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UNITED STATES GENERAL ACCOUNTING OFFICE
REGIONAL OFFICE
ROOM 7068, FEDERAL BUILDING
300 NORTH LOS ANGELES STREET
LOS ANGELES, CALIFORNIA 90012

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AUG 6 1974

Mr. Peter Van Benschoten
Vice President - Operations
Amphenol SAMS Operations
The Bunker-Ramo Corporation
9201 Independence Avenue
Chatsworth, California 91311



Dear Mr. Van Benschoten:

As part of a nationwide review of the effectiveness of Defense procurement regulations concerning subcontract cost or pricing data submissions, we have examined the prices proposed and negotiated for major firm fixed-price subcontracts involving cable assemblies procured from Amphenol Space and Missile Systems Division, Chatsworth, California, under fixed-price incentive prime contracts for the fiscal year 1972 MINUTEMAN III missile procurement. In particular, our review included subcontracts A1MM-528334 and A2MM-528336 awarded by the Autonetics Group, Rockwell International Corporation, under contract F04701-69-C-0194 and subcontract 633693-28(29) awarded by the Bell Aerospace Company under contract F04701-71-C-0038. Our review primarily concerned the reasonableness of the subcontract estimates included in the prime contract prices in relation to cost or pricing data available at the time of prime contract or subcontract negotiations.

We found that:

- The amount negotiated in the target price of contract -0194 for the Amphenol subcontract effort was about \$775,900 higher than indicated by available cost data at the time of prime contract negotiations.
- The amount negotiated in the target price of contract -0038 for the Amphenol subcontract effort was about \$168,100 higher than indicated by available cost data at the time of subcontract negotiations.

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Mr. Peter Van Benschoten

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The results of our review, presented in the enclosed report, have been discussed with Amphenol financial and marketing officials who generally concurred with the validity of our approach and the accuracy of the reported issues.

We are also reporting the results of our review to the Commander, Space and Missile Systems Organization; Air Force Plant Representative at Autonetics; Regional Manager, Defense Contract Audit Agency; and the respective prime contractors. We would appreciate any comments you may wish to make on the matters discussed in the enclosure.

We would like to take this opportunity to acknowledge the courtesy and cooperation extended to our representatives during the review.

Very truly yours,

J. T. HALL, JR.
Regional Manager

Enclosure

REPORT ON
REVIEW OF THE REASONABLENESS OF AMPHENOL
SUBCONTRACT ESTIMATES INCLUDED IN THE PRICES
OF PRIME CONTRACTS
FOL701-69-C-0194 AND FOL701-71-C-0038

BACKGROUND

The Los Angeles Regional Office has reviewed selected subcontracts at Amphenol Space and Missile Systems Division, Chatsworth, California, to determine if Defense procurement regulations have been effective in assuring that subcontract estimates included in negotiated prime contract prices are based on current, complete, and accurate cost or pricing data at the time of prime contract or subcontract negotiations. Defense Procurement Circular (DPC) 74 was issued on October 10, 1969, effective January 1, 1970, and required prime contractors to obtain and submit to contracting officers subcontractor cost or pricing data in support of estimates included in the prime contractor's proposal. This requirement was incorporated into the Armed Services Procurement Regulation (ASPR) 3-807.3(b)(1) on April 30, 1971.

Prior to DPC 74, Public Law 87-653, the Truth in Negotiations Act, required contracting officers to obtain certified cost or pricing data from prime contractors in support of price proposals prior to contract award. Prime contractors were required to obtain similar data from prospective subcontractors prior to subcontract award. However, since most subcontracts are entered into after prime contract award, subcontractor data was not required to be provided to the contracting officers for consideration in negotiating prime contract prices. The current

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procurement procedure provides a sounder basis for Government and prime contractor evaluation of the reasonableness of the subcontract estimate for prime contract pricing.

Our review included the following firm fixed-price subcontracts awarded to Amphenol, relating to procurements of cable assemblies under the fiscal year 1972 MINUTEMAN III missile procurement:

- A1MM-528334 and A2MM-528336 awarded by the Autonetics Group, Rockwell International Corporation, under prime contract FO4701-69-C-0194 for the guidance and control system, and
- 633693-28(29) awarded by the Bell Aerospace Company under prime contract FO4701-71-C-0038 for the propulsion system rocket engine.

SUBCONTRACTS A1MM-528334
AND A2MM-528336

On November 11, 1971, Amphenol submitted a price proposal to Autonetics amounting to \$3,702,600 for 122 P113C and 122 P114C cable assemblies and support services. The Amphenol proposal was subsequently considered in prime contract price negotiations completed on March 24, 1972. On May 19, 1972, Amphenol submitted a revised proposal to Autonetics of \$3,261,000 which included revisions in all cost elements. On July 19, 1972, Autonetics negotiated subcontract prices totaling \$2,354,000.

We found that the negotiated prime contract target price included costs for the Amphenol work which were about \$775,900 higher than indicated by available subcontract cost data at the time of prime contract negotiations:

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	<u>Proposed amount</u>	<u>Amount negotiated in excess of current, complete, and accurate cost data</u>
Material	\$ 801,400	\$ 51,800
Direct labor	1,033,100	214,500
Material handling	61,400	(10,000)
Plant burden	848,900	250,500
General and administrative	561,000	185,900
Profit	<u>396,800</u>	<u>83,200</u>
Total	<u>\$3,702,600</u>	<u>\$775,900</u>

Material

Amphenol's priced bill of material generally was based on prior purchase history. We reviewed about \$591,000, or 74 percent, of the proposed material costs, and found that negotiated costs were about \$51,800 higher than warranted, as follows:

Purchased parts	\$32,300
Tooling	20,600
Error in wire quantity	13,800
Addition error	<u>(2,400)</u>
Subtotal	64,300
Apparent understatement of absorbed material burden	<u>(9,800)</u>
Subtotal	54,500
Less: Autonetics 5 percent pricing reduction	<u>(2,700)</u>
Total	<u>\$51,800</u>

Proposed prices for 36 purchased parts were higher than warranted by about \$32,300. For example, Amphenol proposed \$40.00 a unit for a bracket assembly, part number 66872-402-1, based on a purchasing department estimate. We found that Amphenol purchased the quantity required for the subcontract on December 14, 1971, about 3 months before prime contract negotiations, at \$7.72 a unit. This amounted to about \$3,900 less than proposed for 122 units.

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Proposed tooling prices were higher than warranted by about \$20,600. To illustrate, Amphenol proposed \$9,800 a unit for two aft assembly harness boards, part number TW-545-71-0227-2-01. On February 20, 1972, about 1 month before prime contract negotiations, Amphenol purchased the harness boards at \$3,310 a unit, or about \$13,000 less than proposed for the two units.

Amphenol proposed wire requirements of 3,427 feet for each P113C cable, on the basis of a Configuration And Processing Assembly Parts List (CAPAPL) issued by Autonetics on October 26, 1971. We found that prior to prime contract negotiations, Autonetics issued two revisions to the CAPAPL, reducing the quantity to 2,633 feet per cable, or 96,868 feet less than proposed for 122 cables. The overstated quantity resulted in increased proposed costs of about \$13,800.

The proposed absorbed material burden rate of 9 percent was based on historical data for the 10 months ended July 31, 1971. The more current experienced rate for calendar year 1971 was 10.5 percent. The rate difference applied to negotiated material costs, less questioned material costs of \$51,800, resulted in an apparent understatement of about \$9,800.

Direct labor

Amphenol proposed direct labor costs of \$1,033,100 based on estimated labor hours and hourly rates as of July 1971 escalated for anticipated union increases in fiscal years 1972 and 1973. Departmental overhead rates based on historical data for the 10 months ended July 31, 1971, were applied to the labor rates. The proposed labor rates were fairly

representative of the rates being experienced at the time of prime contract negotiations. The use of more current information available at the time of prime contract negotiations would not have had an appreciable impact on the amount proposed by Amphenol for direct labor costs.

Amphenol proposed 110,130 hours for the manufacture of cables. The estimate was developed in two stages. First, the industrial engineering department developed labor hour standards based on the time required to produce the theoretical "1,000th unit." The total labor hour estimate at the 1,000th unit standard for production of 122 each P113C and P114C cables was 80,112 hours. The standards were then plotted on an improvement curve at the cumulative midpoint of the proposed production lot. As a result, Amphenol estimated that an additional 30,000 hours would be required to produce the cables at a much lower production lot quantity than the "1,000th unit."

At the time of this procurement, Amphenol maintained a standard cost accounting system. Direct labor hours were recorded based on the 1,000th unit labor hour standards discussed above. Any differences between the standard labor costs booked and the actual costs incurred were charged to "variance" accounts which were included in the plant burden pool. Therefore, the plant burden rate proposed by Amphenol for this procurement, which was based on historical experience, already provided for unfavorable labor variances between the 1,000th unit standard hours recorded and actual hours expended. As a result, allowances for unfavorable labor hour variances were included both in the direct labor hour estimate and in the proposed plant burden rate. We estimate that

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the Amphenol proposal was overstated by about 30,000 hours or \$214,500 of the subcontract effort considered negotiated in the prime contract price.

Material handling

Amphenol proposed an unabsorbed material handling rate of 7.66 percent of bill of material prices, or \$61,400 for material handling expenses. The rate was based on historical data for the 8 months ended August 31, 1971.

We found that the material handling rate for the 12 months ended December 31, 1971, was 9.59 percent. In deriving the rate, we made certain adjustments in Amphenol's estimating methodology. The material cost variances were deleted from the material handling expense pool and included in the base material costs used to derive the rate. This change was consistent with Amphenol's method of proposing bill of material costs, and was concurred in by Amphenol officials.

The difference between the proposed and experienced rate applied to negotiated material costs, less questioned costs of \$51,800, resulted in an apparent understatement of about \$10,000.

Plant burden

Amphenol proposed a plant burden rate of 82.15 percent of proposed direct labor costs on the basis of historical experience for the 8 months ended August 31, 1971. Proposed plant burden amounted to \$848,900.

We found that the plant burden rate experienced for the 12 months ended December 31, 1971, was 72.9 percent. Had the lower, more current rate been used as a basis for the proposed plant burden costs, the prime

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contract target price would have been about \$250,500 less than the amount negotiated. About \$94,200 of the increase is due to the use of the lower rate and about \$156,300 is due to the application of the higher negotiated rate to the overstated direct labor costs.

General and administrative

Amphenol proposed a general and administrative (G&A) expense rate of 20.44 percent based on experienced costs for the 8 months ended August 31, 1971. This amounted to about \$561,000.

We found that the G&A rate for the 12 months ended December 31, 1971, was about 16.7 percent. The higher proposed rate of 20.44 percent was primarily attributed to Amphenol's use of an understated cost of sales base in computing the proposed rate. Amphenol had excluded tooling, material handling, and plant burden costs of \$1,347,900 from the standard cost of sales base for the 8-month period. Had Amphenol computed the rate using a proper cost of sales base for the 8 months ended August 31, 1971, the proposed G&A rate would have been 16.3 percent.

Had the more current and accurate experienced rate of 16.7 percent been used as a basis for the proposal, G&A costs in the prime contract target price would have been about \$185,900 less than negotiated. About \$101,500 relates to the use of the lower rate and about \$84,400 relates to the application of the higher negotiated rate to the overstated material, labor, and indirect costs.

SUBCONTRACT 633693-28(29)

On April 30, 1971, Amphenol submitted a price proposal to the Bell Aerospace Company amounting to \$2,026,700 for 127 P107B cable assemblies and support services. Subcontract negotiations were completed between

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Bell and Amphenol on July 16, 1971. Bell issued purchase order 633693-28(29) to Amphenol on August 11, 1971, for 132 cable assemblies, amounting to \$1,721,800. The \$304,900 reduction was achieved primarily in the areas of labor costs and indirect expenses.

About 4 months later, on December 9, 1971, Bell and the Space and Missile Systems Organization (SAMSO) negotiated prime contract -0038, PZ0003 for the fiscal year 1972 procurement of propulsion system rocket engines, which included \$1,678,500 for 128 Amphenol cable assemblies.

We found that the subcontract costs included in the prime contract target price for the 128 Amphenol cables was about \$168,100 higher than warranted based on subcontract cost or pricing data available at the time of subcontract negotiations:

	<u>Proposed amount</u>	<u>Amount negotiated in excess of current, complete, and accurate data</u>
Material	\$ 661,900	\$ 15,000
Direct labor	393,000	-0-
Material handling	61,400	24,100
Plant burden	307,400	41,300
Travel and per diem	9,100	-0-
General and administrative	331,000	69,700
Profit	<u>262,900</u>	<u>18,000</u>
Total	<u><u>\$2,026,700</u></u>	<u><u>\$168,100</u></u>

Material

Amphenol's priced bill of material was based on vendor price quotations and previous purchase history. We reviewed about \$478,900, or 72 percent, of the proposed and negotiated material and found that the costs were higher than warranted by about \$15,000. For example, the negotiated prime contract price included \$8,500 for 128 reusable transport

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bracket assemblies, part number 201-10223. The assembly is used to hold the cable in place during shipment. We found, however, that Amphenol had purchased and received 106 brackets under the fiscal year 1969 cable procurement and had not purchased any additional brackets since that time. Amphenol officials pointed out that the brackets are an integral part of the reusable shipping containers and are returned by Bell after each shipment. Therefore, the initial quantity purchased was sufficient for future production and shipments.

A review of other purchased parts disclosed that the proposed prices for eight items were not based on current purchasing information prior to subcontract negotiations. Proposed prices were higher than indicated by available data by \$6,500, net of understated prices for several purchased parts.

Direct labor

Amphenol proposed direct labor costs of \$393,000. In subcontract negotiations, Bell was able to achieve significant reductions in proposed labor costs. We found that the Amphenol labor hour estimate duplicated certain provisions in the proposed plant burden rate similar to those discussed on page 5 of this report. This resulted in an apparent overstatement of about \$38,200. However, this overstatement was substantially offset by understatements relating to the use of noncurrent labor rates.

Material handling

Amphenol proposed an unabsorbed material handling rate of 9.2 percent based on historical costs for the 12 months ended December 31, 1970, or \$61,400 for material handling expenses. We found that, in computing the material handling rate, Amphenol omitted tooling expenses

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amounting to about \$715,000 from the material cost base. Including these costs in the base, and providing adjustments for material cost variances similar to those described on page 6 of this report, we found that the material handling rate for the 12 months ended December 31, 1970, was about 5.22 percent. Had the Amphenol proposal been based on the more accurate rate, material handling costs would have been about \$24,100 less than negotiated in the prime contract target price. About \$23,300 relates to the rate difference and \$800 to overstated material costs.

Plant burden

Amphenol proposed a plant burden rate of 78.22 percent based on historical costs for the 12 months ended December 31, 1970, or \$307,400 for plant burden expenses. We found that tooling expenses of about \$195,000 had been omitted from the base material cost by Amphenol in computing the proposed rate. The plant burden rate experienced for the 12 months ended December 31, 1970, including tooling expenses in the adjusted base, was 61.94 percent. Had the Amphenol proposal been based on the more accurate rate, plant burden costs would have been about \$41,300 less than negotiated in the prime contract target price.

General and administrative

Amphenol proposed a 23.1 percent G&A rate based on the experienced costs for the 12 months ended December 31, 1970, or \$331,000 for G&A expenses. The proposed rate was computed on a standard cost of sales base which excluded tooling, material handling, and plant burden costs, as discussed on page 7 of this report. Including these costs in the G&A rate computation resulted in an experienced rate of 17.57 percent for the 12 months ended December 31, 1970.

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Had the more accurate G&A rate been used in the subcontract proposal, the prime contract target price would have been about \$69,700 less than negotiated. About \$55,600 relates to the rate difference and about \$14,100 to overstated material, material handling, and plant burden costs.