Audit Report

OFFICE OF THE INSPECTOR GENERAL

HOTLINE ALLEGATIONS CONCERNING CONTRACT PRICING OF ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILES

Report No. 97-157 June 10, 1997

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Acronyms

AMRAAM	Advanced Medium Range Air-to-Air Missile
DCAA	Defense Contract Audit Agency
FAR	Federal Acquisition Regulation

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June 10, 1997

MEMORANDUM FOR ASSISTANT SECRETARY OF THE AIR FORCE
(FINANCIAL MANAGEMENT AND COMPTROLLER)

SUBJECT: Audit Report on Hotline Allegations Concerning Contract Pricing of Advanced Medium Range Air-to-Air Missiles (Report No. 97-157)

We are providing this report for review and comment. We made the audit in response to Defense Hotline allegations. Comments on a draft report were considered in preparing this report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. Therefore, we request that the Air Force provide additional comments on the recommendations by August 11, 1997.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. Brian M. Flynn, Audit Program Director, at (703) 604-9051 (DSN 664-9051) or Mr. William D. Van Hoose, Audit Project Manager, at (703) 604-9034 (DSN 664-9034). See Appendix F for the report distribution. The audit team members are listed inside the back cover.

David K. Steensma

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Deputy Assistant Inspector General
for Auditing

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Office of the Inspector General

Report No. 97-157 **June 10, 1997**
(Project No. 6AL-8007.00)

Hotline Allegations Concerning Contract Pricing of Advanced Medium Range Air-to-Air Missiles

Executive Summary

Introduction. The audit is a result of Defense Hotline allegations. The Defense Hotline complainant alleged that the Air Force did not negotiate fair and reasonable prices for Advanced Medium Range Air-to-Air Missiles (AMRAAMs). Also, the complainant implied that one of the contractors that produced the missiles may not have submitted current, accurate, and complete cost or pricing data. The Hughes Missile Systems Company and the Raytheon Company produce AMRAAMs. The Defense Contract Audit Agency performed postaward audits of the contracts for the production of AMRAAMs.

The Air Force planned to acquire 11,055 AMRAAMs through FY 2009 at a total cost of $9.5 billion (then-year dollars) in procurement funds, which included $2.9 billion for 3,713 AMRAAMs for FYs 1997 through 2009. Through FY 1996, the Air Force had acquired 7,342 AMRAAMs at prices totaling $6.6 billion.

Audit Objectives. The primary audit objectives were to determine whether the Air Force negotiated fair and reasonable prices for AMRAAMs and whether the contractors provided the Air Force with current, accurate, and complete cost or pricing data. The audit also evaluated the Air Force management control program as applicable to the audit objectives.

Audit Results. We and the Defense Contract Audit Agency substantiated the complainant's two allegations. The Air Force can improve its process for negotiating contract prices for AMRAAMs. The Air Force overpaid the Hughes Missile Systems Company about $41.1 million for manufacturing material, out of a total manufacturing material cost of ********** for 2,343 AMRAAMs from FYs 1991 through 1994.

The Defense Contract Audit Agency's postaward audits of AMRAAM contracts showed that the AMRAAM contractors did not always provide accurate, complete, and current cost or pricing data to the Air Force. As a result, the Defense Contract Audit Agency identified ********** ******* ******* contracts, all of which the Air Force recovered. The Defense Contract Audit Agency identified ********** The ********** is being negotiated.

Recommendations in this report, if implemented, could result in a voluntary refund to the Government from the Hughes Missile Systems Company of $41.1 million for excessive prices. Also, implementation of the recommendations will enable the Air Force to identify any additional overpayments and potentially negotiate lower prices for future contracts for AMRAAMs. See Part I for a discussion of the audit results. See Appendix A for details on the management control program.

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Summary of Recommendations. We recommend requesting a voluntary refund of $41.1 million from the Hughes Missile Systems Company for the excessive prices paid for Lots 5 through 8, reviewing Lots 9 and 10 for additional excess prices, and requesting any appropriate voluntary refund. In addition, we recommend that the Air Force obtain adequate field pricing support and perform adequate analyses for major purchased parts included in the contractors' proposals for future contracts for AMRAAMs. We also recommend that the Air Force hold discussions of prices with the contractors and request the contractors to provide best and final offers in those cases in which the analysis shows that lower prices may be available.

Management Comments. The Director, Air Superiority Weapons, Air Force Program Executive Office for Weapons, nonconcurred with all recommendations. The Director stated that the Air Force does not agree that the Hughes Missile Systems Company charged excessive prices and therefore does not agree in requesting a voluntary refund. He stated that the contract changed numerous times after its award, and the report does not consider the effect that those contract changes had on the cost of material. The Director further stated that the recommendations regarding future negotiation strategies are not applicable to a mature production program that has adequate price competition because adequate price competition means that cost or pricing data are not required. See Part I and Appendix E for a complete discussion of management comments. The full text of management comments is in Part III.

Audit Response. The fact that the Hughes Missile Systems Company charged the Air Force excessive prices for AMRAAMs is well documented in this report. The contract changes had little, if any, effect on our analysis of the proposed and actual unit costs of missile parts. We agree that the Air Force does not have to obtain certified cost or pricing data when the contracting officer determines that adequate price competition exists. However, the Federal Acquisition Regulation does not prohibit the Air Force from obtaining noncertified cost data. Because of the differences that have existed in the past between proposed and actual costs of major purchased parts, the Air Force should ask for cost data on major purchased parts and evaluate those data until the Air Force can document that those cost differences no longer exist. Therefore, to preclude a reoccurrence of the issues documented in this report, the Air Force must obtain cost data for major purchased parts, analyze those cost data, hold discussions with the contractors, and request best and final offers when such cost analysis shows that a more favorable price may be available to the Air Force. We request that the Air Force provide additional comments regarding the recommendations by August 11, 1997.

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Part I - Audit Results

Audit Background

The audit is a result of Defense Hotline allegations that the Air Force Air-to-Air Joint System Program Office did not negotiate fair and reasonable prices for the Advanced Medium Range Air-to-Air Missile (AMRAAM) and that one of the contractors did not submit current, accurate, and complete cost or pricing data. The Navy and the Air Force use the AMRAAM. The Air Force Air-to-Air Joint System Program Office acquires AMRAAMs from the Hughes Missile Systems Company (formerly Hughes Aircraft Company, Missile Systems Group) and the Raytheon Company. All production contract awards have been firm-fixed-price contracts. Through FY 1996, the Air Force had acquired 7,342 AMRAAMs at prices totaling $6.6 billion. Also, from FYs 1997 through 2009, the Air Force plans to acquire an additional 3,713 AMRAAMs. The Air Force estimates that the 3,713 AMRAAMs will cost $2.9 billion.

The Air Force acquired the AMRAAMs in lots of production. Through FY 1996, the Air Force had awarded contracts for AMRAAMs in missile production Lots 1 through 10. Lots 11 through 19 are to provide the AMRAAMs that the Air Force plans to buy from FYs 1997 through 2009.

Audit Objectives

The overall objectives of the audit were to evaluate the effort of the Air Force to negotiate fair and reasonable prices for AMRAAMs and to determine whether the contractors provided the Air Force with accurate, current, and complete cost or pricing data. We also evaluated the adequacy of the management control program related to the functions reviewed. See Appendix A for the coverage of the management control program and the audit scope, methodology, and organizations and individuals visited or contacted.

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Summary of Hotline Allegations and Results

Allegation: The Air Force did not negotiate fair and reasonable prices for AMRAAMS.

Substantiated: The Air Force can improve its process for negotiating fair and reasonable prices for AMRAAMs. The finding in this report addresses the allegation.

Allegation: One of the AMRAAM contractors did not submit current, accurate, and complete cost or pricing data.

Substantiated: The Defense Contract Audit Agency performed postaward audits of the contracts for the production of AMRAAMs. The audits showed that the Hughes Missile Systems Company (Hughes) and the Raytheon Company (Raytheon) did not always provide the Air Force with accurate, complete, and current cost or pricing data, although the dollar value of the discrepant data was not large in comparison to the total contract value. The Defense Contract Audit Agency recommended price reductions ********** ******. The Procurement Contracting Office has recovered the full **********. Additionally, the Defense Contract Audit Agency recommended price reductions of ********** **********. The recommendations with ******** **********. See Appendix B for a summary of the audits.

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Contract Pricing of Advanced Medium Range Air-to-Air Missiles

The Air Force Air-to-Air Joint System Program Office can improve its process for negotiating contract prices for Advanced Medium Range Air-to-Air Missiles (AMRAAMs). Contract negotiations can improve because the Air Force did not obtain adequate field pricing support, perform the cost analyses necessary to establish fully defensible negotiation objectives, hold discussions to negotiate lower prices, or request best and final offers. The Air Force did not obtain the support and perform the analyses because the contractors' proposed prices for AMRAAMs were decreasing, and the Air Force incorrectly assumed that those price decreases indicated that the contractors' proposed prices were fair and reasonable. As a result, the Air Force overpaid about $41.1 million, out of the total manufacturing material costs of ***** ********** for 2,343 AMRAAMs for Lots 5 through 8 from FYs 1991 through 1994. If the Air Force could obtain a voluntary refund, it could put those funds to better use.

Air Force Process for Awarding Contracts for AMRAAMs

Acquisition Strategy. The Air Force established a dual-source acquisition strategy to achieve competition, which should result in lower prices for AMRAAMs. The Air Force told the two contractors that it could divide the annual quantity of AMRAAMs being procured between the two contractors or that it could award the entire quantity to one contractor. Through Lot 10, the Air Force divided the annual procurements of AMRAAMs between the two contractors.

Contracting Process. The Air Force used the negotiation process for awarding firm-fixed-price contracts for the production of AMRAAMs. Specifically, the Air Force requested proposals from the two contractors, obtained field pricing support, analyzed proposed costs, presented the results of the cost analyses to a source selection committee, presented recommendations of the source selection committee to the appropriate approval authority, and awarded the contracts accordingly.

The extent to which the Air Force applied that process varied depending on the lots that it was acquiring. For Lots 1 through 8, the Air Force determined that adequate price competition did not exist. For Lots 9 and 10, the Air Force considered that adequate price competition did exist. The contracting officer's

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determination of adequate price competition meant that the Air Force requested less data from the contractors and that the contractors were not required to certify that the data were accurate, current, and complete.

Review of Proposed Material Costs. Instead of requesting field pricing support from the Defense Contract Audit Agency or the Defense Contract Management Command, the Air Force used the services of a consulting firm, Wallace and Company, for analyzing the material costs that the contractors proposed for Lots 4 through 8. Material costs represented about 56 percent of the total proposed cost of an AMRAAM. Wallace and Company's analyses consisted of comparing the contractors' proposed costs for purchased parts with costs that the contractors proposed for the same parts in their previous proposals. Wallace and Company made the analyses for purchased parts that made up 70 percent of the total material costs. Also, Wallace and Company calculated trends in the contractors' proposed costs that showed that the proposed material costs were declining from lot to lot. For Lots 9 and 10, the Air Force continued using the methodology that Wallace and Company used.

The Air Force did not use the services of Wallace and Company after Lot 8. Air Force officials told us that it did not renew the contract with Wallace and Company because the Air Force no longer required its services. Also, beginning with Lot 9, the Air Force stopped requiring certified cost or pricing data. However, Air Force officials stated that they may require the contractors to include data for the 20 highest-valued purchased parts in their proposals so that Air Force officials could evaluate the contractors' proposed costs for the major items of purchased parts. The Air Force applied the process to both Hughes and Raytheon.

Overall, the analyses that Wallace and Company and the Air Force made generally showed continual decreases in proposed costs for material, as shown in Appendix C.

Also, the overall prices for AMRAAMs had decreased on each lot. As shown in Appendix D, the unit price for the Hughes produced missile declined from ******* million in 1987 to ******** in 1996. The Raytheon produced missile declined in unit price from ******** million in 1987 to ******** in 1996.

The decreases in the proposed material costs and the prices of AMRAAMs contributed to the Air Force decisions to accept the contractors' proposed prices for all contracts awarded from Lots 5 through 10 without discussions or requests for best and final offers.

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Improvements Needed in the Negotiation Process

The Air Force Air-to-Air Joint System Program Office can improve its process for negotiating fair and reasonable prices for AMRAAMs because it did not obtain adequate field pricing support, perform adequate cost analyses, hold discussions to negotiate lower prices, or request best and final offers. The Air Force did not obtain the support and perform the analyses because the contractors' proposed prices for AMRAAMs were decreasing, and the Air Force incorrectly assumed that those price decreases indicated that the contractors' proposed prices were fair and reasonable.

Field Pricing Support. The Air Force did not obtain adequate field pricing support. Specifically, the Air Force did not follow the Air Force Federal Acquisition Regulation (FAR) Supplement in its analyses of the material costs that the contractors proposed. Air Force FAR Supplement 5315.805-5(90), "Field Pricing Support," states:

> When material costs are based on quotes or estimates, the contracting officer should request the auditor or administrative contracting officer (ACO) as appropriate, to verify that decrement factor information is current, accurate, and complete, and also determine if proposed decrement factors reflect specific experience with a vendor or an average decrement for a certain commodity or commodity group.

The contracting officer did not analyze cost decrements between the contractors' proposed costs for material and the contractors' actual costs. Also, the contracting officer did not request the Defense Contract Audit Agency to evaluate the contractors' cost proposals for Lots 5 through 10.

The contracting officer explained that she did not ask the Defense Contract Audit Agency to evaluate the contractors' proposals because Wallace and Company was familiar with the cost elements for the AMRAAM and, therefore, Wallace and Company would be better suited to evaluate the proposed costs.

Based on documentation that the Air Force provided to us, the analysis that Wallace and Company performed only determined that proposed costs for materials were lower than material costs that the contractors proposed previously. Those analyses did not show the differences between what the contractors proposed and what the contractors actually paid and did not determine or verify a decrement factor. Those differences represented potentials for price reductions had the Air Force held discussions with the contractors and asked for best and final offers.

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Cost Analyses. The Air Force did not follow the Air Force FAR Supplement in its analyses of the material costs that the contractors proposed. Air Force FAR Supplement 5315.805-3(90), "Cost Analysis," states:

> Anticipated decrements, or decrement factors, are the historical differences between vendors' and subcontractors' proposed prices and the actual prices negotiated with those vendors and subcontractors, e.g., the historical average decrement for a specific vendor or the average decrement for a certain commodity or commodity group. When performing cost analysis on material costs based on quotes or estimates, the contracting officer should consider anticipated decrements, or decrement factors, that may be achieved by the contractor when the contractor subsequently negotiates the purchase order or subcontract. If a contractor does not include decrement factor information in its initial cost or pricing data submission, the contracting officer should not rely on a subsequent finding of defective pricing but should specifically request decrement factor information to conduct a meaningful analysis.

Hughes' proposal for Lot 6 included a decrement factor, however, that proposal was the only proposal from Hughes that included a decrement factor. Hughes proposed a decrement factor of ***percent. Based on a comparison of proposed and actual costs, we estimated that a decrement factor of **** percent would have been more appropriate. The Air Force did not analyze the **** percent decrement factor that Hughes proposed. Furthermore, the Air Force did not obtain decrement data for any of the other Hughes cost proposals. In addition, the Air Force did not obtain decrement data from Raytheon.

Discussions With Best and Final Offers. The Air Force did not hold discussions with the contractors to negotiate lower prices or request the contractors to provide best and final offers. The Air Force did not hold discussions of prices with the contractors or request best and final offers because it was not aware that lower prices were possible. If the Air Force had obtained adequate field pricing support and performed adequate cost analyses, it would have known that lower prices were possible.

Evaluation of the Air Force Review of Material Costs

We compared the contractors' proposed costs with the contractors' actual costs for 40 of the highest valued parts in Lots 5 through 8. Our comparison of the contractors' proposed costs with their actual costs did not include Lots 9 and 10 because actual cost data were not available at the time that we conducted audit verification work. The differences between proposed and actual costs could continue in Lots 9 and 10. Therefore, the Air Force should make reviews of

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Lots 9 and 10 to determine the differences between proposed and actual costs for major items of purchased parts. If significant differences exist, the Air Force should request voluntary refunds.

Material Costs Proposed for Hughes. While the prices on each lot decreased, the Air Force may have achieved even greater decreases in prices from Hughes through a more thorough analysis of the proposals, discussions with the contractor, and requests for best and final offers. If the Air Force had taken those three actions, it may have reduced the contract prices by as much as $41.6 million. We computed the $41.6 million potential price reduction for Hughes Lots 5 through 8 by comparing the proposed costs of the 40 highest-valued parts in each lot with actual costs of the same part. In each lot, the contractor's proposed material costs were significantly higher than the actual costs to the contractors. Table 1 and Figure 1 summarize the differences between proposed and actual material costs.

Table 1. Differences Between Proposed and Actual Material Costs for Hughes

	Proposed	Actual[1]	Difference
Lot 5[2]	**********	**********	**********
Lot 6[3]	**********	**********	**********
Lot 7[2]	**********	**********	**********
Lot 8[2]	**********	**********	**********
Total	**********	**********	**********

[1]We derived the actual prices from the contractor's cost accounting system.

[2]We based the costs for Lots 5, 7, and 8 on a quantity of 450 AMRAAMs.

[3]We based the costs for Lot 6 on a quantity of 800 AMRAAMs.

Based on the analysis, we concluded that the Air Force would realize potential monetary benefits of $41.1 million ($41.6 million minus $0.5 million in refunds for defective pricing) for various prior year accounts if it successfully pursued a voluntary refund.

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Figure 1. Proposed Versus Actual Material Costs for Hughes

The differences between the proposed material costs and those actually paid by the contractor represent the amount of excessive prices that the Air Force paid and, in turn, contributed somewhat to additional profit to the contractor. We also recognize that the merger of the General Dynamics Missile Division with the Hughes Missile Systems Company, in August 1992, may have also contributed to the additional profit. Table 2 summarizes the differences between proposed and actual profits for Lots 5 and 6.

Table 2. Profit for Hughes

	Percent Proposed	Percent Actual	Percent Complete*
Lot 5	**	**	**
Lot 6	**	**	**

*Lots 7 through 8 were not at a completion stage in which a valid actual profit percentage could be computed.

Material Costs Proposed for Raytheon. We performed a similar analysis for Raytheon. However, significant discrepancies between the proposed and actual costs of material were not evident. Table 3 and Figure 2 summarize the differences between proposed and actual material costs.

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Table 3. Differences Between Proposed and Actual[1] Material Costs for Raytheon

	Proposed	Actual	Differences
Lot 5[2]	**********	**********	**********
Lot 6[3]	**********	**********	**********
Lot 7[2]	**********	**********	**********
Lot 8[2]	**********	**********	**********
Total	**********	**********	**********

[1]We derived the actual prices from the contractor's cost accounting system.

[2]We based the costs for Lots 5, 7, and 8 on a quantity of 450 AMRAAMs.

[3]We based the costs for Lot 6 on a quantity of 800 AMRAAMs.

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Figure 2. Proposed Versus Actual Material Costs for Raytheon

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Table 4 summarizes the differences between proposed and actual profits for Lots 5 and 6.

Table 4. Profit for Raytheon

	Percent Proposed	Percent Actual	Percent Complete
Lot 5	**	**	***
Lot 6	**	**	***

Opportunities to Lower Future Prices

The Air Force could obtain lower prices for AMRAAMs in the future by thoroughly evaluating the contractors' proposals, especially decrement factors. The opportunities for the Air Force to obtain lower prices will occur during the negotiations of prices for Lots 11 through 19 for FYs 1997 through 2009. During that period, the Air Force plans to acquire 3,713 AMRAAMs, estimated to cost $2.9 billion. The fact that the contracting officer determined that price competition was adequate does not preclude the contracting officer from requesting any data from the contractors and performing any analysis deemed necessary.

Summary

By not requesting adequate field pricing support or because of inadequate cost analyses, the Air Force missed opportunities to obtain price reductions that could have totaled $41,593,171. If Wallace and Company or the Government had performed proper cost analyses, the differences would have been apparent and would have spawned discussions and requests for best and final offers, which may have resulted in reduced prices.

To date, the Government has recovered ********** based on Defense Contract Audit Agency recommendations resulting from defective pricing of material. However, that amount does not adequately represent the added cost to the Government because ********** **********, and Wallace and Company, the support contractor, did not adequately assess the proposed costs of material. Therefore, the Air Force should request a voluntary refund of $41,095,150, as shown in Table 5.

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Table 5. Request for Voluntary Refund

Total missed opportunities	$41,593,171
Amount recovered	(498,021)
Total Refund to Request	**$41,095,150**

Management Comments on the Finding

The Director, Air Superiority Weapons, Air Force Program Executive Office for Weapons, commented on the draft report for the System Program Director for the Air-to-Air Joint System Program Office. The Director took exception with various facts and audit conclusions presented in the draft report. We made changes to the report based on the comments where appropriate. The Director's detailed comments and the audit's detailed responses are in Appendix E. The full text of the Director's comments is in Part III.

Recommendations, Management Comments, and Audit Responses

We recommend that the System Program Director for the Air-to-Air Joint System Program Office direct that the Procurement Contracting Officer for the Advanced Medium Range Air-to-Air Missile:

1. Request a voluntary refund from the Hughes Missile Systems Company for $41,095,150, which is the amount that proposed material costs exceeded actual material costs, adjusted by recoveries for defective pricing for Lots 5 through 8.

Management Comments. The Director, Air Superiority Weapons, Air Force Program Executive Office for Weapons, provided comments for the System Program Director for the Air-to-Air Joint System Program Office. The Director nonconcurred with the recommendation because the Air Force did not agree that the contract prices for AMRAAMs were excessive. The Director stated that substantial changes occurred during the performance of the contracts. Therefore, comparison of any original proposal data actual performance data

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must reconcile the numerous changes, including quantity changes, to be valid. The changes included quantity changes for three AMRAAM configurations, configuration changes, and numerous engineering change proposals and value engineering change proposals.

Audit Response. The Director should reconsider his decision to not request a voluntary refund. The fact that Hughes charged the Air Force excessive prices for AMRAAMs is well documented in this report. The prices that the Air Force and Hughes negotiated were partially based on the proposed costs of the major purchased parts of the AMRAAM. This report shows that Hughes generally procured the parts at costs that were less than it proposed. Therefore, the logical conclusion is that if the costs upon which the prices were based were overstated, then the prices were overstated. Our review compared the unit costs that the contractors proposed for major purchased parts with the unit costs that the contractors actually paid for the same parts for the same lots. Therefore, the changes that the Director is referring to would not significantly impact the results of our analysis at the low level of detail that our review covered. The Director refers to ". . . numerous changes including quantity changes. . . ." The fact is that Lots 5 and 6 did not have quantity or mix of models changes. For Lots 7 and 8, the mix of AMRAAM models changed some, but the total quantity procured did not change. For Lot 7, 849 B model AMRAAMs were changed to 826 B models and 23 C models. For Lot 8, the contract was originally for 80 B models and 433 C models and was changed to 82 B models and 431 C models. Those changes will not have an impact on our comparison of proposed and actual unit costs of major purchased parts. We question whether value engineering change proposals would have affected our analysis. However, we request that the Director, in response to this report, provide us details of any case in which a value engineering change proposal resulted in a reduction of the unit cost of a major purchased part between the time that Hughes proposed the unit cost and the last procurement of that part for the lot. The Director's detailed comments for changes from the contractor's proposals to actual contract performance and our detailed responses to those comments are in Appendix E.

2. Review Lots 9 and 10 for both the Hughes Missile Systems Company and the Raytheon Company to determine whether the contractors' proposed costs for major items of purchased parts exceeded the actual costs and request voluntary refunds in those cases in which proposed costs significantly exceeded the actual cost.

Management Comments. The Director nonconcurred, stating that the Air Force performed price analyses of the proposals and awarded the contracts without discussions consistent with FAR guidance.

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Audit Response. We request that the Director reconsider his response and provide comments to the final report. A comparison of the contractors' proposed unit costs for major parts with the costs that the contractors actually paid for the parts could only be beneficial to the Air Force. If the differences between proposed and actual costs are small, such a review will document that the Air Force did a good job of price analysis. If the differences are large, the Air Force can use that information for future contract negotiations. Based on the differences between the proposed and actual costs for Lots 5 through 8, we continue to believe that the Air Force should review the actual costs of major purchased parts for Lots 9 and 10. The information obtained will be needed in the awarding of later contracts for AMRAAMs.

3. Take the following actions in the award of future contracts for the Advanced Medium Range Air-to-Air Missile:

a. Request the contractors to provide cost data for the major items of proposed purchased parts.

b. Analyze, with the assistance of the Defense Contract Audit Agency and the administrative contracting officer, the contractors' proposed material costs, especially decrement factors.

Management Comments. The Director nonconcurred with the recommendation. The Director stated that the recommendations regarding future negotiation strategies are not applicable to a mature production program that has adequate price competition, because adequate price competition means that cost or pricing data are not required. The Director further stated that the submission of unnecessary cost data is in direct conflict with the FAR guidance and would place an additional burden on the contractors, which would translate into higher bid and proposal costs. The Director also stated that in Lot 11, the Air Force, with the concurrence of the Defense Contract Management Command, streamlined the price proposal down by 98 percent. The Air Force eliminated the requirement for submission of cost data for major purchased parts. That initiative as well as other streamlining initiatives reduced bid and proposal costs by 67 and 33 percent for Hughes and Raytheon, respectively. In addition, the Director stated that FAR 15.804-1, "Prohibition on Obtaining Cost or Pricing Data," states that cost or pricing data are not required if the contracting officer determines that agreed-upon prices are based on adequate price competition. Lots 9, 10, and 11 were determined to be awarded under adequate price competition.

Audit Response. We disagree with the Director's position. We agree that certified cost or pricing data should not be obtained when the contracting officer determines that adequate price competition exists. Although the AMRAAM production program is mature, the facts presented in this report necessitate requiring that the contractors provide information to the Air Force to the extent

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necessary to determine the reasonableness of the prices. That procedure is prescribed in the FAR, Section 15.804-5, "Requiring Information Other Than Cost or Pricing Data." Thus, the Air Force can still obtain cost data as needed to ensure that the prices are fair and reasonable. Although the FAR does not require the Air Force to obtain cost data when the contracting officer has determined that adequate price competition exists, the FAR does not prohibit obtaining such data. Because of the differences between proposed and actual costs of major purchased parts that have existed in the past, the Air Force should ask for cost data on major purchased parts and evaluate those data until the Air Force can document that the cost differences no longer exist. We continue to support streamlining; however, streaming should not obviate the Government's need for visibility to obtain the best possible prices. The reduction in bid and proposal costs is good; however, it has no relationship to the Air Force paying unneeded amounts for material. We maintain that this recommendation is valid and request that the Director reconsider his position and provide comments to the final report.

c. Hold discussions of prices with the contractors and request the contractors to provide best and final offers in those cases in which the analysis shows that lower prices may be available to the Air Force.

Management Comments. The Director nonconcurred with the recommendation. The Director stated that award without discussions is consistent with FAR guidance when the award has no outstanding issues. Specifically, FAR 15.6, "Source Selection," and Appendix AA-102, "Objective of the Major Source Selection Process," to the Air Force Federal Acquisition Regulation Supplement, requires that the source selection be conducted in a manner that is the least complex. The Air Force believes that award without discussions is a very powerful tool to minimize proposal costs of the contractor and staffing cost to the Government. In addition, the mere fact of requesting best and final offers does not necessarily translate into more favorable prices for the Government.

Audit Response. We disagree with the Director's position. We agree with the Director that award without discussion is consistent with FAR guidance when the award has no outstanding issues. However, this report documents pricing issues for production Lots 5 through 8. Therefore, to preclude a reoccurrence of the issues documented in this report, the Air Force must obtain cost data for major purchased parts, analyze those cost data, hold discussions with the contractors, and when needed, request best and final offers when such cost analysis shows that a more favorable price may be available to the Air Force. We are not suggesting that the Air Force require cost data for the total contract; we are only recommending that the Air Force obtain cost data for the major purchased parts of the AMRAAM. We agree that the source selection should be conducted in a manner that is the least complex. However, the contracting officer is not relieved of the responsibility to determine that the price is

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reasonable. The prices that Hughes proposed for production Lots 5 through 8 were greater than actual costs. We request that the Director reconsider his position and provide comments to the final report.

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Part II - Additional Information

Appendix A. Scope and Methodology

Scope

We evaluated the Air Force negotiations of contract prices for AMRAAMs. Our evaluation included four contracts that totaled $2.1 billion for AMRAAMs. More specifically, we reviewed the top 40 most costly contractor-purchased parts for production Lots 5 through 8. In doing so, we reviewed the Air Force and Wallace and Company analyses of material costs, compared the Hughes- and Raytheon-proposed material costs to the contractors' actual costs, and reviewed the postaward audit reports on audits that the Defense Contract Audit Agency performed of the contracts for AMRAAMs. Also, we reviewed the management controls as they related to the other audit objectives.

In evaluating the Air Force negotiation process, we determined that actual cost data for cost elements other than material were not readily available from Hughes' accounting system. Because those data were not available from Hughes, we did not attempt to obtain the data from Raytheon. As such, we limited our detailed evaluation to material cost. That limitation had little effect on our efforts to evaluate the Defense Hotline allegations because the allegations dealt only with material costs.

Methodology

Use of Computer-Processed Data. In our review, we used actual material costs that the contractor's computer system generated. We evaluated the accuracy of both contractors' computer-processed cost data by comparing the computer-processed cost data to the original source documentation.

Audit Period and Standards. We performed this financial related audit from January through August 1996. The audit was made in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD.

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Organizations and Individuals Visited or Contacted

Contacts During the Audit. We visited or contacted individuals and organizations within DoD, the Hughes Missile Systems Company, and the Raytheon Company. Further details are available upon request.

Management Control Program

DoD Directive 5010.38, "Internal Management Control Program," April 14, 1987,* requires DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

Scope of Review of Management Control Program. We reviewed the adequacy of the AMRAAM Program Office management controls over the contract award process. Specifically, we reviewed the procurement contracting officer controls over performing material cost analyses. We reviewed management's self-evaluation applicable to those controls.

Adequacy of Management Controls. The AMRAAM Program Office had management controls for the contract award process to ensure that sufficient analyses of proposed material costs were performed. However, the AMRAAM Program Office management did not adequately follow the controls as stated in the Air Force FAR Supplement 5315.805, "Proposal Analysis." Recommendations 1. and 2., if implemented, could result in a potential monetary benefit of more than $41.1 million. Recommendation 3., if implemented, could put the Government in a position to obtain more favorable prices on future AMRAAM missiles. However, we could not determine the amount because the amount depends on the cost of material and quantities procured for each year's lot buy.

Adequacy of the Program Office Self-Evaluation. The AMRAAM program officials identified contracting as part of an assessable unit and, in our opinion, correctly identified the risk associated with contracting as moderate. However, in its evaluation, program office officials did not identify the specific material management control weaknesses identified by the audit because the program office evaluation covered a much broader area than this audit covered.

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*DoD Directive 5010.38 has been revised as "Management Control (MC) Program," August 26, 1996. The audit was performed under the April 1987 version of the directive.

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Appendix B. Summary of Postaward Audits Conducted by the Defense Contract Audit Agency

During the last 5 years, the Defense Contract Audit Agency (DCAA) issued eight reports on postaward audits of contracts that the Air Force awarded to the Hughes Missile Systems Company and the Raytheon Company for AMRAAMs.

Hughes Missile Systems Company

DCAA Report No. 3761-95A42010004, "Report on Postaward Audit of AMRAAM Lot 8 Missile Production Modification No. P00010 to Contract No. F08626-93-C-0007," September 29, 1995, concluded that **********
****

DCAA Report No. 3761-94A42010002, "Report on Postaward Audit of AMRAAM Lot 7 Missile Production Contract No. F08626-93-C-0007," September 29, 1995, concluded that **********
**********.

DCAA Report No. 3771-93H42010001, "Report on Postaward Audit of Cost or Pricing Data Contract No. F08626-91-C-0038, AMRAAM Lot 6 Missile Production," September 30, 1993, states **********
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DCAA Report No. 3771-93H42098006, "Report on Postaward Audit of Cost or Pricing Data Contract No. F08626-91-C-0038, AMRAAM Lot 5 Missile Production," September 27, 1993, states that **********
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Raytheon Company

DCAA Report No. 94L42010002, "Postaward Audit of AMRAAM Lot 7," September 27, 1995, **********
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DCAA Report No. 95L42010008, "Postaward Audit of AMRAAM Lot 8," September 26, 1995, **********
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DCAA Report No. 92L42010002S2, "Postaward Audit of AMRAAM Lot 5," (Supplemental Report) May 8, 1995, states that **********
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DCAA Report No. 93L42010004, "Postaward Audit of AMRAAM Lot 6," December 8, 1994, states that **********
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Appendix C. Decreases or Increases in Proposed Material Costs

	Raytheon (percent)	Hughes (percent)
Lot 4 to Lot 5	******	******
Lot 5 to Lot 6	******	******
Lot 6 to Lot 7	******	******
Lot 7 to Lot 8	******	******
Lot 8 to Lot 9	******	******
Lot 9 to Lot 10	******	******

*Air Force officials informed us that they did not do a detailed analysis of the material cost increase for Lot 10. Based on discussions with the contractor, those officials provided us with their best guess that the increase was because of accounting procedural changes and the implementation of mandatory value engineering change proposals.

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Appendix D. Advanced Medium Range Air-to-Air Missile Quantities and Unit Costs

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Appendix E. Management Comments on the Finding and Audit Responses

The Director, Air Superiority Weapons, Air Force Program Executive Office for Weapons, commented on the draft audit report for the System Program Director for the Air-to-Air Joint System Program Office. The Director took exception with various facts and audit conclusions presented in the draft report. The Director's specific comments and audit responses follow. The full text of the Director's comments is in Part III.

Air Force Comment. The Director stated that the two hotline allegations were not substantiated.

Audit Response. We disagree with the Director's position that the two hotline allegations were not substantiated. The allegation that the Air Force did not negotiate fair and reasonable prices for AMRAAMs is discussed in detail in this report. The allegation that the AMRAAM contractors did not submit current, accurate, and complete cost or pricing data is supported by the Defense Contract Audit Agency (DCAA) **********.

Air Force Comment. The Director stated that the Air Force obtained field pricing support from the offices of the Defense Contract Management Command at both Hughes and Raytheon. Each office sent a senior price analyst to Eglin Air Force Base to assist the source selection team. The price analysts used additional resources from their home offices as well as the offices of the Defense Contract Audit Agency at both Hughes and Raytheon. The Director further stated that a determination of the reasonableness of the contract prices is not conducted at each element of cost such as material. In a firm-fixed-price scenario, the determination is made at the total price, which reflects all elements of cost, not just material.

Audit Response. We disagree with the Director's statements. A cost analyst from the Defense Contract Management Command, Defense Plant Representative Office, Hughes Missile Systems Company, did attend sessions of the Source Selection Committee. The cost analyst told the auditors that he was requested to participate for the purpose of providing information regarding Hughes indirect cost rates and general and administrative cost rates and the method that Hughes used to present the cost or pricing data in its proposals. He stated that he was not requested to and did not participate in any analysis of the material costs that Hughes proposed. Also, the cost analyst denied that he used additional resources from his "home office" and the Defense Contract Audit Agency, Hughes Missile Systems Company, Resident Office.

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We agree that the final determination of price is at the total price level and not individual cost elements; however, analyses of individual elements of proposed costs should contribute to the determination of a final price. We also disagree with the Director's position that a determination of the reasonableness of the contract prices should not be conducted for each element of cost, such as material. For Lots 5 through 8, before the contracting officer's determination that adequate price competition existed, cost or pricing data were required. The FAR, Section 15.805-1 (b), states that "When cost or pricing data are required, the contracting officer shall make a cost analysis to evaluate the reasonableness of individual cost elements." The FAR does not require a cost analysis to evaluate the reasonableness of individual cost elements when the contracting officer has determined that adequate price competition exists, which was the case for production lots after Lot 8. However, the FAR does not prohibit such an analysis. Because of the conditions in our audit report, the Air Force should determine the reasonableness of major items of material costs proposed.

Air Force Comment. The Director stated that the Air Force also used the services of a consulting firm, Wallace and Company, to analyze both material and labor costs. The consulting firm performed one of the most extensive analysis efforts ever applied to a DoD program. The analysis consisted of maintaining a detailed data base of thousands of components. The data base included the contractors' proposed and actual costs for the components. The data base allowed the Air Force to compare proposed material prices with actual prices for the previous lots in making its pricing decisions.

Audit Response. We disagree with the Director's position that the Air Force obtained adequate pricing support from Wallace and Company. An Air Force official told us that Wallace and Company provided only one document to the Air Force regarding Wallace and Company's analysis of proposed material costs. That document was a one-page schedule, for each lot, that compared the contractors' proposed costs for major purchased parts for the lots being analyzed with the contractors' proposed costs for the same parts for the previous lot. The Air Force did not provide us any documents that showed a comparison of the contractor's proposed material costs with the contractor's actual material costs for the same lot. We are aware that Wallace and Company maintained a data base of proposed and actual costs for materials. We attempted to verify the proposed costs shown on the schedule that Wallace and Company prepared to the data base that Wallace and Company established. We were unable to trace the proposed costs of the parts from the schedule to the data base. Also, no one maintained the data base after the Air Force terminated its contract with Wallace and Company in 1994. Therefore, we visited Hughes and Raytheon to obtain proposed and actual cost data for our comparison.

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Air Force Comment. The Director stated that the audit incorrectly assumed that decrement factors were not included in the contractors proposals. The Director further stated that reports of postaward audits that DCAA conducted did not allege that decrement factors were defective.

Audit Response. Although no DCAA final audit reports state that ****** ********** DCAA stated in a draft report that ********** DCAA Draft Results of Postaward Audit No. 3761-94A42010002, Contract No. F08626-93-C-0007, "AMRAAM Lot VII Missile Production," July 18, 1995, states that:

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In its response to the draft audit report on the results of the post-award audit, the Program Office did not specifically address the allegation that Hughes failed to give subcontractor decrement factors. Instead, the Air Force disagreed with the DCAA finding because the DCAA analysis was done on a different quantity of missiles than was used for the bill-of-material. The issue of quantities of missiles does not bear on the issue of decrement factors. DCAA officials told us that a final audit report did not include the matter because the contracting officer did not rely on the cost or pricing data in agreeing on a price, and therefore, defective pricing was not an issue.

Air Force Comment. The Director stated that the Air Force data base contained actual purchase order costs from prior lot purchases. Those data were used to perform the cost analysis, and the Air Force did not keep the working papers supporting the specific cost analysis. The Director further stated that the audit description of the Wallace and Company analysis failed to address the comparison of actuals to date, including value engineering submittals and quantity offsets for variable rate quantities.

Audit Response. An Air Force official told us that the only document that Wallace and Company provided in support of the analysis of material costs for the source selection was a one-page document. The document showed a comparison of the contractors' proposed costs for specific parts with the costs proposed for the same part for the previous production lot.

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Air Force Comment. The Director stated that the requests for proposal for Lots 5 through 8 required the offerers to give decrement factors for all material and subcontractor costs, and the proposals would contain decrement factors.

Audit Response. During our audit, we determined that the contractors submitted decrement factors for only Lot 6, not Lots 5, 7, and 8 as the Director stated.

Air Force Comment. The Director stated that the audit analysis was not valid because the analysis compared proposed material costs at one quantity with actual material cost at a different quantity.

Audit Response. We disagree. Our analysis of material costs was adjusted for the differences between proposed quantities and purchased quantities of AMRAAMs. Additionally, we obtained the proposed and actual costs from the contractors and the applicable offices of the Defense Contract Management Command. Moreover, contractor officials and Defense Contract Management Command officials reviewed our analyses for the accuracy of the data.

Air Force Comment. The Director comments included a table that showed that Hughes' actual costs of materials for Lots 5, 6, 7, and 8 exceeded Hughes' planned costs by $44.7 million. The Director used the Functional Cost Hour Reports to prepare the table. The planned material costs were taken from Hughes' initial report for each lot that showed Hughes' anticipated cost based on actual award quantity and price. The actual material costs were taken from the last report for each lot, which contained actual costs up to that point in time with estimated costs to completion. See Part III of this report for the table.

Audit Response. The Director's schedule does not compare proposed material cost with actual material costs as we did in this report. The costs under the caption "Planned" is planned costs, not proposed costs. The contractor prepared its Functional Cost Hour Reports after the contracts were signed. Therefore, at the time the contractor prepared the reports, it may have completed negotiations with its suppliers and may have known the actual costs of the parts. In regard to the costs under the caption "Actual," the costs are not actual but include estimates of costs that the contractor had not incurred. Those estimates of costs to be incurred were ********** **********Lots 5, 6, 7, and 8, respectively. Also, the "Actual" costs included costs related to unplanned procurements of material for tooling and engineering, which were not included in the "Planned" costs. Our review was limited to the cost of material for manufacturing. Therefore, the Director's comparison does not counteract our analysis in this report.

Air Force Comment. The Director stated that the differences between planned and actual material cost for Hughes resulted from contract changes regarding the

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quantities of each model of AMRAAM that was being procured. The three models of the AMRAAM were the A model, the B model, and the C model.

Audit Response. The Director comments seem to want to lead the reader to believe that during the production of Lots 5, 6, 7, and 8, numerous and significant changes occurred in the mix of AMRAAMs models A, B, and C. As discussed below, those changes were not significant.

o The contract for Lot 5 was originally for 540 A models and was not changed.

o The contract for Lot 6 was originally for 240 A models and 201 B models and was not changed.

o The contract for Lot 7 was originally for 849 B models and was changed to 826 B models and 23 C models.

o The contract for Lot 8 was originally for 80 B models and 433 C models and was changed to 82 B models and 431 C models.

Air Force Comment. The Director stated that comparisons of the original proposal data with the actual performance data must reconcile baseline changes resulting from value engineering change proposals. The value engineering changes impacted either the list of suppliers or a specific supplier's price and resulted in reduced prices to the Government.

Audit Response. We question whether value engineering changes would affect our analyses because we compared Hughes' proposed unit costs with Hughes' actual unit cost for the same parts for each lot. If a value engineering change proposal resulted in a change to a part, the part number of that part would change and the part would not have been included in our comparison. We request that the Director, in his response to this report, provide us details of any case in which a value engineering change resulted in a reduction of the unit cost of a major purchased part between the time that Hughes proposed the unit cost and the last procurement of that part for the lot.

Air Force Comment. The Director stated that the auditors' claim that defective material pricing led to additional profits for Hughes is not substantiated in this report. The Director further stated that, during the period covered by the audit, Hughes merged with General Dynamics. The merger provided an opportunity to leverage both overheads and material procurements and meld the best practices of Hughes and General Dynamics.

Audit Response. The audit report did not state that the differences between the contractor's proposed material costs and actual material costs met the criteria for defective pricing. Also, as the report states, the differences between the

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contractor's proposed costs for the parts and the actual cost of parts did not solely account for the contractor's additional profits. In addition, we revised the report to recognize that the merger of General Dynamics Missile Division and Hughes Missile Systems Company could have effected the amount of profit.

Air Force Comment. The Director stated that the Air Force awarded fees for value engineering changes, performance incentives, and licenses over and above the fees associated with the normal production contract. The fees amounted to ********** for the contracts for Lots 5, 6, 7 and 8. When removing the fees, the average profit for Hughes for Lots 5 through 8 from the basic missile production is approximately **********.

The Director included a schedule with his comments that showed his computation of the fees for Lots 5, 6, 7, and 8, after adjustments for the fees related to value engineering changes, performance incentives, and license fees. At specific points in time, for each lot, the Director calculated the fee as follows: contract price minus cost minus fee adjustment equals fee. See Part III of this report for the schedule.

Audit Response. The Director's data for Lots 5 and 6 were as of June 1994. The profit percentages shown in this report are as of January 1996. For Lot 5, the Director's analysis showed cost of ********** taken from the Functional Cost Hour Report, September 23, 1994. Our review of this report showed actual costs of ********** with an estimate-to-complete cost of ********** for a total estimate-at-completion of **********. The estimate-to-complete cost is the estimate of the amount of cost that will be incurred to complete the production lot. Therefore, the actual cost incurred plus the estimate-to-complete cost equals the estimate-at-completion, or total cost of the lot. Hughes provided us data that showed actual cost of ********** with an estimate-to-complete cost of ********** for a total estimate-at-completion of ********** as of January 1996. Hughes' estimate-to-complete cost as of September 23, 1994, was overstated, resulting in the percentage of profit in the Director's analysis being understated. Also, the Director's calculation of fee for Lot 5 is erroneous;********** For Lot 6, the Director's analysis showed a cost of ********** taken from the Functional Cost Hour Report, August 26, 1994. Our review of the report showed an actual cost of ********** with an estimate-to-complete cost of ********** for a total estimate-at-completion of ********** Hughes provided us data that showed actual cost of ********** with an estimate-to-complete cost of ********** for an estimate-at-completion of **********as of January 1996. Hughes' estimate-to-complete cost as of August 26, 1994, was overstated, resulting in the understatement of the percentage of profit in the Director's analysis.

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Air Force Comment. The Director stated that the audit incorrectly assumed that a negotiated procurement and discussions with best and final offers will result in a reduced price, as opposed to a contract award without discussions. The Air Force believes that an award-without-discussion forces the contractor to put his best price forward in the original price submittal. The Director also stated that awarding contracts without discussions has been widely accepted as a practice to minimize proposal costs for the contractor and staffing and cost to the Government.

Audit Response. We did not assume that discussions with a best and final offer will always result in reduced prices. Our position regarding the Air Force negotiations of prices for Lots 5 through 8 was that Hughes' proposed costs for major purchased parts were overstated. A more in-depth analysis of Hughes's proposed cost for major purchased parts would have shown the overstatements, and discussion of the overstated costs with Hughes could have resulted in reduced prices.

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Appendix F. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
  Director, Defense Procurement
  Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
  Deputy Chief Financial Officer
  Deputy Comptroller (Program/Budget)

Department of the Army

Auditor General, Department of the Army

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Auditor General, Department of the Navy

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
  Program Executive Officer for Weapons
    System Program Director for the Air-to-Air Joint System Program Office
Auditor General, Department of the Air Force

Other Defense Organizations

Director, Defense Contract Audit Agency
  Resident Auditor, Hughes Missile Systems Company, Resident Office
  Resident Auditor, Raytheon Company, Resident Office

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Other Defense Organizations (cont'd)

Director, Defense Logistics Agency
  Commander, Defense Contract Management Command
  Chief, Defense Plant Representative Office Hughes Missile Systems Company
  Chief, Defense Plant Representative Office Raytheon Company
Director, National Security Agency
  Inspector General, National Security Agency
Inspector General, Defense Intelligence Agency

Non-Defense Federal Organizations and Individuals

Office of Management and Budget
Technical Information Center, National Security and International Affairs Division, General Accounting Office

Chairman and ranking minority member of each of the following congressional committees and subcommittees:

  Senate Committee on Appropriations
  Senate Subcommittee on Defense, Committee on Appropriations
  Senate Committee on Armed Services
  Senate Committee on Governmental Affairs
  House Committee on Appropriations
  House Subcommittee on National Security, Committee on Appropriations
  House Committee on Government Reform and Oversight
  House Subcommittee on Government Management, Information and Technology, Committee on Government Reform and Oversight
  House Subcommittee on National Security, International Affairs, and Criminal Justice, Committee on Government Reform and Oversight
  House Committee on National Security

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Part III - Management Comments

Department of the Air Force Comments

DEPARTMENT OF THE AIR FORCE
AIR FORCE PROGRAM EXECUTIVE OFFICE
WASHINGTON, DC 20330-1000

12 Feb 97

MEMORANDUM FOR OFFICE OF ASSISTANT INSPECTOR GENERAL
DEPARTMENT OF DEFENSE, AUDITING

FROM: AFPEO/WP

SUBJECT: DOD IG Draft Audit Report, Hotline Allegations Concerning Contract Pricing of Advanced Medium Range Air-to-Air Missile (AMRAAM), Project No. 6AL-8007,12 Dec 96.

The referenced DOD IG Draft Report has been reviewed by my office and the AMRAAM Joint System Program Office, Eglin AFB Fl, with the attached comments submitted for your consideration. If you have any questions, please contact me (703) 695-9374.

JOSEPH M PANETTA JR, Major, USAF
Director, Air Superiority Weapons
Air Force Program Executive Office
for Weapons

Attachment
Comments to DOD IG Draft Report

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Final Report Reference

Executive Summary

2. **Introduction.** Noted. The Air Force plan in the FY97 President's Budget (PB) is to acquire 11,019 AMRAAMs including 8600 Air Force and 2419 Navy Missiles. The number of U.S. missiles to be procured from FYs 1997 through 2009 is 3,713 for a cost of $2.9 billion vice 1,179 AMRAAMs as indicated in the report. Through FY 1996, the Air Force JSPO procured 9,300 AMRAAMs, however, 1,972 were for FMS countries. The $6.6 billion applies to the 7,342 U.S. missile procurement including 36 Seek Eagle missiles which are not included in the final procurement objective of 11,019. Revised

3. **Audit Objectives.** Noted.

4. **Audit Results.** Non-concur with findings. The Air Force does not believe that the two allegations have been substantiated. The auditors made incorrect assumptions and apparently did not understand the method used by the Air Force to perform the price analysis. In addition, all annual buys have been subjected to post-award audits. These audit reports indicated minimal findings (compared to the total dollars awarded).

5. **Summary Recommendations.** Non-concur with the recommendations. The Air Force does not agree that Hughes Missile Systems Company charged excessive prices and therefore does not agree in requesting a voluntary refund. The recommendations regarding future negotiation strategies are not applicable to a mature production program subject to adequate price competition. Award without discussion is consistent with FAR guidance when there are no outstanding issues. Specifically, FAR 15.6 and Appendix AA102 require that the source selection be conducted in a manner that is the least complex. In this respect, the JSPO has fully complied while protecting the Government's best interest.

6. **Management Comments.** Noted.

PART I AUDIT RESULTS

1. **Audit Background.** Noted. The Raytheon Company has been producing missiles since 1987 vice the 1989 in the report. The total U.S. missiles procured through FY 1996 is 7,342 at prices totaling $6.6 billion vice the 9,300 in the report. The additional 1,972 missiles procured were for FMS countries and are not included in the dollar values. The Air Force FY97PB plan is to procure an additional 3,713 U.S. missiles from FYs 1997 through 2007 estimated to cost $2.9 billion. Revised

2. **Audit Objectives.** Noted.

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3. **Summary of Hotline Allegations and Results**. Non-concur. The Air Force does not believe the allegations have been substantiated. The Air Force method of conducting source selections is consistent with FAR guidance. DCMC post-award audits reported minimal findings compared to the total dollars awarded.

4. **Contract Pricing of Advanced Medium Range Air-to-Air Missiles**. Non-concur. The Air Force obtained field pricing support through both the Hughes and Raytheon DCMC offices. In fact, each office sent a senior price analyst to Eglin AFB to personally assist the source selection team. The DCMC price analyst then used additional resources from the "home office" as well as the respective DCAA office, as needed. These resources were used, as appropriate, in conducting the cost and price analysis of the proposals. A determination of the reasonableness of the contract prices is not conducted at each element of cost, such as material. In a firm-fixed-price scenario, the determination is made at the total price. This total price reflects all elements of cost, not just material. Copies of the price negotiation memorandums have been provided to the auditor to illustrate this concept.

Air Force Process for Awarding Contracts for AMRAAMs

5. **Acquisition Strategy**. Noted.

6. **Contracting Process**. Noted.

7. **Review of Proposed Material Costs**. Non-Concur. As indicated in paragraph 4 above the Air Force did receive field pricing support. To provide additional support to this effort, the Air Force used the services of a consulting firm, Wallace and Company, to analyze both material and labor costs. The Wallace and Company effort was one of the most extensive analysis efforts applied to a DoD program. It consisted of maintaining a detailed data base of thousands of components and assemblies. This data base began with the proposed bill of materials for each lot buy at the awarded quantities. These were then updated with costs from actual purchase orders within a year of the contract award. This data base was developed for Lots 1 through 8. The source selection pricing analysis was then able to compare material prices against "actuals" for all the previous lots. These experienced industrial engineers were able to analyze quantity/rate impacts, material decrements, and value engineering submittals. The government analysis addressed roughly 80% of the material information. This detailed data base and Wallace analysis was used by the source selection pricing analysts in forming the final recommendations.

8. **Improvements Needed in the Negotiation Process**. Non-concur. The Air Force did receive adequate field pricing support from the DCMC offices at both contractor locations. Adequate cost analyses were performed and included analysis of roughly 80% of the material information with prior actuals. Contracts were awarded without discussions as a result of the detailed analyses and resulting recommendations.

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9. **Field Pricing Support.** Non-concur. The Air Force obtained field pricing support through both the Hughes and Raytheon DCMC offices. In fact, each office sent a senior price analyst to Eglin AFB to personally assist the source selection team. The DCMC price analyst then utilized additional resources from the "home office" as well as the respective DCAA office, as needed. These resources were utilized, as appropriate, in conducting the cost and price analysis of the proposals.

The auditors incorrectly assumed that decrement factors were not included in the contractors' proposals. This information was contained in the proposals and verified using the data base compiled by the AMRAAM JSPO. Additionally, specific material costs identified in the competitive proposals, including decrement factors, are verified during the subsequent review of the value engineering projects. While the AFFAR guidance instructs the Contracting Officer to not defer cost analysis of decrement factors costs identified in the competitive proposals, including decrement factors, are verified during the subsequent review of the value engineering projects. While the AFFAR guidance instructs the Contracting Officer to not defer cost analysis of decrement factors to a post-award audit, these factors are nonetheless subject to post-award reviews. All the annual buys awards have been subjected to a post-award audit. The finding contained in Appendix B of the audit report indicate that results of post-award audit reports were minimal (compared to the total dollars awarded) and none alleged the decrement factors as defective.

The AMRAAM JSPO data base supported by the Wallace and Company contained actual purchase order costs from prior lot buys. These were used to perform the cost analysis. The details and working papers supporting the specific cost analysis were not maintained in our official files, therefore the auditor assumes they never existed. The auditor's description of the Wallace and Company analysis fails to address the comparison of actuals to date, including Value Engineering submittals, and quantity offsets for variable rate quantities.

The AMRAAM JSPO finance office has the original Wallace electronic data base of purchase order actuals and uses this for continuing analyses of Value Engineering submittals.

10. **Cost Analyses.** Non-Concur. Both the AMRAAM production Lot 5/6 and 7/8 Request For Proposals contained language requesting material decrement factor information. Proposal instructions for Lots 5 through 8 specifically required the offerors to include decrement factors for all materials and subcontractors. Submitted decrement factors represented historical percentage differences between vendors/subcontractors proposed prices and the actual prices negotiated with the vendors/subcontractors. As stated above, the decrement factors were verified using the AMRAAM JSPO data base.

11. **Audit of the Air Force Review of Material Costs.** Noted.

12. **Material Costs Proposed for Hughes.** Non-Concur. The report indicates that the auditors do not understand the difference between the proposed material costs and actual material costs as presented in the audit report. The contractors' proposals contained detailed costs at a specific quantity and then provided bottom line costs for a large range

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of quantities. The contractor did not purchase material at the detailed proposal quantity but at the awarded quantity. Therefore, there is no proposed line by line material cost at the awarded quantity to compare to an actual price. The auditors analysis that compares proposed material cost at one quantity to the actual material cost at a different quantity is not valid.

The AMRAAM JSPO reconstructed this comparison using cost data at the same quantities. The method used was to compare the Functional Cost Hour Reports (FCHR), which were cost analysis deliverables on the contract. The initial FCHR for each lot contains the contractors anticipated cost based on the actual award quantity and price. This was compared with the last FCHR for each lot which contains actuals up to that point in time. The results of this comparison is shown below.

Differences Between Planned and Actual Material Cost for Hughes

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There is a multiplicity of factors which explain these differences. During performance of the contracts included in the audit report, the AIM-120A, AIM-120B, and AIM-120C have all been produced. There are cost differences between these configurations and their components. The RFPs and proposals, however, only dealt with the mix at the time they were prepared. The flexible quantity nature of these procurements was further influenced by the inclusion of a flexible mix of 'A, 'B and 'C missiles. After contract award, this

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-mix changed via contract modifications with different configurations being built in the same lot.

In addition to the configuration changes, numerous ECPs and VECPs were incorporated into the missile in each of the lots during the period identified. As an indicator of the magnitude of these activities, it should be noted that HMSC was lauded by the DoD for "Outstanding Value Engineering Achievement" in 1991 and again in 1993. Most of these changes impact either the vendor list, or a specific vendor's cost/price. These changes have resulted in reduced prices to the government via contract adjustments.

Comparison of any original proposal data to actual performance data must reconcile these baseline changes in order to be valid.

The auditor's claim that defective material pricing led to additional profit to the contractor is not substantiated by the information presented in the audit. During the period cited by the audit, HMSC underwent significant changes. Foremost, was the combination with the General Dynamics Missile Division. Their merger provided a significant opportunity to leverage both overheads and material procurement. With the melding of HMSC and GD personnel, the best practices of both companies emerged. In addition, the government awarded additional fees for several VECPs, performance incentives and license fees over and above the fees associated with the normal production contract. These fees amounted to ———— for the Lots 5, 6, 7 and 8 contracts. When removing these fees, the average profit for Hughes for Lots 5 through 8 from the basic missile production is approximately ———. The detailed comparison is shown as follows:

Revised

Comparison of Cost and Price with Fee Adjustments

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13. **Material Costs Proposed for Raytheon.** Noted.

14. **Opportunities to Lower Future Prices.** Non-Concur. The auditor incorrectly assumes that a negotiated procurement (discussions with BAFOs) will result in a reduced price as compared to "award without discussions". We believe that the benefits of competition, particularly on an award-without-discussions basis, forces the contractor to put his best price forward in the original submittal. Actual experience of negotiated procurements prior to Lot 5 involved arduous, time-consuming negotiations (often extending from 9 months to 1 year) to settle at a price very near the original proposed cost. Award without discussions has been widely accepted as a practice to minimize proposal costs for the contractor and manpower and cost to the Government. It is irrefutable that missile unit prices were reduced 56% during this period. The auditor provides no rationale to support that a negotiated scenario would have had better results.

15. **Summary.** Non-concur. The Air Force performed adequate cost and price analysis on the subject procurements and the Air Force assessment is that the contractor understated material costs. DCAA post-award analyses have identified minimal findings which have and/or are being negotiated with both contractors. The Air Force should not request any voluntary refund.

16. **Recommendations for Corrective Actions.** Non-concur.

1) Non-Concur. The Air Force does not agree that "excessive pricing" occurred on these contracts. Substantial changes occurred from the original proposals to the actual awards and finally to the actual conduct of the production contracts. Comparison of any original proposal data to actual performance data must reconcile the numerous changes including quantity changes in order to be valid.

2) Non-Concur. The Air Force performed a price analyses of the proposals and awarded these contracts without discussions consistent with FAR guidance.

3a) Non-Concur. The submission of unnecessary cost data is in direct conflict with the FAR guidance and would place an additional burden on the contractor which would translate into higher bid and proposal costs. In Lot 11, the Air Force with the concurrence of both DCMCs, streamlined the cost/price proposal down by 98%; eliminating the cost data for piece parts/component parts. This factor as well as other streamlining initiatives cut 67% and 33% of the bid and proposal costs out of the Hughes and Raytheon proposals, respectively . The FAR clearly states in 15.804-1 that cost and pricing data is not required if the contracting officer determines that prices agreed upon are based on adequate price competition. Lots 9, 10, and 11 all have been determined to be awarded under adequate price competition.

3b) Non-Concur. As stated above, no certified cost and pricing data has been required on these contracts.

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3c) Non-Concur. Award without discussions is consistent with FAR guidance when there are no outstanding issues. Specifically, FAR 15.6 and Appendix AA 102 require that the source selection be conducted in a manner that is the least complex. The Air Force believes that award without discussions is a very powerful tool to minimize proposal costs for the contractor and manpower cost to the Government. In addition, the mere fact of requesting best and final offers does not necessarily translate into more favorable prices for the Government. For example, the JSPO held a source selection for missile rail launchers in June 1994. When BAFOs were received from the three offerors in the competitive range, two increased their prices and one stayed the same. Furthermore, the contractors for the lot buys know that we intend to award without discussions and come prepared to provide the best number with their original proposals. This saves time and money for both the contractors as well as the Government.

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