

New Focus on Cost/Price Analysis NCMA Seminar

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LTJG Michael Chalfant in Malaysia

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Video

- Robert Gates on Cost Cutting

Seminar Objectives

The Prime Contractor's role as a Buyer of goods or services:

Part I - Price Analysis Techniques

Break – NCMA business meeting

Part II – Cost Analysis Techniques

Goal: Provide guidance on how to document “fair and reasonable” prices and cost elements.

Part I – Price Analysis

- Definitions
- Applicability
- Responsibility
- Price Analysis Techniques
- Single/Sole Source Procurements



Definitions

- **Price Analysis:** The process of examining and evaluating a proposed price without evaluating its separate cost elements or proposed profit.
- **Cost Analysis:** The process of evaluating proposed separate cost elements and profit.
- **Certified Cost or Pricing Data:** See Part 2
- **Fair and Reasonable:** Not Defined in FAR
- **Negotiation:** The process of trying to define fair and reasonable.

Applicability

- Price Analysis applies to ALL procurements:
 - **Less than \$3,000**
 - Verification of Price reasonableness usually not required (FAR 13.202)
 - **Over \$30,000**
 - Written Solicitation required (FAR 13.106)
 - **Over \$700K**
 - Cost Analysis may be required (FAR 15.403)

Price Analysis Techniques

Ref. FAR 15.404-1

- 1. Adequate Price Competition
- 2. Historical Prices
- 3. Parametric Estimates
- 4. Catalog Price Lists
- 5. Independent Estimates
- 6. Market Research
- 7. Pricing Information

#1 Adequate Price Competition

must meet 7 requirements: (FAR15.403-1)

- Two or More firms submit priced offers
- Are Responsible offerors
- Compete Independently
- Satisfy the Requirement
- Awarded based on Best Value
- Where Price is a substantial factor
- No finding of Price being Unreasonable
- OR,

Adequate Price Competition (Cont.)

- Only One firm submits a priced offer, and a
- Reasonable Expectation of competition,
 - Based on Market Research,
 - That Two or more Responsible offerors,
 - Competing Independently,
 - Would Satisfy the Requirement, and
 - The offer was submitted expecting competition,
 - At Least One other offeror was capable, and
 - No reason to believe no competition, and
 - Approved at a level above the CO.

Changes To Competition

- Multiple Award ID/IQ contracts with On-Ramp provisions
- Three Year Limit on Single Award contracts
- Certified Cost and Pricing Data on One Bid contracts
- Non-Certified Cost and Pricing Data on Commercial Items
 - Source: Ashton Carter letter dated 14 Sep 2010

Exercise 1

Competition Case Studies

- Navy DDG-51 Destroyers
- Navy Littoral Combat Ship (LCS)
- USAF Design & Engineering Support

#2 Historical Prices

must meet 3 requirements:

- Validation
 - Previously determined to be fair and reasonable
- Quantity
 - Comparable quantities or Learning curves
- Inflation
 - Recent prices – within the last 12 months
 - Inflation adjustments to non-recent prices

Historical Prices

- Contract history:

<u>Date:</u>	<u>Qty:</u>	<u>Price:</u>
– Nov 2009	25	\$872.00
– Jul 2008	15	\$807.00
– Apr 2007	90	\$400.00
– Sep 2006	20	\$670.00
– Oct 2005	36	\$726.00

Exercise 2

Historical Pricing

- Using the Contract History, perform a Price Analysis on a current proposal for Impeller, Fan, Axial:
 - Quantity of 30 at \$900.00 each.
 - Assume 3% Inflation per year

Exercise 2

Historical Pricing

Recommended Price for 30 units:

- Using the latest history of \$872.00 each
 - Escalate for 1 year at 3% per year.
 - Recommended Price is \$898.00 each.

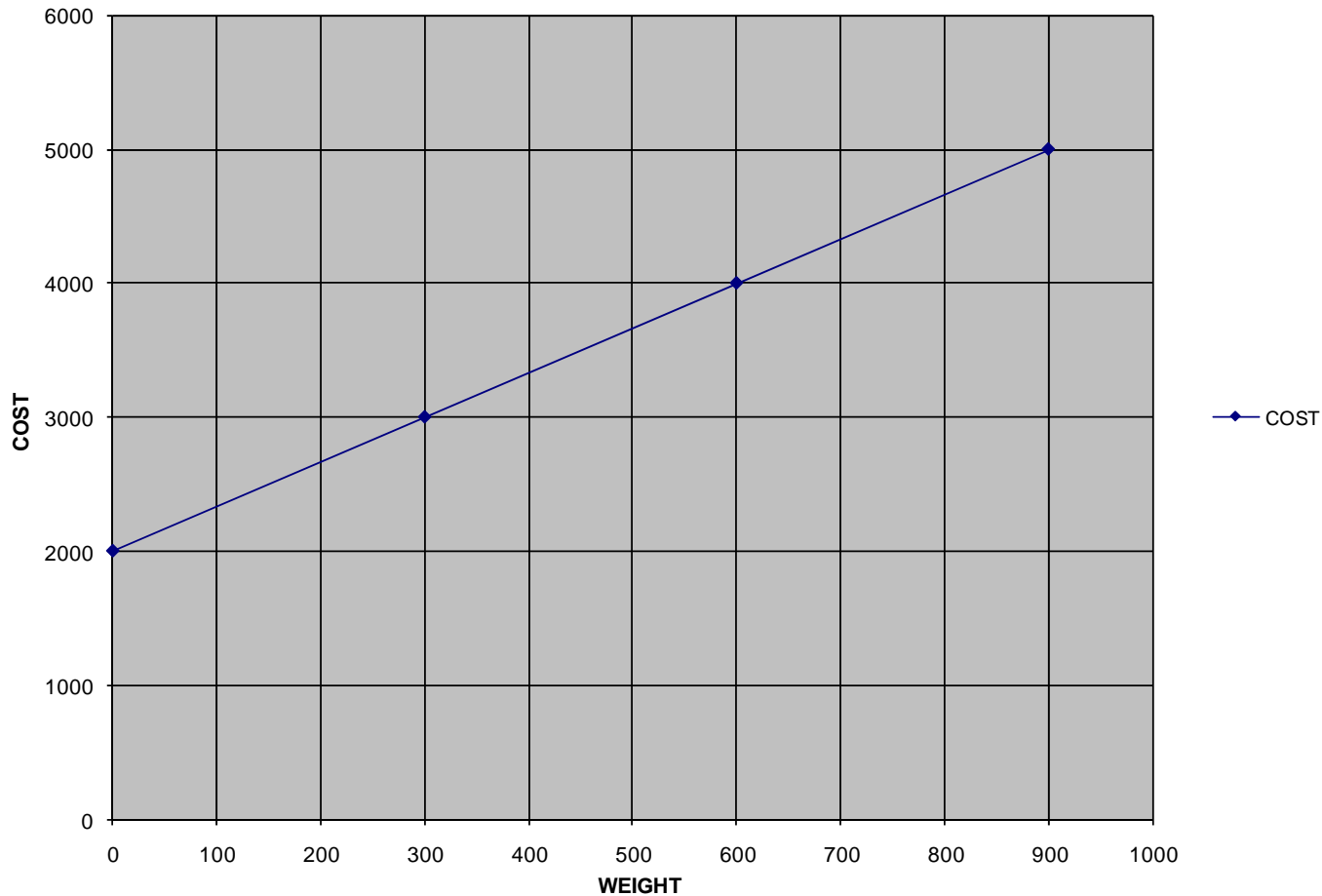
#3 Parametric Estimates

- Parametric Models
- Rough Yardsticks
- Cost Estimating Relationships
- Economic Census Data
 - By NAICS Code
 - Relationships by industry

PARAMETRIC ANALYSIS EXAMPLE

DERIVATION OF PARAMETRIC RELATIONSHIPS USING HISTORICAL DATA OF COST VS WEIGHT

COST VS. WEIGHT



PARAMETRIC ANALYSIS

EXAMPLE

- LINEAR, ONE INDEPENDENT VARIABLE
- WEIGHT X COST Y
- 0 lb \$2,000
- 300 lb \$3,000
- 600 lb \$4,000
- 900 lb \$5,000
- Step 1: Plot Line
- Step 2: Get Slope (M) of Line
- $(M) = Y_2 - Y_1 / X_2 - X_1 = 5 - 2 / 9 - 0 = 3/9$
- EQUATION: $Y = MX + B$
- Step 3: Substitute values of any point on line and M, Solve for B
- For point 6,4 $Y = MX + B$, $B = 2$
- Parametric is $Y = 3/9X + 2$
- For 500 lb $Y = 3/9(5) + 2$ or \$3,670

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#4 Catalog Prices

- Competitive Published Price Lists
 - Application
 - Items published in a catalog, price list, internet site, etc.
 - Verification
 - Over \$700K additional information should be obtained
 - Negotiation
 - Always negotiate discounts from catalog prices

Catalog Prices (Cont.)

- Published Market Prices
 - Application
 - Published prices – established by a formal market
 - Verification
 - Over \$700k – Obtain sales data
 - Negotiation
 - Always
 - Based-on Catalog or Market Price
 - Modifications

Case Study: Contractor X

- Sole Source supplier X
- Commercial Items per FAR 12
- Prices were 20% lower than Catalog
- But, 280% higher than historical prices
- The IG determined the prices Not to be fair and reasonable.
- Supplier was Not willing to re-negotiate

#5 Independent Cost Estimates

- Estimate major cost elements
 - Material
 - Purchased parts, subcontracts, ODCs, etc.
 - Labor Hours
 - Technical evaluation by technical rep
 - Wrap Rates
 - Direct Labor Rates - Use Salary Survey
 - Indirect Rates – Use Industry Averages

Independent Cost Estimates

SALARY SURVEY DATA

Aerospace Engineer III	25th%	Median	75th%
San Diego, CA	\$68,813	\$74,909	\$83,424

Use the Median annual salary of \$74,909 divided by 2,080 hours per year is equal to \$36.01 per hour

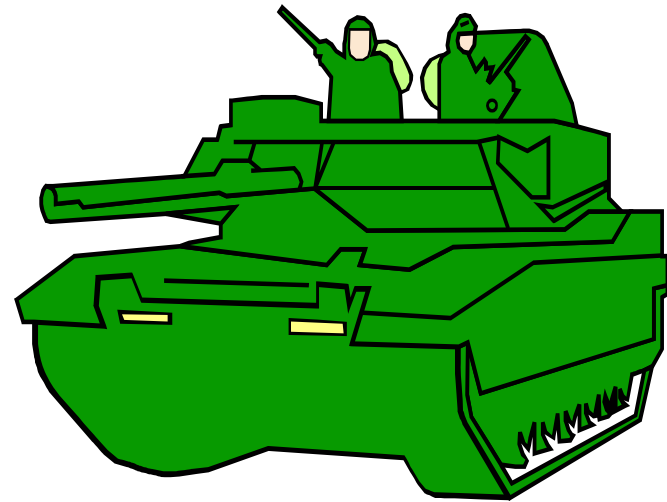
Independent Cost Estimates

- Estimate the supplier's Indirect Rates
- Use Industry Average Burden Rates
- Use Industry Average Load Factors
- Calculate supplier's Wrap Rate
 - Using a Load Factor of 2.5, we can calculate:
 - $\$36.01 \times 2.5 = \90.03 per hour.

#6 Market Research for same or similar items

must satisfy 4 requirements:

- Validated price
- Adjusted for quantity
- Adjusted for inflation
- Identify and analyze differences



#7 Pricing Information

- Used when other Price Analysis techniques fail
 - Sales history of the item or similar item to other customers
 - Proposal history of the item or similar item to other customers
 - Cost information “Non-Certified Cost or Pricing Data”.



Documentation

- Purchase Award Summary
- Price Analysis Memorandum
- Negotiation Memorandum



Purchase Award Summary

- The buyer must fully document the rationale for the source selection.
- Price Analysis required for procurements over \$3,000.
- Supporting documentation is mandatory
- A bid summary should be completed for all procurements

Price Analysis Memorandum

- Should be prepared to explain the details of complex procurements
- Clearly defines a fair and reasonable price or range of reasonableness
- Include supporting documentation
 - Technical Evaluations
 - Back-up of major cost elements

Negotiation Memorandum

- The Buyer/SCA should prepare a optional Negotiation Memorandum for agreements over \$100,000.
- Mandatory Negotiation Memo for procurements over \$700,000.
- Should reference the Price Analysis Memorandum.

Conclusions

Requirements for Price Analysis

- Can be satisfied by one or more of the seven techniques.
- Should result in a recommended price, or range of prices, to be negotiated by the Buyer/SCA.
- Should have a conclusion that the negotiated price is “fair and reasonable”.
- Price Analysis and Negotiation should be well documented.

Part II

Cost Analysis

Seminar Objectives

- Introduce effective cost analysis techniques
- Review various rules and regulations
- Comply with Truth in Negotiations Act (TINA)
- Analysis of various cost elements
- Provide Guidance on how to Document Cost Analysis

Cost Analysis Introduction

- Basic Principles of Cost Analysis
- Laws and Regulations
- Cost Elements
- Cost Analysis Report
- Certificate of Current Cost or Pricing Data
- Negotiation Memorandum

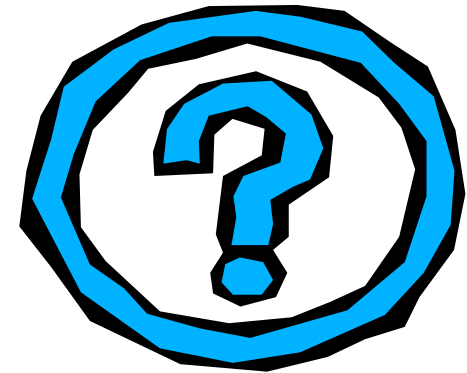
What is Cost Data ?

New FAR Definitions

- Certified Cost and Pricing Data:
 - ... that which is required to be submitted in accordance with FAR 15.403-4 and 15.403-5 and have been certified, or are required to be certified, in accordance with 15.406-2.
- Data Other Than Certified Cost or Pricing Data:
... may include the identical types of data as certified cost or pricing data, consistent with Table 15-2 of 15.408, but without the certification.

What is Cost Analysis?

- Definition: FAR 15.404-1
 - The review and evaluation of separate cost elements and profit.
- Is it necessary?
- Is it reasonable?
- What are the cost trends?
- What are the parametrics?
- Are rates audited or negotiated?



When is Cost Analysis Usually Done?

- When Price Analysis does not result in a Fair and Reasonable price.
- Whenever cost data is obtained.
- Single Source Procurements:
- Competitive Procurements:
 - On Cost Reimbursable contracts
- Catalog Prices:
 - Highly customized or modified products

TINA Requirements

- Cost Analysis is required if:
 - FAR Clause 52.215-12 is in the prime and
 - Prime will be required to certify.
 - \$700,000 threshold as of 10/1/10

TINA Exemptions

- Adequate Price Competition:
 - Must be per FAR 15.404-1
- Commercial Items:
 - Must meet definition in FAR 2.101.
- Prices set by Law or Regulation:
 - Must be documented and verified.
- Waivers:
 - Only Head of Contracting Activity

FAR Table 15-2

- General Instructions:
 - Submit ALL Cost or Pricing Data
 - Government has Right to Audit
- Cost Elements:
 - Provide a Priced bill of material.
 - Provide Time Phased labor.
 - Indicate how Rates were computed.
 - Sign Certificate of Current Cost or Pricing Data

FAR Part 31

Contract Cost Principles

All costs must be:

- 1. REASONABLE
- 2. ALLOCABLE
- 3. IN COMPLIANCE WITH CAS or GAAP
- 4. IN COMPLIANCE WITH THE CONTRACT
- 5. ALLOWABLE PER FAR 31.205

COST REALISM ANALYSIS

Use on Cost Reimbursable contracts over \$700,000

- Are the proposed costs Realistic?
- Do they show clear understanding?
- Are they consistent with the solution?

ASHTON CARTER on the Defense Budget

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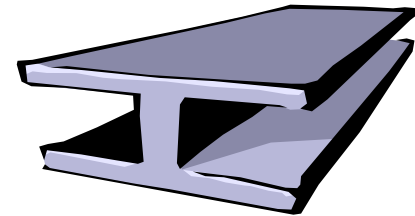


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Material Analysis

Fact-finding – Basis of Estimate

- Obtain a priced Bill of Material
- Obtain actual material costs on a previous contract
- Request an inventory listing of material
- Support proposed scrap factors
- Breakdown inter-organizational transfers
- Reconcile customer furnished equipment
- Review make/buy plans



Material Analysis

Analytical Techniques

- Review requirements to determine if the material is necessary and quantities reasonable
- Determine extent of competition obtained
- Review sellers price analysis
- Apply escalation based on BLS or DRI
- Use material discount curves

Other Direct Costs



- Travel:
 - Air Fare; Use the Internet.
 - Lodging and Meals; Use the FTR.
 - Car Rentals; Use the corporate rates.
- Computer: Use service center rates.
- Training and Conferences
- Telecommunications: Usually indirect.
- Consultants: Obtain a copy of agreement.
- Commissions: Usually indirect.
- Rentals/Leases: Usually indirect.

Manufacturing Labor

Fact-finding

- Obtain Labor Hours by Task and Category
- Request an Equipment List
- Identify Non-Recurring, Set-up, and Run Time
- Separate fabrication, assembly, and testing
- Request “Basis of Estimates” for all hours



Manufacturing Labor

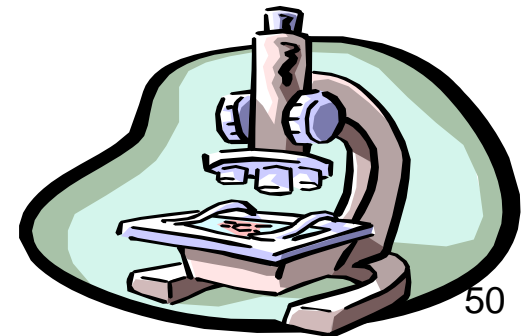
Analysis

- Comparison Techniques:
 - Actual Hours by same seller for same item
 - Actual Hours by another seller for same item
 - Previous Estimates by same seller
 - Previous Estimates by another seller
- Analytical Techniques:
 - Analyze the Basis of Estimates
 - Obtain a Technical Evaluation
 - Perform Parametric Analysis
 - Use Learning Curves

Engineering Labor

Fact-Finding

- Evaluate the seller's Engineering Expertise
- Research the current State of the Art
- Appraise the sellers accounting system
- Review the Basis of Estimates
- Request a Technical Evaluation of labor hours and labor categories



Engineering Labor

Analysis

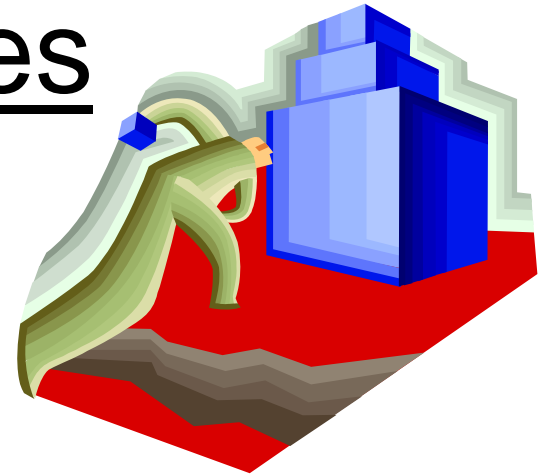
- Task Approach:
 - Review the basis of estimates
- Ratio of Support:
 - Support engineering a % of basic engineering
- Production Engineering Ratios:
 - Engineering a % of production effort
- Availability of Labor
 - Based on who is available to work effort
- Level of Effort:
 - A specific level over a specific time

Direct Labor Rates

- Fact-finding:
 - Average rate or Individual rate?
 - Obtain current payroll records
- Historical Rates:
 - Use a previous subcontract or proposal
 - Use rates from a previous invoice
- Salary Survey Data:
 - Use BLS data
 - other surveys AEA, ECS, etc.
- DCAA ASSIST AUDIT (PCO VS ACO)



Indirect Rates



- Fact-finding:
 - Indirect Rate Audit
 - Average Load Factors
- Indirect Rate Audit:
 - General Ledger summary accounts
 - Request an expert to do the audit
- Historical Rates:
 - Use rates from a previous subcontract
 - Use rates from a previous invoice
- Industry Averages:
 - Average Load Factors

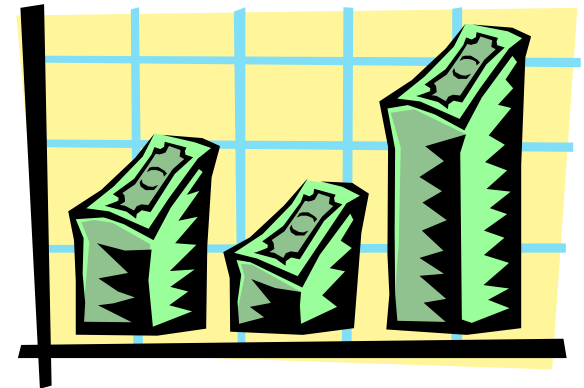
Cost of Money

CAS 414

- Use form CASB-CMF:
 - Obtain Net Book Value of assets
 - Apply current Treasury Rate
 - Calculate COM factors
- Use DD From 1861:
 - Calculate COM for each proposal
- COM Adjustment:
 - $\text{Current Rate/Proposed Rate} \times \text{Proposed Rate} = \text{Recommended COM}$

Profit/Fee

- FAR requires a Structured Approach
 - DFAR Weighted Guidelines (DD Form 1547)
- Alternate Approach:
 - Risk Free Rate; 2% to 6%
 - Performance Risk; 2% to 6%
 - Contract Type Risk; 0% to 6%
 - FFP 2% to 6%
 - CR & TM 0% to 2%
- Caution FAR Fee limitations for CPFF;
 - R&D is 15%
 - other is 10%



COST ANALYSIS REPORT

- References:
 - RFP
 - Proposal
- Background:
 - Summary Proposed
 - PL 87-653
 - PL 91-379
- Cost Elements:
- Summary Recommended

Cost Element Analysis Format

- The subcontractor proposed \$ _____ for Material. The Basis of Estimate (BOE) for the proposed amount is _____ dated _____.

The Cost Analyst reviewed the proposed BOE on _____.

- The Cost Analyst recommends \$ _____ for Material. The recommended amount is based on analysis of the proposed BOE dated _____.

Negotiation Memorandum

- References
- I. Background
- II. PL 87-653
- III. Cost Summary
- IV. Explanation
- V. Statement of Work
- VI. Terms and Conditions
- VII. Date of Final Agreement on Price



SUMMARY

- Use the 7 Price Analysis Techniques
- Use Cost Analysis when TINA applies
- Get Cost and Pricing Data
- Analyze the Cost and Pricing Data
- Negotiate the Cost and Pricing Data
- Obtain the Certificate of Cost and Pricing
- Write the Negotiation Memo

Biographies

- Mr. Chalfant has over 25 years of experience in Contract Management. He has worked in the aerospace and communications industries, government contracting, and worked directly with the Army and Navy on many projects. He is a CPCM and the past president of the NCMA San Diego Chapter.
- Ms Carlin consults to government contractors in the specialized area of government contract accounting. She is a Certified Public Accountant in the State of California and currently the President of the San Diego Chapter of the Association of Government Accountants.
- Ms Stephanie Perez provides consulting services in the city, state and Federal areas. She is a former veteran of the United States Marine Corps, which became the foundation for more a 20-year career in Federal Procurement. She is the 2010/2011 Woman of the Year for the National Association of Professional Women.

Case Study: Contractor X

Problem:

In 1997, the DoD Inspector General (IG) criticized the Defense Logistics Agency (DLA) for paying excessive prices for sole-source commercial items from X. The actions identified were individual purchase orders, contracts, and delivery orders against basic ordering agreements for various aircraft spare parts awarded from 1994-96. Even though the prices paid were 20% lower than the catalog price that commercial customers paid, they were an average of 280% higher (adjusted for inflation) than prices previously paid by the Government (prior to 1994 when most of the items did not meet the commercial item definition). In other words, absent any additional value being offered by the contractor (there was none) to offset the higher prices, the fact that the DLA was paying less than every commercial customer, and 20% less than catalog price, was not adequate to determine the prices to be fair and reasonable.

Even after the IG identified its concerns, the contractor was not willing to negotiate lower prices for these items when purchased individually. This was true even when the procurements were elevated to the command level at the buying activity.

Case Study: Contractor X

Solution:

However, the contractor did agree to negotiate a “corporate contract” for all items in its commercial catalog. In other words, the grouping of many smaller requirements into a larger long-term contract, made DLA a more attractive business partner to X, and X was willing to negotiate a better deal because there was something in it for them.

DLA conducted extensive market research on the items involved and used a variety of price analyses to discretely price as many of the individual items as possible. Market research led to alternate sources for a few of the items. DLA awarded a contract for 216 items in X’s commercial catalog at prices that averaged about 71% lower than catalog prices. Again, a % off a catalog price does not necessarily mean anything in terms of price reasonableness. Using the IG’s methodology of comparison to previous prices, the new prices were still 40 % higher than the pre-1994 prices. However, DLA achieved significant savings in inventory costs attributed to the administrative lead-time savings (over 100 days per order saved) and administrative costs associated with awarding delivery orders against the corporate contract rather than individual awards. In other words, while the unit prices were higher than what the Government had paid in the past, savings in other costs to the Government offset the increased unit prices.

This example illustrates how the Government can secure value through corporate contracting in ways that cannot be accomplished just by focusing on a particular item. When using corporate contracting to secure value, file documentation must clearly communicate to future buyers what the price represents (e.g. business considerations that affected the instant price) so that they will understand the specifics before they attempt to use such information in future awards.

COMPETITION CASE STUDIES

DDG-51 Destroyers:

Problem: In a recent review of the DDG-51 Destroyer costs, it was noted that the new cost for the Restart Main Reduction Gears (MRG) previously subcontracted by two construction shipyards as Class Standard Equipment, was now more than three times the previous cost. The incumbent manufacturer had exited from the market for MRGs and had sold its intellectual property to another firm. The Prime passed on this subcontractor's new bill to the government without aggressive cost management.

Answer: The PEO broke out the MRG from the prime contractor and conducted a full and open competition, which resulted in a savings of over \$400 million to the government for a lot buy of nine ship sets.

Littoral Combat Ship (LCS)

Problem: The Navy had selected two LCS designs in a competitive prototype procurement. The LCS program was in danger of falling into a pattern of directed buys rather than real competition, with the result that the price of an LCS was creeping up towards that of a Destroyer.

Answer: The Navy decided to select only one of the LCS designs for production, doing so in an additional competitive selection. Competition in a different form will then be introduced into the program, as other shipbuilders are provided the technical data to build the same ship design competitively. This strategy is expected to save the Navy over \$1 billion over the FYDP.

USAF Design and Engineering Support Program (DESP)

Problem: The USAF reviewed the DESP for effective competition. They found that 39 percent of the task order competitions under the ID/IQ contract resulted in one bid. What can the USAF do to get more bids?

Answer: First, the USAF amended the source selection methodology so that technical, cost, and past performance factors were more equally weighted. No one factor can be less than 25% or more than 50%. This served to lessen the advantage of the incumbent contractor. Second, the USAF effectively added an additional 45 days to the time a requirement is made known to the potential offerors and the bid due date. These two changes have reduced one bid task orders by 50%.