based on the monthly cost input and delivery profile of the contract, we calculated working capital financing costs of \$1.2 million. DOD's profit policy would have provided for a profit objective of \$2.3 million based on an adjusted contract length of 37 months. On this contract, only about 20 percent of total contract costs were incurred during the first half of the contract. Deliveries began at about this point and continued throughout the remainder of the contract, thereby reducing working capital requirements.

DOD's methodology could result in higher negotiated profit objectives on this contract because its methodology for calculating working capital does not take into account that the contractor's investment was not very significant during the first half of the contract. It also does not take into account that delivery payments occurring during the period of heaviest incurred cost reduced the amount of the contractor's investment.

## Adjustments to Contract Length and Estimated Costs Materially Affect DOD's Computation of Financing Costs

To avoid overestimating the working capital profit factor, adjustments need to be made for periods of inactivity, and subcontractor progress payments that are liquidated late in the period of prime contract performance. The cash flow model adjusts for these things and does not rely on the contracting officer's judgment.

When a subcontractor is authorized progress payments, the prime contractor receives 100 percent of the progress payments paid to the subcontractor. Theoretically, this contract relationship will reduce the prime contractor's investment. DOD's profit policy states that contract costs may have to be reduced by those amounts. Therefore, when the prime contractor has many subcontractors that receive progress payments, this may reduce the prime contractor's financing requirements. DOD officials explained that even when the prime contractor has many subcontractors that receive progress payments, this does not necessarily mean that the prime contractor's financing requirements are reduced. A critical factor is when the subcontractor delivers versus when the prime contractor delivers. For example, when computing the working capital adjustment factor, an adjustment to contract costs may be required when the subcontractor delivers to the prime contractor and the prime contractor immediately delivers to DOD. This situation may enable the prime contractor to recover all unreimbursed costs paid to the subcontractor. In this circumstance, excluding some portion of the costs paid to subcontractors seem likely to produce more accurate results overall.

DOD's policy does not specify any dollar value criteria to indicate when such an adjustment should be made. For the contracts in our sample, which had progress payments to subcontractors, these progress payments represented about 20 percent of the total contract costs. We believe that some of the subcontract costs should be considered for exclusion from the negotiated profit base. The following example demonstrates the importance of this adjustment.

A 1985 Army contract for \$181 million for helicopters and support equipment had \$41 million of subcontract progress payments. Using

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DOD's formula, and without adjusting contract costs for these subcontract costs, the prime contractor's cost to finance this contract would be \$2 million. If contract costs were reduced by the amount of the subcontract progress payments, DOD's formula would result in financing cost of \$1.54 million, or \$460 thousand (23 percent) less than if contract costs were not adjusted.

We believe that DOD's profit policy does not provide detailed guidance that would enable its contracting officers to make adjustments consistently to contract costs and contract length. Our calculations considered many of the adjustments. Our discussions with contracting officers indicate that the necessary adjustments to contract costs and contract length may not always be made. This may be because the guidance lacks specificity (i.e., defining periods of inactivity and adjusting for subcontractor costs). Methodology based on net monthly unreimbursed contract costs should consider such things as periods of inactivity.

DOD's policy states that contract length should be adjusted for deliveries. To show the importance of making this adjustment, we examined a sample that was projected to represent approximately 1,700 contracts.<sup>4</sup> We estimated that if these adjustments for delivery payments were not made, the contract length factor would be 38 months. When we adjusted contract length for deliveries in accordance with DOD's methodology, we calculated an adjusted contract length of 24 months, suggesting the need for lower requirements for working capital. The working capital profit factor based on 38 months would be approximately 2 percent of contract costs compared with 1.2 percent when length is adjusted.

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<sup>4</sup>As explained earlier, according to DOD's data, 2,015 negotiated fixed-price contracts were awarded in fiscal years 1985-87, which would most likely be subject to the working capital adjustment factor in DOD's profit policy. We studied a sample of contracts that were projected to represent approximately 1,700 contracts valued at \$46 billion. See appendix II for additional details on our sampling methodology.

# Objectives, Scope, and Methodology

The Senate Appropriations Committee, Subcommittee on Defense, requested that we review DOD's profit policy to determine whether it appropriately considers a contractor's working capital costs by taking into account the important factors that affect working capital.

When we initiated our review, the working capital profit policy had not been in effect long enough for data on working capital costs to be available. Therefore, we collected data that would provide estimates of contract working capital costs for contracts awarded in previous years. We used the data from these contracts to compare the profit objectives that would be developed for working capital under the current profit policy with the working capital financing costs that contractors could be predicted to incur.

In fiscal years 1985-87, DOD data<sup>1</sup> indicated that it definitized 2,015 fixed-price negotiated contracts for which progress payments were authorized. We drew a probability sample of 425 contracts to represent all negotiated, fixed-price contracts that met the following conditions: contract obligation of at least \$500,000, definitized in fiscal years 1985, 1986, or 1987, authorized for progress payments, performed by a business enterprise in the United States, and obtained a certificate of current cost or pricing data. If these conditions were met, then the contracts would be eligible for application of the working capital profit policy.

Our sample of 425 contracts included all of the 225 contracting actions that DOD reported as exceeding \$30 million. We used probability sampling techniques to draw an additional 200 contracts to represent the remaining smaller contracting actions. These contracts were selected with probabilities of selection proportionate to the amount of funds obligated for the remaining contracts in the universe. Our review was limited to contracts awarded to large businesses. Small business contracts were excluded because they represented only 10 percent of the total negotiated fixed-price contracts.

We issued 425 questionnaires to defense contractors and requested information about the contract price and the timing of deliveries and other significant contract actions such as net monthly unreimbursed contract costs. (See app. III for additional details on the type of information that we received.) Of the 425 originally identified contracts, the returned questionnaires indicated that 367 of the contracts were those that would be eligible for application of the DOD working capital profit

<sup>1</sup>Data obtained from DOD's Form 350 (Individual Contracting Action Report) data base.

policy. (The ineligible contracts consisted of 2 that were never executed and 54 that were not negotiated contracts. No information was received for two contracts.) Three additional contracts were excluded from the analysis due to inadequate information about the dates of contract actions.

Of the 364 contracts, 176 were contracts with customary progress payments, and 188 were contracts with flexible progress payments. When a contract is authorized for flexible progress payments, more detailed information is provided to the government concerning the amount, timing, and types of contract costs. Detailed cost data of the type furnished for flexible progress payments is not required by the government for contracts that use customary progress payments. We requested the information for the flexible contracts in our sample because this information is generally readily available for these contracts, whereas for the contracts authorized customary progress payments, these data are not required and would have required the contractor to provide these costs. We did use the type of information that is available at the time of contract negotiation and audited by the Defense Contract Audit Agency. The purpose of our review was to evaluate the relationships between DOD's current policy on working capital and predicted working capital financing costs for a probability sample of DOD contracts where data are readily available.

We computed detailed analyses of differences between profits that could have been negotiated for working capital under DOD's current policy and projected financing costs based on 168 (of the 188 contracts) with flexible progress payments for which contractors provided the planned cost data. Twenty contracts were excluded from the analysis due to inadequate information on planned cost data. Our analyses of whether the profit policy achieves DOD's objective of providing contractors with reimbursements that approximate contractors' financing costs are based on data from 168 contracts. The 168 contracts could be projected to represent about 352 contracts with flexible progress payments. Flexible progress payment contracts include about 70 percent of the dollar value of all 1,694 contracts receiving progress payments.

Unless otherwise indicated, the findings in this report are projections to the universe of contracts with flexible progress payments from which the sample was drawn. Thus, estimates of percentages and rates are approximations of the universe based on the studied contracts. Estimates of the total value of negotiated contracts we looked at may be underestimates of totals because some of the contracts were not used for

two reasons: (1) three contracts with incomplete dates and the two contracts for which no information was received are excluded from the projections and (2) there are probably some contracts that are eligible for the profit policy but were excluded from our study because they were incorrectly coded on the DOD Individual Contracting Action Reports.

We estimated the amount of working capital profit for each contract as prescribed by the new policy. This profit objective is determined on an individual contract basis by DOD's prescribed formula that considers some of the factors that determine contractors' working capital financing costs. In applying DOD's formula, we adjusted contract length in accordance with DOD's profit policy. We also eliminated periods of contractor inactivity based on information provided by the contractors. We used the date of submittal of the first progress payment request or date when 2 percent of costs were incurred, whichever was earliest, as the contract start date (rather than the date of contract award). We based the contract completion date on the expected date of contract completion as indicated by the questionnaire results or date of last delivery.

We also estimated the working capital financing cost for each contract for which cost and delivery data were provided. Our calculations are based on projected monthly spending and delivery patterns and unreimbursed costs that were initially expected for the contract as determined by DOD's flexible progress payment computer model. The data used for the model represents projections of contract costs expenditures, not actual costs incurred.

During the review, we held discussions with DOD officials responsible for developing the profit policy. We obtained information on how the working capital profit policy was derived and also on DOD's computerized program for determining flexible progress payments. We talked with DOD contracting officers and pricing analysts to determine how the working capital profit policy was being implemented. We discussed the results of our review with responsible DOD officials.

Our review was performed from March 1988 through December 1989 in accordance with generally accepted government auditing standards.

# Examples of Projected Working Capital Financing Costs Estimated Using Data Submitted by Contractors

**Example I:**

Month	Monthly costs	Cum costs	Cum progress payments	Cum delivery payments (000s)	Contractor unreimbursed costs	Time (days)	Financing costs
1	\$2,760	\$2,760	\$2,208	\$0	\$552	30	\$4
2	2,760	5,520	4,416	0	1,104	31	8
3	3,396	8,916	7,133	0	1,783	31	13
4	3,396	12,312	9,850	0	2,462	30	17
5	3,611	15,923	12,738	0	3,185	31	23
6	3,613	19,536	15,629	0	3,907	30	27
7	3,613	23,149	18,519	0	4,630	31	33
8	3,572	26,721	21,377	0	5,344	31	39
9	2,835	29,556	23,645	0	5,911	28	39
10	2,835	32,391	25,913	0	6,478	31	47
11	2,876	35,267	28,214	0	7,053	30	49
12	2,876	38,143	30,514	0	7,629	31	55
13	2,876	41,019	32,815	0	8,204	30	57
14	2,876	43,895	35,116	0	8,779	31	63
15	2,873	46,768	37,414	0	9,354	31	68
16	2,862	49,630	39,704	0	9,926	30	69
17	2,862	52,492	41,994	0	10,498	31	76
18	2,862	55,354	44,283	0	11,071	30	77
19	2,862	58,216	46,573	0	11,643	31	84
20	2,806	61,022	48,818	0	12,204	31	88
21	2,829	63,851	51,081	0	12,770	28	83
22	2,829	66,680	53,344	0	13,336	32	99
23	3,039	69,719	55,775	0	13,944	30	97
24	3,039	72,758	58,206	0	14,552	31	105
25	3,039	75,797	60,637	0	15,160	30	106
26	3,053	78,850	63,080	0	15,770	31	114
27	3,054	81,904	65,523	0	16,381	31	118
28	3,054	84,958	67,966	0	16,992	15	59
29	0	84,958	67,966	2,241	14,751	15	52
29	3,204	88,162	70,529	2,241	15,392	15	54
30	0	88,162	70,529	12,250	5,383	16	20
30	3,054	91,216	72,973	12,250	5,993	30	42
31	3,054	94,270	75,416	12,250	6,604	31	48
32	2,993	97,263	77,810	12,250	7,203	31	52
33	1,392	98,655	78,924	12,250	7,481	28	49
34	1,392	100,047	80,037	12,250	7,760	31	56
35	1,390	101,437	81,149	12,250	8,038	30	56

(continued)

**Appendix III  
Examples of Projected Working Capital  
Financing Costs Estimated Using Data  
Submitted by Contractors**

Month	Monthly costs	Cum costs	Cum progress payments	Cum delivery payments (000s)	Contractor unreimbursed costs	Time (days)	Financing costs
36	1,390	102,827	82,261	12,250	8,316	31	60
37	1,381	104,208	83,366	12,250	8,592	30	60
38	1,381	105,589	84,471	12,250	8,868	15	31
39	0	105,589	84,471	18,803	2,315	16	9
39	1,382	106,971	85,576	18,803	2,592	31	19
40	1,382	108,353	86,682	18,803	2,868	30	20
41	1,534	109,887	87,909	18,803	3,175	31	23
42	1,382	111,269	89,015	18,803	3,451	30	24
43	907	112,176	89,740	18,803	3,633	31	26
44	868	113,044	90,435	18,803	3,806	31	27
45	849	113,893	91,114	18,803	3,976	28	26
46	849	114,742	91,793	18,803	4,146	31	30
47	838	115,580	92,463	18,803	4,314	30	30
48	838	116,418	93,134	18,803	4,481	31	32
49	829	117,247	93,797	18,803	4,647	30	32
50	829	118,076	94,460	18,803	4,813	31	35
51	798	118,874	95,098	18,803	4,973	31	36
52	798	119,672	95,737	18,803	5,132	30	36
53	797	120,469	96,374	18,803	5,292	31	38
54	926	121,395	97,112	18,803	5,480	15	19
55	0	121,395	97,112	24,283	0	0	0
<b>Total</b>		<b>\$121,395</b>					<b>2,761</b>

Estimate of working capital financing costs had DOD methodology been used on contract in our sample. (See note 1.)	2,373
Our projected financing costs in excess of DOD's methodology.	\$388

NOTE 1:

DOD methodology for computing financing costs	
Portion of contract costs financed by contractor <sup>a</sup>	\$24,279
X Contract length factor <sup>b</sup>	1.150
X Interest rate	0.085
DOD financing costs	<u>\$ 2,373</u>

<sup>a</sup>The contractor's share of financing is generally the portion not covered by progress payments.

<sup>b</sup>This factor represents the period of time that the contractor has a working capital investment in the contract. DOD's profit policy provides a table to establish the contract length factor. The contract in the example has an adjusted length of 37 months—the table in the DOD policy indicates that when the adjusted contract length is 37 months, the contract length factor should be 1.15.

**Appendix III  
Examples of Projected Working Capital  
Financing Costs Estimated Using Data  
Submitted by Contractors**

**Example II:**

Month	Monthly costs	Cum costs	Cum progress payments	Cum delivery payments (000s)	Contractor unreimbursed costs	Time (days)	Financing costs
1	\$4	\$4	\$3	\$0	\$1	31	\$0
2	14	18	14	0	4	31	0
3	17	35	28	0	7	28	0
4	40	75	60	0	15	31	0
5	336	411	329	0	82	30	1
6	23	434	347	0	87	31	1
7	52	486	389	0	97	30	1
8	246	732	586	0	146	31	1
9	660	1,392	1,114	0	278	31	2
10	1,977	3,369	2,695	0	674	30	5
11	531	3,900	3,120	0	780	31	6
12	810	4,710	3,768	0	942	30	7
13	1,035	5,745	4,596	0	1,149	31	8
14	1,750	7,495	5,996	0	1,499	31	11
15	646	8,141	6,513	0	1,628	28	11
16	872	9,013	7,210	0	1,803	31	13
17	2,496	11,509	9,207	0	2,302	30	16
18	1,240	12,749	10,199	0	2,550	31	18
19	1,025	13,774	11,019	0	2,755	30	19
20	1,602	15,376	12,301	0	3,075	31	22
21	1,136	16,512	13,210	0	3,302	31	24
22	2,359	18,871	15,097	19	3,755	30	26
23	3,030	21,901	17,521	19	4,361	31	31
24	2,354	24,255	19,404	233	4,618	30	32
25	3,188	27,443	21,954	662	4,827	31	35
26	4,299	31,742	25,394	1,091	5,257	31	38
27	4,469	36,211	28,969	1,822	5,420	28	35
28	4,244	40,455	32,364	2,411	5,680	31	41
29	4,644	45,099	36,079	2,874	6,146	30	43
30	4,987	50,086	40,069	3,496	6,521	31	47
31	5,442	55,528	44,422	4,174	6,932	30	48
32	5,108	60,636	48,509	4,977	7,150	31	52
33	5,579	66,215	52,972	5,593	7,650	31	55
34	5,960	72,175	57,740	6,182	8,253	30	58
35	6,322	78,497	62,798	6,982	8,717	31	63
36	6,336	84,833	67,866	8,996	7,971	30	56

(continued)

**Appendix III  
Examples of Projected Working Capital  
Financing Costs Estimated Using Data  
Submitted by Contractors**

Month	Monthly costs	Cum costs	Cum progress payments	Cum delivery payments (000s)	Contractor unreimbursed costs	Time (days)	Financing costs	
37	5,458	90,291	72,233	0,368	7,690	31	56	
38	5,531	95,822	76,658	2,146	7,018	31	51	
39	4,778	100,600	80,480	2,985	7,135	29	48	
40	3,012	103,612	82,890	4,236	6,486	31	47	
41	3,311	106,923	85,538	4,791	6,594	30	46	
42	3,094	110,017	88,014	5,903	6,100	31	44	
43	2,196	112,213	89,770	17,075	5,368	30	38	
44	2,946	115,159	92,127	18,803	4,229	31	31	
45	870	116,029	92,823	19,975	3,231	31	23	
46	911	116,940	93,552	21,703	1,685	30	12	
47	865	117,805	94,244	23,000	561	31	4	
48	284	118,089	94,244	23,845	0	0	0	
<b>Total</b>		<b>\$118,089</b>					<b>1,224</b>	
Estimate of working capital financing costs had DOD methodology been used on contract in our sample. (See note 2.)								2,309
Our projected financing costs in excess of DOD's methodology.								\$1,085

NOTE 2:

DOD methodology for computing financing costs	
Portion of contract costs financed by contractor <sup>a</sup>	\$23,618
X Contract length factor <sup>b</sup>	1.150
X Interest rate	0.085
DOD financing costs	<u>\$ 2,309</u>

<sup>a</sup>The contractor's share of financing is generally the portion not covered by progress payments.

<sup>b</sup>This factor represents the period of time that the contractor has a working capital investment in the contract. DOD's profit policy provides a table to establish the contract length factor. The contract in the example has an adjusted length of 37 months—the table in the DOD policy indicates that when the adjusted contract length is 37 months, the contract length factor should be 1.15.

# Comments From DOD

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D. C. 20301-8000

PRODUCTION AND  
LOGISTICS  
(P) CPF

May 31, 1989

Mr. Frank C. Conahan  
Assistant Comptroller General  
National Security and International  
Affairs Division  
United States General Accounting Office  
Washington, DC 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "GOVERNMENT CONTRACTING: Compensation of Defense Contractors' Working Capital Financing Costs," dated April 13, 1989 (GAO Code 396117), Case 7679-A. The DoD disagrees with the basic premise on which the GAO report is based.

The GAO draft report reflects a basic misunderstanding of the intent of the Department in including the working capital adjustment factor as one part of the weighted guidelines profit policy. It is not the objective of the profit policy to attempt to recognize contractors' cost of financing working capital at a rate that approximates their costs, as the GAO report states. The working capital adjustment factor is intended to give general recognition to a contractor's cost of working capital under varying circumstances, not to calculate these amounts precisely. The policy itself clearly states this intention.

One of the DoD objectives in including the working capital adjustment factor as part of the profit policy was to provide a simple but explicit link between contract financing and profit policies. Thus, the working capital adjustment factor specifically recognizes that working capital requirements vary with (1) the contract circumstances, (2) the level of progress payments, and (3) the prevailing interest rates. As these factors vary, the working capital adjustment amount automatically changes, as does the total profit objective. For example, the factor provides additional working capital amounts if the progress payment rate is reduced or if interest rates increase; conversely, and it provides reduced working capital amounts if the progress payment rate is increased or if interest rates fall.

Another of the DoD objectives in establishing the current profit policy was to reduce the emphasis placed on estimated cost

in the development of a profit objective and to increase the emphasis placed on contractor investment. This objective was accomplished, in part, through the establishment of a separate factor within the weighted guidelines policy for recognizing working capital requirements on the contract. Prior to the implementation of the current policy, working capital had been implicitly considered in the development of profit objectives; now, working capital is given explicit consideration in the development of profit objectives.

The GAO states that, based on its simulation of the policy and its projections of working capital costs expected to be incurred on a number of contracts, the policy would not compensate contractors at a rate that approximates their financing costs. The DoD does not agree with the GAO on the degree of precision required. A much more complicated calculation would clearly have to be developed in order to estimate more closely projected financing costs. Contracting officers would, in most instances, need to obtain additional detailed information on projected cost incurrence patterns in order to perform a more precise calculation. The current policy was deliberately designed to provide a relatively simple process for developing the working capital adjustment factor. The policy heavily relies upon the contracting officer to use judgment in establishing the values of the various components that are used to develop the factor. The policy includes guidance on the types of issues that should be considered by the contracting officer in developing the values of these components.

Further, the Department does not agree with the methodology used by the GAO to simulate the application of the working capital adjustment factor. Therefore, the DoD does not agree with the GAO finding that contractors may be "overcompensated" in many cases. In performing its simulation, the GAO did not have access to the same types of information that are available to a contracting officer during the contract negotiation process and, thus, the GAO could not make the same types of adjustments that a contracting officer would make. For example, based on discussions with the GAO auditors, it is clear that no adjustments were made for the amount of subcontractor progress payments, even though the policy clearly states that the contracting officer should make an adjustment when the contractor has a minimum cash investment, such as when subcontractor progress payments are liquidated late in the period of contract performance. The contracting officer would have access to the types of information that would enable such an adjustment; the GAO did not have access to the same information to enable it to adjust for this factor.

Additionally, the GAO fails to acknowledge that the working capital adjustment factor was established in a very conservative manner. For example, the individual contract length factors have been reduced by a factor of .35, which automatically results in lower working capital amounts. The Treasury rate is used in the

See comment 1.

See comment 2.

calculation of the working capital amount, not the contractor's actual borrowing rate or commercial borrowing rates, which also results in lower working capital amounts. Finally, the working capital amount is capped so that it cannot exceed 4 percent of the total cost objective. Thus, on an individual contract, the DoD would expect that the working capital adjustment factor would usually result in "undercompensation" of amounts for working capital, and would rarely result in any "overcompensation."

The weighted guidelines profit policy is used to develop a total profit objective for non-competitive contracts. There is no separate negotiation of amounts for contractor working capital. To characterize a variation in one factor used to establish a profit objective as potentially resulting in "excessive profits" is very misleading, particularly for individuals who are not familiar with the entire process of developing cost and profit objectives and negotiating contract price.

For these reasons, the Department does not agree that it is necessary to revise the methodology used to calculate the working capital adjustment factor.

Thank you for providing the DoD with the opportunity to comment on the draft report.

Sincerely,



Jack Katzen  
Assistant Secretary of Defense  
(Production and Logistics)

## GAO Comments

1. We agree that contract costs should be adjusted for subcontracts that include progress payments. However, our overall finding—namely that DOD's methodology for computing working capital costs would not adequately recognize a contractor's working capital costs—would not change whether or not we adjusted for payments to subcontractors. Over 65 percent of the contracts in our sample do not provide for progress payments to subcontractors. Many of these contracts continue to show that applying DOD's current profit policy would result in overestimates or underestimates of working capital financing costs. Further, the percentage of contracts with no payments to subcontractors that are over or under compensated are within 3 percent of those in table I.2. If we adjusted prime contracts with progress payments to subcontractors when applying DOD's methodology, it could result in an overall lower net compensation of working capital amounts. However, we were not able to make adjustments to prime contracts with progress payments to subcontractors because the DOD policy is not clear enough to make these adjustments consistently.

2. DOD stated that we failed to acknowledge that the working capital adjustment factor was established in a very conservative manner. For example, DOD stated that the (1) individual contract length factors have been reduced by 0.35 percent which automatically results in lower working capital amounts, (2) Treasury rate is used in calculating the working capital amount, not the contractor's actual borrowing rate or commercial borrowing rates, which results in lower working capital amounts, and (3) the working capital amount is capped so that it cannot exceed 4 percent of the total cost objective. We agree that these factors may tend to result in a conservative estimate of overall working capital financing costs, and we found that DOD's method for calculating working capital costs overall would probably not result in overcompensation. The main point of this report is that despite this conservative approach, DOD's methodology results in overestimates or underestimates of working capital cost in numerous instances.

# Major Contributors to This Report

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**National Security and  
International Affairs  
Division, Washington,  
D.C.**

Clark G. Adams, Assistant Director  
Ralph C. Dawn, Assignment Manager  
James M. Fields, Social Science Analyst  
Alfred Lilliendahl, Operations Research Analyst

---

**Philadelphia Regional  
Office**

Joseph F. Daly, Assistant Regional Manager  
James A. Przedzial, Evaluator-in-Charge  
D. Richard Stengel, Evaluator