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RELEASED

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AUG 2 2 1973

The Honorable Henry S. Reuss
 House of Representatives

74-0217

Dear Mr. Reuss:

We have reviewed the pricing of firm fixed-price contract F34601-72-A-0032-QP95, awarded without competition by Ogden Air Materiel Area, U.S. Air Force, to the McDonnell-Douglas Corporation in June 1972. The contract provided for modifying certain surplus Air Force trainers to provide a mobile training set for F-4C aircraft and for applicable drawings and handbooks. The training set consisted of 20 trainers for various systems of the F-4C aircraft.

We made our review pursuant to your January 24, 1973, request based on statements by a constituent that the:

- Proposed contract price of \$302,584 was increased to \$640,000.
- Contract is overpriced for reidentifying 12 trainers, since this is only a matter of changing name and data plates.
- Contractor is charging for two trainers not requiring any work.
- Modification cost of two trainers exceeds the original purchase price.
- Military personnel could reidentify trainers at a lower cost.

Although these statements appeared to be correct, the Air Force provided explanations to support its actions as discussed below. At the time of negotiations, however, realistic cost estimates for doing the work were not available for establishing a firm fixed price; therefore, a cost-type contract would have been appropriate. Had such a contract been awarded, the Government could have saved an estimated \$186,000.

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BACKGROUND

The training set was to be sold to the Spanish Air Force. The U.S. Air Force considered its need to be urgent because failure to deliver could adversely affect Spain's F-4C training program and United States diplomatic relations with Spain.

The trainers were to be modified for systems on F-4C aircraft which had been sold to Spain. Part of the work was to be done at McDonnell's St. Louis, Missouri, plant and part at Torrejan Air Base, Spain, by a McDonnell field team.

Work scheduled to be completed February 28, 1973, in St. Louis included:

- Designing and engineering effort, including researching, revising, and preparing technical data, drawings, and operating handbooks.
- Manufacturing modification kits and name and data plates to be installed in Spain.
- Extensive modification and testing of three trainers involving removing F-4D and/or F-4E systems and replacing them with F-4C systems.

Work scheduled to be completed March 31, 1973, in Spain included:

- Installing modification kits and name and data plates.
- Extensive modification and testing of three trainers.

The matters questioned by your constituent are discussed below.

PROPOSED CONTRACT PRICE
SUBSTANTIALLY INCREASED

The Air Force obligated \$254,584 when the letter contract was awarded in June 1972. This amount, 50 percent of a

budgetary estimate obtained from McDonnell, limited the contractor's authority to incur costs pending final price negotiations. Air Force officials said this was normal practice in obligating funds for letter contracts. The Air Force increased the amount to \$302,584 on June 27, 1972. These amounts were obligations of funds, not contract prices.

The contract price of \$640,000 was established in December 1972. (See p. 6.)

CONTRACT IS OVERPRICED FOR
REIDENTIFYING TRAINERS

The contract price for reidentifying 12 of the 20 trainers at \$4,592 each was included by Air Force procurement officials as an allocation of the total price negotiated and was not established through negotiations. The contractor maintains that only the total price of \$640,000 was negotiated and that no attempt was made to reach agreement on the price for each contract item. This statement was supported by the Air Force contract negotiator who said that the breakout of prices shown on the contract represented the negotiator's allocation of the total price to each contract item.

Reidentifying the 12 trainers involved more work than changing name and data plates. The contract required the contractor to furnish engineering drawings for the Spanish training set. Reidentifying the trainers required new drawings to relate the trainers to the F-4C aircraft used by the Spanish Air Force, to identify Spanish ownership of the trainers, and for subsequent logistic support. This, in turn, required revisions to various assembly drawings. According to contractor and Air Force officials, the engineering effort to research the drawings, incorporate the engineering orders into the drawings, and identify the drawings as applicable to the Spanish trainers was reflected in the total price.

CONTRACTOR CHARGED FOR MODIFYING
TRAINERS NOT REQUIRING WORK

As discussed above, the prices shown in the contract for individual items were not established by negotiation. The

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contractor's price proposal recognized that two of the trainers required no work other than researching and reidentifying engineering data and drawings. This work was not separately defined in the proposal but was included with the work proposed for reidentifying the trainers requiring reidentification only.

MODIFICATION COST OF TWO TRAINERS
EXCEEDED ORIGINAL PURCHASE PRICE

The U.S. Air Force purchased the 20 trainers under F-4 aircraft production contracts shown below.

<u>Description</u>	<u>Fiscal year of contract</u>	<u>Price</u>
One mobile training set, RF-4C aircraft configuration	1962	\$2,777,000
Three mobile training sets, F-4C aircraft configuration	1963	<u>6,875,000</u>
Total		<u>\$9,652,000</u>
Modify above four F-4C mobile training sets to F-4C/D aircraft configuration (note a)	1964	\$4,042,000

^aParts of these units were later modified to an F-4E configuration.

On each of the above contracts, the mobile training sets were priced as single line items; the individual trainers included in the sets were not priced separately. The two trainers referred to by your constituent were part of one of the training sets purchased on the fiscal year 1963 contract.

The two trainers shown in the Air Force inventory were valued at \$41,200 and \$97,000. The Air Force item manager for the trainers said the inventory values were estimates established by the Air Force for accountability purposes only and had no direct relationship to initial acquisition costs.

Further, the prices of \$44,816 and \$200,982 shown in the contract for these two trainers were Air Force allocations of the total contract price.

CHANGING NAME AND DATA PLATES
COULD BE ACCOMPLISHED AT LOWER COST

Before entering into the contract with McDonnell, the Air Force contracting officer determined that the Air Force was not capable of performing the modification because it lacked specialized tooling, test equipment, and technical knowledge.

The work required of the contractor for reidentifying the trainers involved more than changing the name and data plates. (See p. 3.) The contractor's proposal did not show a separate price for installing new plates. Since the contractor had to have a team in Spain to modify the trainers, the decision to have the contractor also install the new plates appears reasonable.

QUESTIONABLE USE OF A
FIRM FIXED-PRICE CONTRACT

In view of the lack of experience and the use of engineering judgment to estimate costs, the award of a firm fixed-price contract appeared questionable.

The letter contract was not priced when it was awarded in June 1972; the contractor submitted a price proposal of \$715,641 on September 19, 1972. McDonnell developed its proposal by estimating

- material and travel cost,
- labor for modifying 6 trainers,
- labor for work on the other 14 trainers, and
- engineering to update drawings and revise technical handbooks.

Overhead and general and administrative expenses were included in the price at plantwide rates recently accepted by the Air Force for other work at McDonnell.

In estimating labor hours, McDonnell did not have experience in modifying trainers from other configurations to F-4C. For the six trainers requiring extensive modification, McDonnell used labor hours experienced in manufacturing similar new trainers adjusted by engineering estimates of the effort required for the modifications. For the other 14 trainers and the fieldwork in Spain, McDonnell estimated staffing requirements and the hours required for each worker. Engineering hours were based on the number of pages of handbooks to be revised and the staffing requirements to update the drawings. Plantwide average manufacturing and engineering labor rates were applied to the estimated hours. The estimated hours depended for the most part on estimates which were not supported by experienced hours for similar work.

The Air Force negotiating team obtained evaluations of the proposal from the Air Force Plant Representative and Department of Defense auditors. The Air Force Plant Representative recommended minor reductions in the estimated hours, and Department of Defense auditors reported that the use of plantwide average labor rates tended to increase the price. Using these recommendations, data provided in the proposal, and contract costs recorded through November 1972, an Air Force analysis established the negotiation objective of \$617,008.

	<u>Contractor proposed</u>	<u>Air Force objective</u>	<u>Negotiated price</u>
Labor	\$276,419	\$245,114	\$252,694
Overhead	236,127	208,940	215,188
Material	22,773	22,567	22,567
Direct expense	16,605	16,587	16,587
General and adminis- trative expense	<u>70,409</u>	<u>62,657</u>	<u>64,393</u>
Total cost	622,333	555,865	571,429
Profit	<u>93,308</u>	<u>61,143</u>	<u>68,571</u>
Total price	<u>\$715,641</u>	<u>\$617,008</u>	<u>\$640,000</u>

The profit negotiated was about 12 percent of cost. Through April 1973 McDonnell recorded a cost of \$405,056, or \$166,373 less than the negotiated cost. This indicated that a profit of \$234,944, or 58 percent of cost, would be realized. The cost may be increased by late unrecorded charges since the fieldwork under the contract was not completed until April 1973.

We attribute the higher profit realized to the use of a firm fixed-price contract although a realistic basis for cost estimates or prior cost experience was not available to insure a reasonable price. The contracting officer disagreed, saying that use of a firm fixed-price contract was proper because the contractor had previously manufactured new trainers in the F-4C configuration and because the configuration was well defined in the work statement.

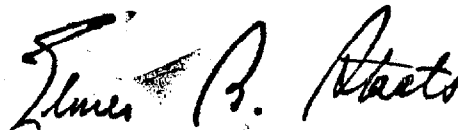
However, the contracting officer and McDonnell officials said they would negotiate a price reduction. The amount of the reduction had not been established when we completed our review. If the price is adjusted on the basis of costs incurred plus the negotiated profit of 12 percent, the Government would save about \$186,000.

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We did not obtain written comments from any of the parties discussed in this report; however, we discussed it informally with them.

We do not plan to distribute this report further unless you agree or publicly announce its contents. Please let us know if you want further details on these matters.

Sincerely yours,



Comptroller General
of the United States