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UNITED STATES GENERAL ACCOUNTING OFFICE  
REGIONAL OFFICE  
ROOM 7054, FEDERAL BUILDING  
300 NORTH LOS ANGELES STREET  
LOS ANGELES, CALIFORNIA 90012

APR 16 1971



Mr. F. H. Krantz  
Vice President and General Manager  
Electromagnetic and Aviation  
Systems Division  
RCA Corporation  
8500 Balboa Boulevard  
Van Nuys, California 91409

Dear Mr. Krantz:

This is to advise you that we have completed a review of the prices negotiated for contract N00104-68-C-3434 awarded to RCA Corporation, Electromagnetic and Aviation Systems Division by the U. S. Navy Ships Parts Control Center (SPCC). We also examined selected aspects of the negotiation of contract N00024-68-C-1092 awarded by the Naval Ship Systems Command (NSSC).

Our review of contract -3434 was directed primarily toward determining the reasonableness of proposed costs in accordance with the requirements of Public Law 87-653 and the implementing provisions of the Armed Services Procurement Regulation.

We found that the negotiated contract costs were higher than indicated by available cost information prior to negotiations by about \$46,500 including applicable overhead and profit. This resulted primarily because RCA did not update the cost proposal prior to negotiations to reflect the most current data on labor hours and other costs experienced under letter contract -3434.

Our review of contract -1092 was directed toward evaluating (1) the adequacy of RCA's cost analysis of major subcontract proposals, (2) the feasibility of direct procurement by the Government of traveling wave tubes, and (3) the reasonableness of negotiated profit rates for major field modifications involving the procurement of stock repair parts.

The results of our review which were discussed with the Manager, Operations Control, and other RCA financial and contract officials are presented as follows.

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CONTRACT NO0104-68-C-3434

Letter contract -3434, dated January 11, 1968, provided for the production of 27,200 MK 25, Mod 0, fuze monitors. On February 8, 1968, RCA submitted a cost proposal in the amount of \$715,654 in response to the requirements of the letter contract. The proposed price was reduced to \$694,960, the same amount estimated in the letter contract price. On March 1, 1968, the contracting officer exercised a contract option increasing the total units to 40,200. RCA was not requested to submit a revised proposal for the new quantity.

Contract negotiations took place between May 24 and June 11, 1968. As of May 23, 1968, 13,600 units or 34 percent of the contractual units had been delivered. A unit price of \$24.95 was negotiated resulting in a total contract price of \$1,002,990. RCA executed a Certificate of Current Cost or Pricing Data on June 11, 1968, and a defective pricing clause was included in the contract.

Assembly labor costs

We estimate that the assembly labor costs negotiated under the contract were higher than indicated by available cost information by about \$41,200 including applicable overhead and profit. This resulted primarily because RCA did not update the cost proposal to reflect the most current assembly labor data available at the time of negotiations.

RCA proposed assembly labor of 1.0249 hours a unit or \$101,186 for the total contract requirements. The proposed hours were based on a standard time of 0.6486 hours a unit adjusted upward to 0.9469 hours by a Labor Utilization Index (LUI) factor of 68.5 percent.

Our review disclosed that at the time of negotiations RCA had available LUI's from completed production jobs under the preceding fuze contract DAAG-39-67-C-0033 (recorded under RCA job numbers 575 and 609) and from the letter contract -3434 (recorded under RCA job number 627). The company, however, utilized data available through February 8, 1968, which did not take into consideration production data under the letter contract. A comparison of the negotiated assembly hours with data available at the time of negotiations is as follows:

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<u>Proposed and negotiated LUI factor</u>	<u>Hours</u>	<u>Data available at the time of negotiations</u>		<u>Increase in contract price</u>
		<u>Job #</u>	<u>Weighted average LUI</u>	
68.5%	38,065	627	78.1%	\$35,600
		627) 609)	75.0%	23,900
		627) 609) 575)	70.7%	8,600

We believe that the LUI experienced under the letter contract (Job #627) would have been the most relevant and current data available at the time of negotiations since it represents experienced data for at least one-third of the contractual units.

We were informed by an RCA official that the more current LUI factors were not disclosed to the contracting officer. According to the official, the proposal was not revised at the time of contract negotiation because of a management decision that (1) the portion of letter contract -3434 completed prior to negotiations was not a sufficient basis for predicting the outcome of contract performance, and (2) the trend of decreasing production levels at RCA would lead to reduced labor efficiencies. In addition, we were advised that a lump sum reduction in the contract price resulted primarily from reductions in proposed labor costs.

We believe that the LUI factor experienced under the letter contract should have been disclosed to the contracting officer during negotiations. Also, the contracting officer's record of negotiation indicated no reduction in assembly labor costs.

In addition to the proposed assembly hours, RCA proposed a 5 percent factor for a break-in-production to cover a transition period between production on the preceding fuze monitor contract and letter contract -3434. The proposed factor was negotiated into the contract and amounted to 1,903 hours.

RCA experienced the break-in-production in February 1968 prior to negotiations of contract -3434 in the amount of 1,125 hours, or 778 less than proposed. The labor hour difference amounted to about \$5,600 including overhead and profit. An RCA official agreed that the actual break-in-production labor hours charged to the contract were

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less than the negotiated amount; however, we were advised that additional hours were actually experienced but were charged to the wrong contract. The contractor could not furnish us any evidence to this effect.

In our opinion, the experienced labor hours under letter contract -3434 should have been disclosed to the contracting officer during negotiations.

Test technician labor costs

We estimate that test technician labor costs negotiated under the contract were higher than indicated by cost information available prior to negotiations by about \$6,700. Similarly to assembly labor, this resulted primarily because RCA did not update the proposal to reflect the most current and available labor hour data.

RCA proposed test technician labor of 0.2713 hours a unit, or \$38,849 for the total contract requirements. The proposed hours were based on a standard time of 0.2029 hours a unit adjusted to 0.2713 hours by an LUI factor of 74.8 percent.

Our review showed that RCA was experiencing a higher LUI factor for test technician labor hours under the most current production jobs than the negotiated LUI factor. A comparison of the negotiated test technician hours with data available at the time of negotiations is as follows:

<u>Proposed and negotiated LUI factor</u>	<u>Hours</u>	<u>Data available at the time of negotiations</u>		<u>Increase in contract price</u>	
		<u>Job #</u>	<u>Weighted average LUI</u>		<u>Computed hours</u>
74.8%	10,906	627	79.6%	10,247	\$6,700
		627) 609)	79.5%	10,259	6,600
		627) 609) 575)	74.8%	10,906	-0-

We believe the LUI experienced under the letter contract (Job #627) would have been the most relevant and current data available at the time of negotiations.

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An RCA official advised us that the more current LUI factors were not disclosed to the contracting officer for the same reason as previously cited for assembly labor.

Production engineering labor costs

In consideration of the requirements of Defense Procurement Circular No. 77 regarding the "setoff" principles of understated costs or pricing data, we estimate that RCA's proposed production engineering labor costs were understated by about \$1,400 including applicable overhead and profit.

RCA proposed a production engineering labor rate of \$6.03 an hour although the approved bid rate was \$6.30 an hour. The cost proposal identified that all direct labor rates were based upon approved bid rates. The erroneous labor rate was subsequently negotiated into the contract price.

CONTRACT NO0024-68-C-1092

Contract -1092, awarded on November 15, 1967, provided that RCA furnish stock repair parts, supply support backup and overhaul and repair capability to maintain electronic equipment previously procured by the Navy from RCA under other prime contracts. Under the terms of the contract, the negotiation of prices for repair parts and assemblies/subassemblies to be repaired, is the responsibility of the Defense Contract Administration Services (DCAS). At the completion of our review, field modifications totaling over \$4.6 million had been negotiated under the contract.

Review of proposed subcontract costs

We reviewed three major contract modifications involving the procurement of traveling wave tubes (TWT's) from Hughes Aircraft Company as follows:

<u>Modification number</u>	<u>Contract -1092</u>		<u>RCA proposal for TWT's including add-on pricing factors</u>
	<u>Date negotiated</u>	<u>Negotiated price</u>	
17	9/24/69	\$490,477	\$378,114
12	5/16/69	303,784	204,776
10	4/25/69	563,368	402,774

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The TWT's were procured on a sole source basis and, as a result, RCA was required to obtain cost or pricing data from the supplier and perform a cost analysis of the data obtained. We found that RCA performed an adequate cost analysis of the supplier's proposals with the exception of labor hours and yield factors which were not verified.

In our opinion, the RCA cost analysis should have included such a verification since proposed subcontract labor costs were a significant factor in the pricing of TWT's. In future procurements involving major noncompetitive subcontract price proposals, we believe that RCA should verify significant cost or pricing data or obtain such analyses through DCAS where appropriate.

Feasibility of direct  
procurement of TWT's

Our review showed that 53 TWT's were purchased by RCA as spare parts under contract -1092. The TWT's were obtained from the Electron Dynamics Division of Hughes at prices ranging from \$10,250 to \$11,500 for each model 338H tube and \$25,100 each for model 702H. The subcontract prices included in RCA's cost proposals were adjusted upward by substantial add-on factors (material overhead, requisition engineering, general and administrative expense, and profit). For example, a TWT costing RCA \$10,250 was negotiated in the contract modification price at \$15,750, a 54 percent increase.

In reviewing the RCA processing of the TWT from receipt to issue, we found that RCA expended about 16 hours of direct labor for each TWT. This effort primarily consisted of (1) installation of a tube mounting bracket, and (2) electronic testing. The labor effort was significantly reduced in March 1970 when RCA stopped performing electronic testing of TWT spares.

In view of the minimal in-house labor effort required and the substantial markups in the price of the tubes, we discussed with RCA, Hughes, and Navy officials the possibility of direct Government purchase of the TWT's. We found that:

- Both RCA and Hughes officials agreed that it would be technically feasible for the Government to buy the tubes direct from the manufacturer.
- The RCA rejection rate for new TWT's received from Hughes was only 3 percent on recent contracts.

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