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United States General Accounting Office

GAO

Briefing Report to the Honorable  
Carl Levin, U.S. Senate

November 1987

# INCENTIVE CONTRACTS

## Examination of Fixed- Price Incentive Contracts



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

National Security and  
International Affairs Division

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November 3, 1987

The Honorable Carl Levin  
United States Senate

Dear Senator Levin:

As you requested, we have examined a number of fixed-price incentive (FPI) contracts to determine how the final price of each compared with the contract's established target and ceiling price.<sup>1</sup> FPI contracts are usually used for operational system, development, first production, and follow-on production contracts where the government has a sound basis to estimate contract costs, but where uncertainties exist that make a firm fixed-price contract impractical. The government uses an FPI contract to share cost risks with the contractor. The government hopes this will motivate the contractor to increase efficiency and reduce costs while producing the best possible item. The structure and mechanics of incentive contracts are discussed in detail in appendix I.

Since you asked for a report on the percentage of contracts in our sample which (1) achieved the target price exactly, (2) overran and underran the target price, and (3) attained the ceiling price, we selected only FPI contracts that have a single incentive provision for lowering costs. In other words, those contracts with incentives based on cost alone rather than on item performance or delivery or a combination of these factors.

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<sup>1</sup>A contract's target price is an estimated price negotiated by the government and contractor. It is composed of two elements, a contractor's allowable costs and profit. It represents the costs and profit that both parties feel will be necessary to complete the contract. The actual final price is generally above or below the target. The government and contractor then share any additional costs or savings in proportions established by the contract's sharing ratio. The ceiling price is the maximum amount the government will pay under the contract. Once this price is reached, the contractor must bear all additional costs of performance.

In our early meetings with your representatives, they expressed your desire that we also determine if incentive contracts either saved the government money or worked as they theoretically should. The first of these questions cannot be definitively answered without doing comparative tests. Such tests would involve paired procurements of identical items, at the same time, under identical conditions using a FPI contract and a separate firm fixed-price contract. While such tests would allow clear comparisons to be made between the individual contracts, they have not been undertaken because the government would presumably pay a higher price for the test items than it would if these items were procured under a single, larger lot, procurement of either type. We agreed not to pursue this issue independently, but to give your staff a summary of the conclusions by others on this topic. This research is not definitive, and because of the differing measurement criteria and methodologies used, often comes to conflicting conclusions. We have synthesized the studies which have been performed on the subject and have previously furnished this information to your representatives.

To determine if incentive contracts behave according to theory, we examined the extent to which the final prices of FPI contracts match target prices established for the contract, and how the sharing ratio related to attainment of the target price.<sup>2</sup> If the contracts act according to incentive theory, we would expect to find (1) a clustering of final prices very close to the target price and (2) an increasing tendency for final prices to underrun the target price (or for overruns to be minimized) as contractor share ratios increased.

We reviewed 573 contracts at the six Department of Defense (DOD) buying offices which were the 2 largest users of FPI contracts from fiscal years 1977-84 in each service. Sixty-two of these contracts had been finally priced and were

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<sup>2</sup>The sharing ratio is generally expressed as a ratio, such as 75:25 and 80:20. It provides for the proportionate division of cost overruns and underruns between the government and the contractor.

available for our review. Final pricing of contracts is important because it is only after final pricing that a definitive comparison can be made of the total contract (final) price with its final target and ceiling price. Before final pricing, the ultimate price the government will pay, the target and ceiling prices are all subject to change as quantities, configurations, and capabilities of items are changed by the government. Our analyses of these 62 contracts are presented in detail in appendix II. A listing of the contracts is provided as appendix IV.

The highlights of our review were as follows:

- Twenty-seven contracts (43.5 percent) underran the target price. These contracts accounted for 41.1 percent of the total dollar value of the 62 contracts.
- Two contracts (3.2 percent) achieved the target price precisely. These contracts accounted for 3.8 percent of the total dollar value of the 62 contracts.
- Thirty-three contracts (53.2 percent) overran the target price. These contracts accounted for 55.1 percent of the total dollar value of the 62 contracts. Thirteen of these contracts reached the ceiling price where the government liability ended and the contractor became liable for all further costs. These contracts accounted for 4.1 percent of the total dollar value of the 62 contracts.
- The 62 contracts had a total final price of \$999.4 million, which was 1/5 of 1 percent over the total aggregate target price of \$997.5 million.
- The final prices on 58 percent of the contracts were within 5 percent of the target price, and 92 percent were within 10 percent of the target. (See table II.1.)

These findings are consistent with incentive theory. If target prices are reasonably set we would expect to see final prices both above and below, but clustering near, target prices.

For the contracts we examined, however, there was no relationship between the cost-sharing ratio and achievement of a contract's target price. For any particular sharing ratio, we found final contract prices both above and below target prices by similar amounts. We did not find any apparent relationship between the cost-sharing ratio and attainment of ceiling prices. These findings do not support that part of incentive theory which holds that as the contractor's share ratio increases the contractor has a greater incentive to meet or underrun target costs. Other research has also found that final contract costs and price seems unrelated to the sharing ratio.

Although the FPI contracts we reviewed did not behave exactly as the theory predicted, they offer the government the advantages of being able to limit its financial liability and to share risks with contractors. Twenty-one percent of the contracts we reviewed (13 of 62) reached the ceiling price where further government payments cease. During our review several government contracting officers told us that contractors often refuse to accept firm fixed-price contracts and the assumption of total risk which they entail. If the government did not have the flexibility to partially share risk through the use of FPI contracts, it would have to use cost-type contracts.

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The objectives, scope, and methodology of our review are discussed in appendix III. As requested, we did not obtain official comments from DOD on this briefing report.

We are sending copies of this report to the Secretaries of Defense, Army, Navy, and Air Force and to other interested parties upon request. If you have any questions, please call me on 275-4587.

Sincerely yours,



Paul F. Math  
Senior Associate Director

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### ABBREVIATIONS

DOD	Department of Defense
FPI	fixed-price incentive

STRUCTURE AND USE OF INCENTIVE CONTRACTS

Except for the small percentage of procurement contracts awarded through competitive bidding, DOD's contract prices are most often set through bilateral negotiation. Various contract types have been devised to distribute financial risks of the technological uncertainties of weapon system development and production programs between the contractor and the government. These include FPI and cost-plus-fixed-fee contracts.

Under a cost-plus-fixed-fee contract, the government handles all cost risk. The government reimburses the contractor for all costs associated with the contract, as well as a predetermined profit or "fee." Since the profit does not vary in relation to the contractor's effectiveness at controlling costs, the cost-plus-fixed-fee contract provides little incentive for the contractor to control costs.

The final price of FPI contracts, on the other hand, is determined by applying an agreed upon formula (the sharing ratio) relating profit to total actual contract costs. The incentive provisions of such contracts may cover one or more areas of contractor performance (e.g., lower cost or better delivery schedule) and end-item performance (e.g., greater aircraft range or greater missile accuracy). All the contracts we reviewed had a single incentive provision which focused on lower costs. During contract negotiations, the government and contractor agree on a target cost, a target profit, a sharing ratio, and a ceiling price.

- The target cost is an estimate that both parties believe reflects the costs likely to be incurred during the contract's execution.
- The target profit is a sum (based on a percentage of the target cost) which the contractor will receive if the costs match the target cost exactly.
- The sharing ratio, expressed as 75:25, 80:20, 50:50, and so forth, provides for the proportionate division of cost overruns (costs above the target cost) and cost underruns (costs below the target cost) between the government and the contractor. Thus, if the final negotiated cost of a contract is less than the target cost, an "underrun" has occurred and the contractor will be rewarded with a share of the "savings." The contractor's reward will be computed by applying the sharing ratio to the difference between the target cost and

the actual cost. Conversely, when the final cost is more than the target cost (overrun), profit will be reduced since the sharing ratio works to require the contractor to also share in the overrun by giving up part of the target profit.

- The ceiling price represents the maximum amount the government will pay for the contract. When the ceiling price is reached, the contractor still earns some profit. However, since the target cost has already been exceeded, the contractor's profit has been reduced below the target profit. (This reduction is computed by applying the sharing ratio to the amount by which actual costs have exceeded the target cost.) When the ceiling price is reached, the sharing formula becomes 0:100 and the contractor must bear, dollar-for-dollar, all further costs of contract performance. If the contractor exceeds the ceiling price by a substantial amount, money can be lost on the contract.

The FPI contract can be more clearly demonstrated by the use of three examples: For each of these three hypothetical cases, we assume the target cost is \$5,000,000. The target profit is \$500,000 (10 percent of the target cost), the ceiling price is \$6,000,000 (having been negotiated at 120 percent of the target cost), and the sharing ratio is 75:25. Thus, the government expects to pay \$5,500,000 (target price and target profit) for contract performance.

Example 1: (underrun)

- Final costs incurred are \$4,500,000 (\$500,000 below target).
- Contractor receives the target profit of \$500,000 plus a share (25 percent of the \$500,000 savings) for a total profit of \$625,000.
- The government pays \$5,125,000 for the contract instead of \$5,500,000. The government savings of \$375,000 is its 75 percent share of the \$500,000 cost underrun.

Example 2: (overrun--below ceiling price)

- Final costs incurred are \$5,200,000.
- The contractor does not receive the target profit. Instead, the contractor's \$500,000 profit is reduced by a share (25 percent) of the \$200,000 overrun. Thus, the profit is reduced \$50,000 to \$450,000.

- The government pays \$5,650,000 for the contract. This represents the expected price of \$5,500,000 plus the governments 75 percent share of the \$200,000 cost overrun.

Example 3: (overrun--above ceiling)

- Final costs incurred are \$5,700,000 (\$700,000 over target).
- The contractor does not receive the target profit. Instead, the \$500,000 profit is first reduced by a share (25 percent) of the \$700,000 overrun or \$175,000. This would leave a profit of \$325,000, but the ceiling price (costs incurred plus the contractor's profit) is limited to \$6 million. Since the actual costs are \$5.7 million, the contractor's profit cannot exceed \$300,000. (Note: At this point the contractor is now losing \$1 of the profit for every additional \$1 of incurred cost. Should incurred costs rise beyond the \$6 million, the contractor receives no profit on the contract and at this point actually loses money.)
- The government pays \$6 million. This represents the \$5 million target cost, the target profit of \$500,000 and its 75 percent share (\$525,000) of the \$700,000 overrun subject to the \$6 million ceiling price. Thus, the government will only pay \$500,000 of the \$700,000 overrun leaving the contractor to pay the remaining \$200,000 out of the \$500,000 profit (leaving the contractor a net profit of \$300,000).

FPI contracts (with incentives on lower costs) are generally appropriate for operational system, development, first production, and follow-on production contracts. These types of efforts allow for negotiations in which targets can be established reasonably free of contingencies and which provide fair and reasonable incentives for the contractor to control costs.

FPI CONTRACTS' ACHIEVEMENT OF TARGET PRICES

Of the 573 contracts awarded by the 6 buying offices we reviewed, only 62 were finally priced at the time of our fieldwork. Only finally priced contracts allow for valid conclusions with respect to achieving target prices. Active contracts are constantly having modifications made which often affect the final target price.

Of the 62 finally priced contracts, 33 (53.2 percent) overran the target price, 27 (43.5 percent) underran the target price, and the final 2 (3.2 percent) achieved the target price exactly. Table II.1 shows the clustering of final prices around the target prices of the contracts we reviewed.

Table II.1: Range of Final Prices Around Target Prices

<u>Range (in % of target)</u>	<u>No. of contracts</u>	<u>Cumulative no. of contracts</u>	<u>Cumulative percentage<sup>a</sup></u>
Target price	2	2	3
Less than 1.00	9	11	18
+/- 1.00- 1.99	6	17	27
+/- 2.00- 2.99	4	21	34
+/- 3.00- 3.99	7	28	45
+/- 4.00- 4.99	9	37	60
+/- 5.00- 5.99	6	43	69
+/- 6.00- 6.99	2	45	73
+/- 7.00- 7.99	7	52	84
+/- 8.00- 8.99	2	54	87
+/- 9.00- 9.99	2	56	90
+/-10.00-14.99	3	59	95
+/-15.00-20.00	1	60	97
-20.00 or more	2	62	100

<sup>a</sup>Based on total target prices for all 62 contracts

The 62 finally priced contracts had a total cumulative target price of \$997,513,425 and achieved total cumulative final prices of \$999,441,577. Final prices amounted to \$1,928,152 (0.20 percent) more than the target prices established. None of the six purchasing offices we reviewed had their FPI contracts' cumulative final prices exceed their cumulative target prices by more than 1.76 percent, as shown in table II.2.

Table II.2: Achievement of Target Price by Purchasing Office

<u>Purchasing office</u>	<u>No. of contracts</u>	<u>Total final price paid</u>	<u>Total target price</u>	<u>Percent difference</u>
Army:				
CECOM <sup>a</sup>	6	\$ 24,027,480	\$ 23,611,019	+1.76
MICOM <sup>b</sup>	9	120,270,466	130,215,511	-7.64
Total	<u>15</u>	<u>144,297,946</u>	<u>153,826,530</u>	<u>-6.19</u>
Navy:				
NAVAIR <sup>c</sup>	12	374,620,209	368,632,096	+1.62
NAVSEA <sup>d</sup>	12	197,536,315	194,768,576	+1.42
Total	<u>24</u>	<u>572,156,524</u>	<u>563,400,672</u>	<u>+1.55</u>
Air Force:				
ASD <sup>e</sup>	12	231,701,734	229,225,592	+1.08
ESD <sup>f</sup>	11	51,285,373	51,060,631	+0.44
Total	<u>23</u>	<u>282,987,107</u>	<u>280,286,223</u>	<u>+0.96</u>
Total	<u>62</u>	<u>\$999,441,577</u>	<u>\$997,513,425</u>	<u>+0.20</u>

<sup>a</sup>CECOM - Communications and Electronics Command

<sup>b</sup>MICOM - Missile Command

<sup>c</sup>NAVAIR - Naval Air Systems Command

<sup>d</sup>NAVSEA - Naval Sea Systems Command

<sup>e</sup>ASD - Aeronautical Systems Division, Air Force Systems Command

<sup>f</sup>ESD - Electronic Systems Division, Air Force Systems Command

However, mere achievement of target prices is no guarantee that the government paid an appropriate price under a contract. Target prices are relevant to the question of over or under payment only if they have been properly established to reflect a mutually agreed reasonable price. In theory, this can be achieved only when both the government and the contractor are equally knowledgeable and have equal bargaining power in contract negotiations. Without a complete price and cost analysis, including all supporting data available at the time of price negotiation, we know of no way to determine if target prices were reasonably set. Scientifically designed test procurements comparing FPI and other contract types offer the only way of definitively determining, retrospectively, what was the best price the government could have achieved. Despite these limits, the close clustering of final prices around the targets is an indicator that FPI contracts are working as they were designed to.

Even if it cannot be proven whether FPI contracts save the government money, they have one undeniable strength--they limit the government's cost risk. The ceiling price in each FPI contract is the maximum amount the government will pay. When the contract reaches the ceiling price the contractor's profit has already been reduced from what it would have been had the target price been achieved. Every additional dollar of cost is paid completely by the contractor as a further reduction in profit.

Of the 62 finally priced contracts we reviewed, 13 (21 percent) reached the ceiling price when the contractor began the dollar-for-dollar absorption of additional cost. Every purchasing office we reviewed had at least one contract which reached its ceiling price as shown in table II.3.

Table II.3: Attainment of Ceiling Price by Purchasing Office

<u>Purchasing office</u>	<u>No. of contracts at ceiling price</u>	<u>Total value of contracts at ceiling price</u>
Army:		
CECOM	2 (33.3) <sup>a</sup>	\$ 7,102,092 (29.6) <sup>b</sup>
MICOM	2 (22.2)	6,392,404 ( 5.3)
Total	<u>4 (26.7)</u>	<u>13,494,496 ( 9.4)</u>
Navy:		
NAVAIR	1 ( 8.3)	11,630,301 ( 3.1)
NAVSEA	2 (16.7)	5,434,383 ( 2.8)
Total	<u>3 (12.5)</u>	<u>17,064,684 ( 3.0)</u>
Air Force:		
ASD	3 (25.0)	3,002,429 ( 1.3)
ESD	3 (27.3)	7,221,610 (14.1)
Total	<u>6 (26.1)</u>	<u>10,224,039 ( 3.6)</u>
Total	<u>13 (21.0)</u>	<u>\$40,783,219 ( 4.1)</u>

<sup>a</sup>Number of contracts at ceiling as a percent of the total number of FPI contracts we reviewed for the purchasing office or service.

<sup>b</sup>Dollar value of contracts at ceiling as a percentage of the total value of FPI contracts we reviewed for the purchasing office or service.

Table II.3 also shows that the smaller contracts generally reached the ceiling price. Although 21 percent of the finally priced FPI contracts attained the ceiling price, their combined values amounted to just 4.1 percent of the \$999.4 million the government paid for all 62 contracts. This may be explained by the fact that the gross difference between target and ceiling prices is not as great in small contracts. Therefore, modest unforeseen cost increases could cause such a contract to reach its ceiling price.

#### THE EFFECT OF SHARING RATES ON PRICES ACHIEVING TARGET PRICES

The incentive theory holds that higher contractor sharing ratios provide maximum incentives for contractors to control cost. This is because contractors would reap substantial increases in their target profits by underrunning target costs and incur substantial decreases in their target profits by overrunning target costs. In theory, we would expect to see a greater tendency for a contract's final price to be less than its target as sharing rates increase.

In practice, government contracting officers sometimes establish a split incentive for the contractor with one sharing ratio for overrunning the target and another sharing ratio for underrunning the target. For example, the Army's Communications and Electronics Command awarded a contract for an infrared countermeasures set which enabled the government to share costs above the target on an 85:15 basis while costs below the target would be shared on a 60:40 ratio. Such split incentive rates were established in 12 (19.4 percent) of the 62 finally priced contracts.

Tables II.4 and II.5 show the range of prices, expressed as a percentage of the target price, achieved at each sharing ratio encountered in our finally priced contracts. They also show the number of contracts underrunning, meeting, and overrunning the target price at each sharing rate.

These data do not follow classic incentive theory for upward sharing rates--those applicable to overrunning the target cost. (See table II.4.) If it did, we would expect to see proportionately fewer contracts overrunning target prices and proportionately more contracts underrunning the targets, as we moved from the smaller (90:10) to the larger (50:50) contractor share. We would also expect to see a change in the range of final prices with the lower part of the range being farther below target and the higher part of the range being closer to target.

Table II.4 shows no such pattern, it shows no relationship between the upward share ratio and the tendency to achieve target prices. At nearly every sharing ratio, contracts could be found above and below target prices with a random range of final prices. While we realize that because of our small universe, most of the sharing ratios had few observations on which to base a judgment, the pattern shown in table II.4 is consistent with the findings of other researchers who have concluded that no significant correlation exists between sharing ratio and cost overruns or underruns.

Table II.4: Upward Sharing Ratio and Attainment of Target Prices

Govt: Contractor sharing ratio	Range of final prices (as a % of target)	Number of contracts		
		Under target	At target	Over target
90:10	99.26 - 104.61	1	0	1
88:12	107.97	0	0	1
85:15	97.69 - 107.96	1	0	2
80:20	79.85 - 118.65	8	1	11
75:25	90.02 - 108.29	3	1	3
70:30	90.21 - 117.41	10	0	9
67:33	99.98	1	0	0
65:35	93.65 - 108.53	1	0	1
63:37	100.97	0	0	1
60:40	105.60	0	0	1
50:50	94.63 - 104.80	2	0	2

Note: The experience of 61 contracts is shown in tables II.4 thru II.6. The 62d contract used a variable sharing ratio. The sharing ratio varied depending on how close final costs were to the target and was not fixed until after the contract was closed. The contract's final price exceeded the target price by 3.16 percent and the final sharing ratio became 73.5:26.5.

For downward sharing ratios, those applicable for underrunning target costs, we found that our data more closely mirrored classic incentive theory and showed some slight correlation between high sharing rates and underrunning target prices. Table II.5 shows a tendency for proportionately more contracts to underrun the target costs as downward share ratios increase.

Table II.5: Downward Sharing Ratio and Attainment of Target Prices

Govt: Contractor <u>sharing ratio</u>	Range of <u>final prices</u> (as a % of target)	Number of Contracts		
		<u>Under target</u>	<u>At target</u>	<u>Over target</u>
90:10	99.26 - 104.61	1	0	1
88:12	107.97	0	0	1
85:15	106.1 - 107.96	0	0	2
80:20	79.85 - 118.65	4	1	8
75:25	93.02 - 108.29	2	1	3
70:30	82.70 - 117.41	12	0	11
67:33	99.98	1	0	0
65:35	108.53	0	0	1
60:40	90.02 - 105.6	3	0	2
50:50	93.31 - 104.80	4	0	3

The tendency for proportionately more contracts to underrun target costs as downward share ratios increase can be more clearly seen in table II.6 which compares the percentage of contracts with a given downward share ratio with the percentage of contracts underrunning the target price and having that share ratio. In column C of the table, an index is calculated by dividing these two numbers. Index factors greater than 1 percent indicate that proportionately more contracts underrun target prices as contractors' share increases. In accordance with incentive theory, we see a general tendency for the index factor to be increasingly higher (greater proportion of contracts underrunning target prices) as contractor share ratios increase from 70:30 to 50:50. The opposite is generally true as they decrease from 70:30.

Table II.6: Incidence of Underrunning Target Prices by Downward Sharing Ratio

<u>Govt: Contractor sharing ratio</u>	<u>A</u> Number (%) of contracts	<u>B</u> Number (%) of contracts under target	<u>C</u> Index factor %B/%A
90:10	2 ( 3.3)	1 ( 3.7)	1.12
88:12	1 ( 1.6)	0 ( 0.0)	0.00
85:15	2 ( 3.3)	0 ( 0.0)	0.00
80:20	13 (21.3)	4 (14.8)	0.69
75:25	6 ( 9.8)	2 ( 7.4)	0.76
70:30	23 (37.8)	12 (44.4)	1.17
67:33	1 ( 1.6)	1 (13.7)	2.31
65:35	1 ( 1.6)	0 ( 0.0)	0.00
60:40	5 ( 8.2)	3 (11.1)	1.35
50:50	7 (11.5)	4 (14.8)	1.29
	<u>61</u> <u>100.0</u>	<u>27</u> <u>99.9</u>	

Although table II.6 shows some relationship between increasing contractor downward sharing ratios and underrunning target prices, the correlations are not strong and we do not believe they clearly contradict other research. Also, the number of contracts was small and, even if the correlations were stronger, they would not infer a cause/effect relationship.

#### CONCLUSION

As would be expected since a target price is an estimate, only a few contracts' final prices matched the target prices exactly. However, there was a close clustering of final prices near target prices, with final prices exceeding the target by 10 percent or more on just 6 (9.7 percent) of the 62 contracts. Such a clustering is consistent with effectively performing incentive contracts. On the other hand, the FPI contracts we reviewed did not perform in accordance with that part of incentive theory which states that, as a contractor's share increases, the contractor has more incentive to closely control costs and thereby meet or underrun the established target. While our results were contrary to incentive theory, they are consistent with what other researchers have found.

OBJECTIVES, SCOPE, AND METHODOLOGY

Our objectives in performing this review were to (1) determine the number and percentage of FPI contracts attaining, underrunning, and overrunning contractually specified target prices, (2) determine the number and percentage of contracts reaching the contractual ceiling price, and (3) analyze whether FPI contracts were consistent with incentive theory.

As agreed in our discussions with Senator Levin's representatives, our review encompassed only FPI contracts (with incentives based on cost alone rather than on item performance or delivery or a combination of these factors) over \$25,000 and awarded between fiscal years 1977 and 1984. We used the automated DD Form 350 (Individual Procurement Action Report) system to develop an exhaustive listing of all FPI (cost) contracts awarded by DOD purchasing offices during those years. We selected fiscal year 1977 as the beginning year because, based on our past experience, this was the earliest year for which we considered the system's data reasonably complete and accurate. We selected 1984 as the ending year because this was the latest completed fiscal year at the time our review began.

The listing contained 1,521 contracts awarded by a total of 196 purchasing offices. The vast majority of these offices had awarded an average of two or fewer FPI contracts per year during the 8-year period we were covering, so we identified the two largest users of FPI contracts in the Army, Navy, and Air Force, and restricted our fieldwork to those six locations. Even though those locations accounted for 573, almost 38 percent, of all the FPI contracts in our original universe and nearly 50 percent of the total dollar value, the results of our work cannot be projected to all 196 purchasing offices.

To assess the relationship of target to ceiling prices, we identified 66 FPI (cost) contracts awarded and closed or finally priced by the 6 purchasing offices between fiscal years 1977 and 1984. (We discuss 62 of these contracts in this report. The Army's Communication and Electronics Command was unable to locate the other four contracts for our review.) Because the contract files were often incomplete, we interviewed procurement and administrative contracting officers to obtain the information needed.

The locations we visited during our review were:

Army

- Communications and Electronics Command, Fort Monmouth, New Jersey
- Missile Command, Huntsville, Alabama

Navy

- Naval Air Systems Command, Crystal City, Virginia
- Naval Sea Systems Command, Crystal City, Virginia

Air Force

- Aeronautical Systems Division, Air Force Systems Command, Wright-Patterson Air Force Base, Dayton, Ohio
- Electronic Systems Division, Air Force Systems Command, Hanscom Air Force Base, Bedford, Massachusetts
- Headquarters, Air Force Systems Command, Andrews Air Force Base, Camp Springs, Maryland

Our review was performed in accordance with generally accepted government auditing standards from November 1985 through April 1987.

CLOSED/FINAL PRICED CONTRACTS

Electronics Systems Division, Air Force Systems Command

<u>Contract number</u>	<u>Final price paid</u>	<u>Target price</u>	<u>Ceiling price</u>	<u>Final/target price diff. %</u>	<u>At target or ceiling</u>
F19628-77-C-0081	\$ 5,232,175	\$ 4,947,658	\$ 5,232,175	5.75	C
F19628-77-C-0099	312,841	299,688	312,841	4.39	C
F19628-77-C-0113	13,952,113	12,923,387	14,306,857	7.96	-
F19628-77-C-0209	2,350,609	2,350,609	2,630,058	0.00	T
F19628-77-C-0230	1,688,458	1,712,132	1,866,577	-1.38	-
F19628-78-C-0104	1,676,594	1,522,971	1,676,594	10.08	C
F19628-78-C-0123	6,971,594	7,097,764	7,303,525	-1.78	-
F19628-78-C-0161	12,943,517	13,821,641	14,913,055	-6.35	-
F19628-79-C-0002	1,886,878	1,959,023	2,100,586	-3.68	-
F19628-81-C-0103	1,660,744	1,841,000	1,955,064	-9.79	-
F30602-78-C-0273	<u>2,609,850</u>	<u>2,584,758</u>	<u>2,750,524</u>	<u>0.97</u>	-
Total 11	<u>\$51,285,373</u>	<u>\$51,060,631</u>	<u>\$55,050,856</u>	0.44	

Aeronautical Systems Division, Air Force Systems Command

<u>Contract number</u>	<u>Final price paid</u>	<u>Target price</u>	<u>Ceiling price</u>	<u>Final/target price diff. %</u>	<u>At target or ceiling</u>
F33657-76-C-0244	\$ 10,948,187	\$ 9,325,000	\$ 11,105,000	17.41	-
F33657-77-C-0198	66,259,550	66,139,211	70,350,944	0.18	-
F33657-77-C-0585	4,655,748	4,920,978	5,543,040	-5.39	-
F33657-78-C-0042	8,225,202	7,752,157	8,504,431	6.10	-
F33657-78-C-0095	42,066,403	43,359,704	45,588,955	-2.98	-
F33657-78-C-0096	52,274,460	51,574,676	54,968,037	1.36	-
F33657-78-C-0201	617,426	571,844	617,426	7.97	C
F33657-78-C-0277	7,819,347	8,563,301	9,354,932	-8.69	-
F33657-78-C-0481	866,072	784,325	866,072	10.42	C
F33657-78-C-0484	1,518,931	1,393,349	1,518,931	9.01	C
F33657-78-C-0651	486,347	609,090	656,416	-20.15	-
F33657-78-C-0738	<u>35,964,061</u>	<u>34,231,957</u>	<u>36,723,563</u>	<u>5.06</u>	-
Total 12	<u>\$231,701,734</u>	<u>\$229,225,592</u>	<u>\$245,797,747</u>	1.08	

APPENDIX IV

APPENDIX IV

U.S. Army Communications and Electronics Command

<u>Contract number</u>	<u>Final price paid</u>	<u>Target price</u>	<u>Ceiling price</u>	<u>Final/target price diff. %</u>	<u>At target or ceiling</u>
DAAB07-77-C-0019	\$ 2,139,884	\$ 2,219,500	\$ 2,339,538	-3.59	-
DAAB07-77-C-0909	3,700,490	3,537,361	3,700,490	4.61	C
DAAB07-77-C-2184	3,401,602	3,243,533	3,401,602	4.87	C
DAAB07-78-C-0007	6,830,363	6,698,764	7,081,302	1.96	-
DAAB07-78-C-3627	5,644,992	5,778,566	6,325,187	-2.31	-
DAAK80-79-C-0308	<u>2,310,149</u>	<u>2,133,295</u>	<u>2,427,371</u>	<u>8.29</u>	-
Total 6*	<u>\$24,027,480</u>	<u>\$23,611,019</u>	<u>\$25,275,490</u>	1.76	

U.S. Army Missile Command

<u>Contract number</u>	<u>Final price paid</u>	<u>Target price</u>	<u>Ceiling price</u>	<u>Final/target price diff. %</u>	<u>At target or ceiling</u>
DAAH01-77-C-0028	\$ 29,342,926	\$ 31,545,109	\$ 34,272,957	-6.98	-
DAAH01-77-C-0069	4,343,004	4,386,097	4,913,169	-0.98	-
DAAH01-77-C-0111	30,233,839	31,751,303	34,728,030	-4.78	-
DAAH01-77-C-0112	24,955,281	30,176,893	33,232,584	-17.30	-
DAAH01-78-C-0648	3,571,528	3,650,000	4,087,219	-2.15	-
DAAH01-79-C-1636	5,380,349	4,957,356	5,380,349	8.53	C
DAAH01-80-C-0500	2,647,248	2,940,602	3,297,675	-9.98	-
DAAH01-80-C-1008	1,012,055	958,347	1,012,055	5.60	C
DAAK40-78-C-0042	<u>18,784,236</u>	<u>19,849,804</u>	<u>22,070,742</u>	<u>-5.37</u>	-
Total 9	<u>\$120,270,466</u>	<u>\$130,215,511</u>	<u>\$142,994,780</u>	-7.64	

\*During our review we identified four additional Communications and Electronics Command contracts we believed were finally priced. The Communications and Electronics Command, however, was unable to locate the contracts for our review. One additional Communications and Electronics Command FPI contract was terminated for the convenience of the government before the government received its deliverable products.

Naval Sea Systems Command

<u>Contract number</u>	<u>Final price paid</u>	<u>Target price</u>	<u>Ceiling price</u>	<u>Final/target price diff. %</u>	<u>At target ceiling</u>
N00024-77-C-2043	\$ 54,890,231	\$ 52,176,891	\$ 56,723,822	5.20	-
N00024-77-C-4053	8,106,685	8,397,820	9,021,830	-3.47	-
N00024-77-C-4066	900,569	900,728	992,074	-0.02	-
N00024-77-C-4201	405,735	404,976	437,790	0.19	-
N00024-77-C-5148	3,893,943	3,774,532	4,189,500	3.16	-
N00024-77-C-6086	4,138,239	4,024,884	4,138,239	2.82	C
N00024-77-C-6124	2,803,599	2,798,000	2,941,892	0.20	-
N00024-77-C-6202	19,013,271	20,377,142	22,326,000	-6.69	-
N00024-78-C-2318	35,918,371	35,918,371	38,071,672	0.00	T
N00024-78-C-2319	31,292,000	30,500,000	36,495,637	2.60	-
N00024-79-C-6023	34,877,528	34,402,840	37,824,318	1.38	-
N00024-79-C-6361	1,296,144	1,092,392	1,296,144	18.65	C
Total 12	<u>\$197,536,315</u>	<u>\$194,768,576</u>	<u>\$214,458,918</u>	1.42	

Naval Air Systems Command

<u>Contract number</u>	<u>Final price paid</u>	<u>Target price</u>	<u>Ceiling price</u>	<u>Final/target price diff. %</u>	<u>At target ceiling</u>
N00019-76-C-0247	\$ 5,430,204	\$ 5,661,000	\$ 5,967,000	\$ -4.08	-
N00019-76-C-0309	8,212,000	7,948,823	8,561,091	3.31	-
N00019-76-C-0605	21,814,927	22,756,533	24,807,497	-4.14	-
N00019-77-C-0457	41,193,257	39,289,546	41,843,106	4.85	-
N00019-78-C-0063	95,736,456	92,312,914	106,948,139	3.71	-
N00019-78-C-0132	15,283,752	14,076,894	15,569,002	8.57	-
N00019-78-C-0263	16,106,097	16,148,420	17,957,745	-0.26	-
N00019-79-C-0011	5,859,450	5,903,115	6,130,842	-0.74	-
N00019-79-C-0056	11,630,301	10,777,289	11,630,301	7.91	C
N00019-79-C-0152	114,744,802	116,040,662	126,640,662	-1.12	-
N00019-79-C-0170	21,524,948	20,539,865	21,844,813	4.80	-
N00019-79-C-0378	17,084,015	17,177,035	17,331,962	-0.54	-
Total 12	<u>\$374,620,209</u>	<u>\$368,632,096</u>	<u>\$405,232,160</u>	1.62	

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