

BMAC'S ESTIMATING SYSTEM
AND
ENGINEERING'S ROLE
IN THE
COST PROPOSAL PROCESS

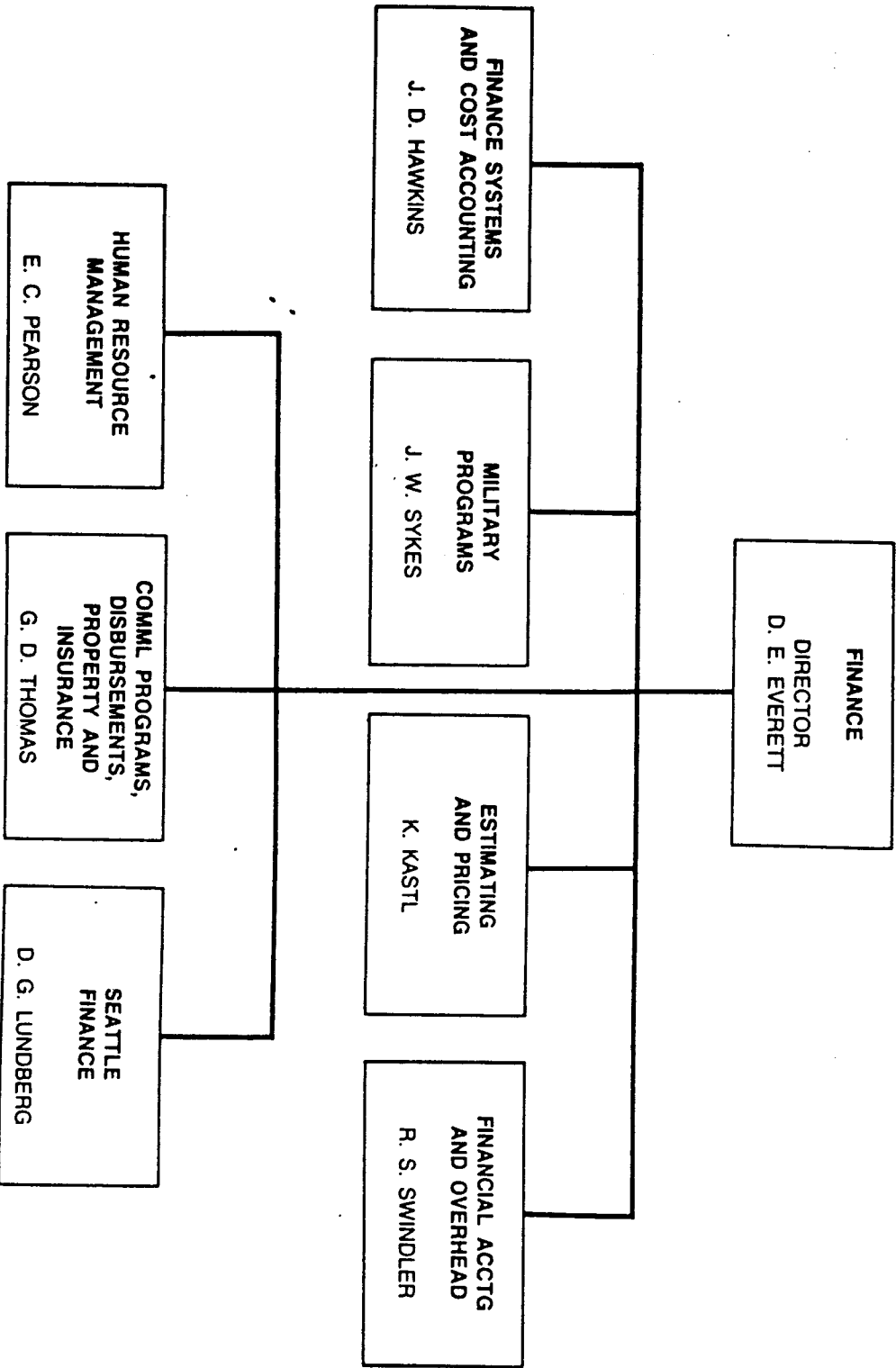
FINANCE PRICING & ESTIMATING
ESTIMATING SYSTEM COMPLIANCE
Org. 9230

PRESENTATION OBJECTIVES



- o FINANCE ORGANIZATION
- o ESTIMATING SYSTEM
- o ESTIMATING RESPONSIBILITIES
- o COST PROPOSAL DEVELOPMENT
- o COST AND PRICING DATA

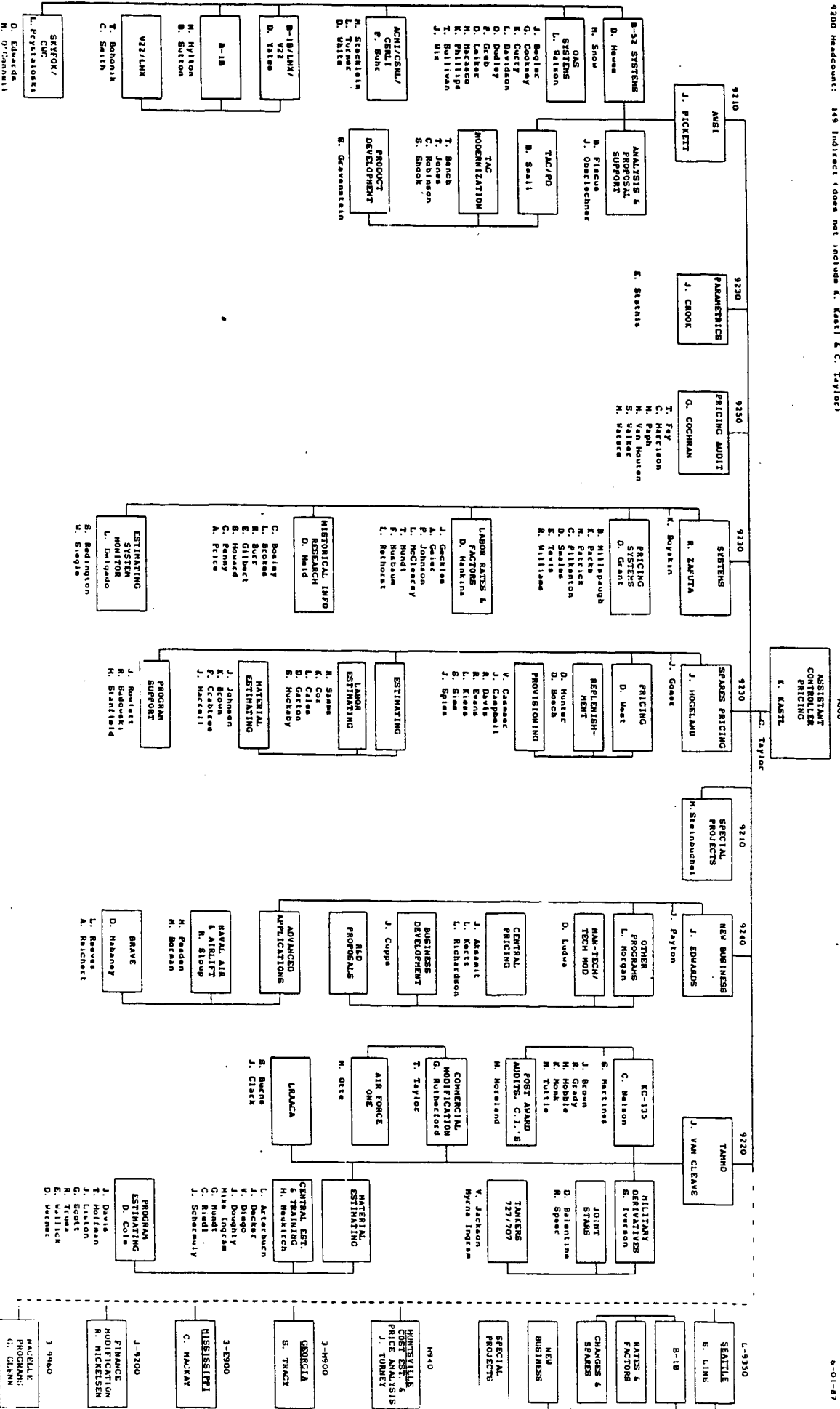
FINANCE



BOEING MILITARY AIRPLANE COMPANY

Chart No. 58

Date 2-17-67



FINANCE PRICING AND ESTIMATING

A SERVICE ORGANIZATION WITH RESPONSIBILITY TO

- o ESTABLISH AND MAINTAIN THE ESTIMATING SYSTEM (DOCUMENTATION)
- o SUPPORT PROPOSAL MANAGEMENT
 - o PROVIDE COST AND NON COST DATA TO SUPPORT PROPOSAL STRATEGY DEVELOPMENT
 - o DIRECT AND COORDINATE ESTIMATE AND DOCUMENTATION PREPARATION, REPORT STATUS AND PROVIDE PROBLEM IDENTIFICATION, RECOMMEND PROBLEM SOLUTION
 - o PROVIDE ANALYSIS, INDEPENDENT RESEARCH AND COSTING AND RECONCILIATION
 - o SUPPORT FACT FINDING AND NEGOTIATION, MAINTAIN APPROPRIATE RECORDS
- o DEVELOP DIRECT LABOR RATES AND COORDINATE DEVELOPMENT OF FACTORED DDS
- o ADVISE FINANCE AND HIGHER MANAGEMENT ON COST/PRICING RISK, ASSURE COMPLIANCE WITH APPROVED ESTIMATING SYSTEM REQUIREMENTS, DEVELOP SCHEDULED REPORTS AND CONDUCT REQUESTED STUDIES
- o ESTABLISH AND MAINTAIN AN ORGANIZED HISTORY OF COST AND NON COST DATA - ENGAGE IN BASIC RESEARCH SUCH AS PACI-
- o PREPARE TRAINING MATERIALS AND CONDUCT TRAINING FOR FUNCTIONAL AND FINANCE ESTIMATING PERSONNEL.

PRESENTATION OBJECTIVES

o FINANCE ORGANIZATION

▷ o ESTIMATING SYSTEM

o ESTIMATING RESPONSIBILITIES

o COST PROPOSAL DEVELOPMENT

o COST AND PRICING DATA

THE BMAC ESTIMATING SYSTEM

POLICY ESTABLISHES REQUIREMENT FOR AN ESTIMATING SYSTEM
COMPLIANT WITH PUBLIC LAW AND FEDERAL REGULATION, AND
CONSISTENT WITH COMPANY OBJECTIVES, ESPECIALLY.,

- PUBLIC LAW 87-653 "TRUTH IN NEGOTIATIONS"
- FEDERAL ACQUISITION REQUIREMENTS (FAR)
PART 15 "ESTIMATING SYSTEM"
- "BMAC ESTIMATING SYSTEM" DOCUMENTATION
D500-10595-1 THRU 12

ESTIMATING SYSTEM DOCUMENTATION

- o KEY REQUIREMENTS
 - o FORMAL (CONTROLLED) - FAR 15.811 (C)(2)
 - o DISCLOSURE - FAR 15.811
 - o AUDIT - FAR 15.811 (A)
 - o ADEQUACY - CMSEP
 - o COMPLIANCE - CMSEP
- o CONTENT
 - o DESCRIBES HOW TASKS ARE ACCOMPLISHED - FAR 15.811 (A)&(C) (4)
-COR 3-009
 - o ASSIGNS RESPONSIBILITY FOR TASKS - FAR 15.811 (C)(3)
 - o CITES DATA SOURCES AND ESTABLISHES PROCEDURES FOR ASSURING
ACCURACY, COMPLETENESS & CURRENCY - FAR 15.811 (C)(1)
- o OBJECTIVES
 - o EMPHASIZE INTER-COMPANY SIMILARITIES
 - o REDUCE SYSTEM COMPLEXITY
 - o DEVELOP RESOURCE INTERCHANGEABILITY

TO DEVELOP COMPLIANCE WITH THE INSTRUCTION, FINANCE PRICING AND ESTIMATING HAS DEVELOPED TWO VOLUMES. THESE VOLUMES EMPHASIZE AND PROVIDE CONTROL AND VALIDATION METHODOLOGY FOR KEY TASKS IN COST PROPOSAL PREPARATION:

- o INSTRUCTION, PLANNING, STATUS REPORTING AND VERIFICATION OF COMPLIANCE
- o COST ESTIMATE PREPARATION METHODOLOGY
- o DEVELOPMENT AND USE OF ACCURATE, CURRENT AND COMPLETE COST OR PRICING DATA
- o DOCUMENTATION OF COST OR PRICING DATA
- o STANDARD PROPOSAL STRUCTURE AND FORMATS
- o SUPPORT TO FUNCTIONAL MANAGEMENT, WHO HAS RESPONSIBILITY FOR COMMITMENT AND INTERNAL CERTIFICATION
- o PREPARATION OF DATA FOR MANAGEMENT VISIBILITY AND REVIEW

ESTIMATING SYSTEM

VOLUME ONE

Books 1

ESTIMATING SYSTEM REQUIREMENTS
D600-10595-1

ESTIMATING METHODS
D600-10595-2

PROPOSAL PREPARATION METHODS
D600-10595-3

ESTIMATING SYSTEM CONTROL
D600-10595-12

ESTIMATING SYSTEM AUDIT INSTRUCTION
D600-10595-11

VOLUME TWO

Books 2

STATISTICAL ANALYSIS INSTRUCTION
D600-10595-5

PROGRAM ACQUISITION COST MODEL INSTRUCTION
D600-10595-4

HISTORICAL DATA SYSTEM INSTRUCTION
D600-10595-6

PROPOSAL STRUCTURE INSTRUCTIONS AND STANDARD FORMATS
D600-10595-7

MODEL EXHIBITS
D600-10595-8

ESTIMATING SYSTEM SUPPLEMENT

COST PROCESSING SYSTEM INSTRUCTION
D600-10595-10

VOLUME ONE:

BOOK ONE:

D500-10595-1, ESTIMATING SYSTEM - THIS MANUAL SPECIFIES THE LAW AND REGULATIONS AND APPLICABLE COMPANY POLICIES WHICH GOVERN CONTRACTOR ADHERANCE TO A FORMALLY DOCUMENTED COST ESTIMATING SYSTEM.

D500-10595-2, ESTIMATING METHODS - THIS DOCUMENT DEFINES THE COST ELEMENTS AND ESTIMATING METHODS EMPLOYED IN THE ESTIMATING SYSTEM.

D500-10595-3, PROPOSAL PREPARATION METHOD - THIS DOCUMENT DESCRIBES THE METHODOLOGY EMPLOYED IN PROVIDING A RESPONSIVE, RELIABLE, AND DOCUMENTED COST PROPOSAL.

D500-10595-11, SYSTEM AUDIT INSTRUCTION - THIS DOCUMENT ESTABLISHES THE STEPS IN DETERMINING COMPLIANCE WITH THE COMPANY ESTIMATING SYSTEM.

D500-10595-12, ESTIATING SYSTEM CONTROL - THIS DOCUMENT EXPLAINS THE PROCEDURES FOR IDENTIFICATION AND CORRECTION OF ESTIMATING SYSTEM DEFICIENCIES.

VOLUME TWO:

D500-10595-4, PROGRAM ACQUISITION COST MODEL (PACM) - THIS DOCUMENT CONTAINS WORKING LEVEL GUIDANCE AND DIRECTION FOR USE BY AUTHORIZED PERSONNEL IN USING THE PACM FOR COST ESTIMATES.

D500-10595-5, STATISTICAL ANALYSIS GUIDELINES FOR COST TO NON-COST ESTIMATING RELATION (CER) DEVELOPMENT - THIS DOCUMENT CONTAINS A DESCRIPTION OF THE STATISTICAL ANALYSIS METHODS TO BE USED IN THE DEVELOPMENT OF COST TO NON-COST ESTIMATING RELATIONSHIPS.

D500-10595-6, HISTORICAL DATA BANK - THIS DOCUMENT CONTAINS A DESCRIPTION OF THE METHODS UTILIZED IN THE PREPARATION OF THE COMPANY HISTORICAL DATA BANK.

VOLUME TWO:

D500-10595-7, PROPOSAL STRUCTURE INSTRUCTION AND STANDARD FORMATS - THIS DOCUMENT IS A GUIDE TO THE OVERALL STRUCTURE OF THE COMPANY COST PROPOSAL DOCUMENT AND THE STANDARD COMPUTER FORMATS PRODUCED FOR INCLUSION IN A COST PROPOSAL DOCUMENT.

D500-10595-8, RATES AND DISTRIBUTED DIRECT (DD) LABOR MODEL DOCUMENT - THIS DOCUMENT IS A GUIDE TO THE DOCUMENTATION STRUCTURE FOR THE RATES AND DDS EXHIBIT INCLUDED WITHIN A COST PROPOSAL.

D500-10595-10, COST PROCESSING SYSTEM OPERATIONS MANUAL - THIS DOCUMENT PROVIDES THE INSTRUCTION WHICH ENABLES THE ESTIMATOR TO PROCESS THE COST INFORMATION NECESSARY IN THE PREPARATION OF COST PROPOSALS.

ESTIMATING SYSTEM SUPPLEMENT - INTERIM INSTRUCTIONS PREPARED TO MAINTAIN ESTIMATING SYSTEM ADEQUACY IN ADVANCE OF FORMAL SYSTEM DOCUMENTATION UPDATE (REFERENCE D500-10595-12, SECTION 3.0)

PRESENTATION OBJECTIVES

- o FINANCE ORGANIZATION
- o ESTIMATING SYSTEM
- ▷ o ESTIMATING RESPONSIBILITIES
 - o COST PROPOSAL DEVELOPMENT
 - o COST AND PRICING DATA

ESTIMATING RESPONSIBILITIES

0 FUNCTIONAL ORGANIZATIONS

(Figs 1, 2, 3)

0 BASIC ESTIMATES

0 SUPPORT/METHODOLOGY

0 RISK ASSESSMENT

0 EXHIBIT - SUPPORT DOCUMENTATION

0 FINANCE

0 PLANNING AND DIRECTION

0 RATE AND FACTOR SUPPORT

0 REVIEW AND ANALYSIS

0 COSTING

0 RISK ASSESSMENT

0 DOCUMENTATION

REFERENCE OP 9000-121 "BMAC ESTIMATING SYSTEM" FOR ASSIGNMENT OF RESPONSIBILITIES
IN THE PERFORMANCE OF ACTIVITIES IN THE ESTIMATING SYSTEM & PROPOSAL PREPARATION
PROCESS.

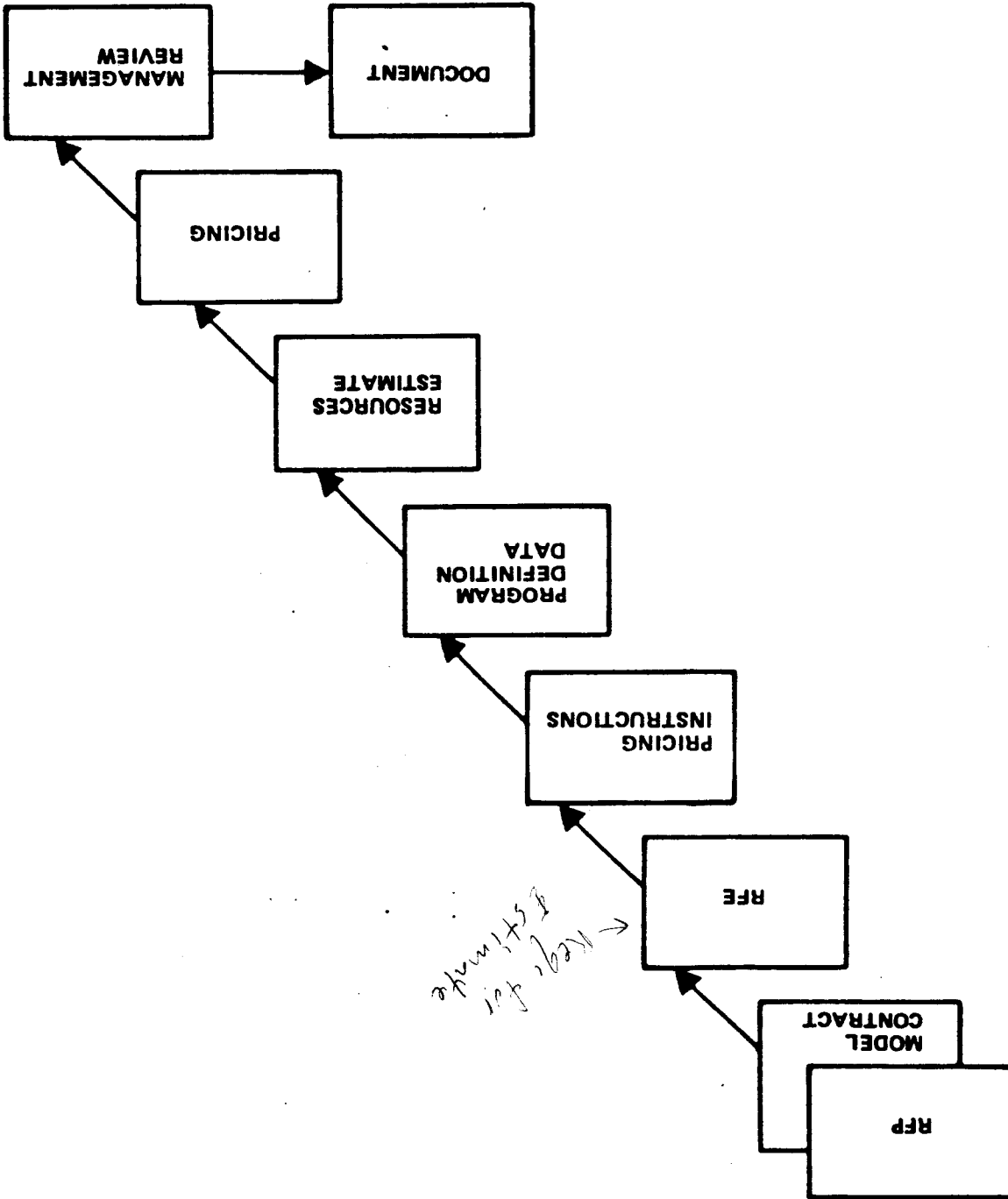
PRESENTATION OBJECTIVES

- o FINANCE ORGANIZATION
- o ESTIMATING SYSTEM
- o ESTIMATING RESPONSIBILITIES
- o COST PROPOSAL DEVELOPMENT
- o COST AND PRICING DATA

COST PROPOSAL DEVELOPMENT

- o PROPOSAL PREPARATION FLOW**
- o TYPICAL PROPOSAL STRUCTURE**
- o PROPOSAL CONTROL**
- o COSTING EXAMPLE**
- o PROPOSAL DOCUMENTATION**

Cost Proposal Preparation Flow



TYPICAL PROPOSAL

TECHNICAL
PROPOSAL

- TELL THE TECHNICAL STORY AND PLAN

MANAGEMENT
PROPOSAL

- TELL THE ORGANIZATIONAL STORY

COST
PROPOSAL

- TELL THE COST STORY

- DESCRIBE THE HARDWARE

- DESCRIBE THE ADMINISTRATIVE PLANS AND TECHNIQUES

- PRESENT THE COSTS ON THE RFP FORMATS

- DESCRIBE THE SOFTWARE

- DESCRIBE THE TECHNICAL SCHEDULES AND COST CONTROL TECHNIQUES

- PRESENT THE COST BACK UP DATA

- SPECIFICATION IN RESPONSE TO THE RFP

- DESCRIBE THE DATA PLAN AND CONTROL

- PROVIDE SEPARATE BREAKDOWN OF COSTS

- PROPOSED TERMS AND CONDITIONS

- PROPOSED STATEMENT OF WORK

- CONTRACT LINE ITEM STRUCTURE

MODEL
CONTRACT

PROPOSAL CONTROL

- o DEFINITION OF PROPOSAL PREPARATION/DOCUMENTATION TASK
 - o RFP REVIEW
 - o EST INSTRUCTIONS
 - o CONTRACT CONTROL/RESPONSIBILITY MATRIX
 - o WBS/COST ELEMENT CONTROL
 - o ESTIMATING AND PROPOSAL PREPARATION INSTRUCTIONS
- o ESTIMATE AND PROPOSAL PREPARATION PLAN
- o PROGRAM DEFINITION DATA
- o PROGRESS MONITORING
- o PROPOSAL RECORDS
- o COST PROPOSAL REVIEW SYSTEM

PROGRAM DEFINITION DATA
(LISTING OF BASIC ITEMS)

- o MODEL CONTRACT
- o WORK BREAKDOWN STRUCTURE (WBS)
- o STATEMENT OF WORK (SOW)
- o MASTER EQUIPMENT LIST (MEL)
- o PROGRAM SCHEDULES
- o EQUIPMENT DESCRIPTIONS
- o .MAKE/BUY/GOVERNMENT FURNISHED PROPERTY DETERMINATION
- o TOOL LIST
- o ORGANIZATION PLANS
- o RESPONSIBILITY MATRICES
- o BOEING PROGRAM GROUND RULES
- o PRICING GROUND RULES

PROGRAM DEFINITION DATA

(APPLICATION TO ESTIMATING)

- o PROVIDES THE BASIS FOR ALL ESTIMATES
 - ROUGH ORDER MAGNITUDE (ROM)
 - PARAMETRIC ANALYSIS
 - BUDGETARY OR PLANNING
 - FIRM COMPANY PROPOSALS
- o MUST EXIST IN SOME FORM FOR ANY ESTIMATE
- o SHOULD ALWAYS BE DOCUMENTED (NOT IN THE "MINDS EYE" OF THE ESTIMATOR)
- o NO ESTIMATE CAN BE BETTER THAN THE QUALITY OF THE DEFINITION MEDIA AVAILABLE
- o PROGRAM DEFINITION MEDIA PRESCRIBES:
 - WHAT MUST BE DONE
 - WHO IS GOING TO DO IT
 - WHEN IS IT GOING TO BE DONE
 - WHERE THE TASKS ARE GOING TO BE DONE

ENGINEERING COSTING EXAMPLE

EST. ELEMENTS

ESTIMATED
TASK DIRECT
C.E.
DD
C.E.

SECTION PARAGRAPH	ESTIMATED TASK DIRECT C.E.	DD C.E.
ENGINEERING		
TASK DIRECT		
ENGINEERING PROGRAM	2.0	
ENGINEERING PROGRAM	2.1	
SYSTEMS ENGINEERING	2.1a	X
DESIGN	2.1b	X
ILS - PROGRAM	2.1c	X
SYSTEMS TEST	2.1d	X
SUBCONTRACT MGMT	2.1e	X
PROGRAM UNIQUE - OTHER ENGR	2.1f	X
SUSTAINING PROGRAM ENGINEERING	2.1g	X
R&E - CENTRAL	2.2	
DESIGN TECHNOLOGY	2.2a	X
FLIGHT TEST	2.2b	X
TECH STAFF	2.2c	X
SUSTAINING R&E	2.2d	X
ILS - CENTRAL	2.3	
PUBLICATIONS	2.3a	X
SPARES	2.3b	X
ILS OTHER	2.3c	X
SUSTAINING ILS	2.3d	X
CHIEF SCIENTIST	2.4	X
COMMERCIAL & MISCELLANEOUS DESIGN	2.5	X
ENGR DIRECT DISTRIBUTABLES	2.6	
PROGRAM MGMT	2.6a	
SC/CS/OPS	2.6b	X
PROGRAM SC/CS/OPS	2.6b(1)	
PROGRAM SC	2.6b(2)	X
PROGRAM CS	2.6b(3)	
PROGRAM OPS	2.6b(4)	
R&E SC/CS/OPS	2.6b(5)	
R&E SC	2.6b(6)	
R&E CS	2.6b(7)	
R&E OPS	2.6b(8)	
ILS SC/CS/OPS	2.6b(9)	
ILS SC	2.6b(10)	X
ILS CS	2.6b(11)	
METROLOGY/LAB PLANNING	2.6c	X
LIAISON ENGINEERING	2.6d	X
ILS PRODUCT SUPPORT BATCH PROCESSORS	2.6e	X

Figure A2-2-1. Engineering Cost Element Matrix

ENGINEERING COSTING EXAMPLE (CONT)

GIVEN: Start with a task sheet of 1,000 hours of Program Engineering
 enter the pricing system the result is:

Description	Rate/ Factor	Input Hours	Factored	Dollars
LABOR EFFORT		1,000		
Prog. Engineering				
Program SC/CS/OPS DD	28.4%		284	
Program Mgmt DD	8.0%		103	
OP/PE Procurement DD	6.0%		77	
Finance DD	3.4%		44	
TOTAL HOURS LABOR RATED	\$16.21	1,000	508	\$24,448
FRINGE \$	38.6%		\$9,437	9,437
Engineering Overhead \$	\$12.78		17,726	
Mfg Overhead \$	\$18.34		1,412	
TOTAL OVERHEAD \$				19,138
NONLABOR EFFORT				
SC/CS/OPS DD Travel \$	\$0.85		\$241	
Prog Mgmt DD Travel \$	\$1.71		176	
OP/PE Proc. DD Travel \$	\$1.52		117	
Prog Supt Sys/BCS \$	\$0.05		75	
TOTAL NONLABOR FACTORED \$				610
GENERAL & ADMINISTRATIVE \$	11.8%			6,329
Engr Cost of Money	\$0.78		1,082	
Mfg Cost of Money	\$1.10		85	
G&A Cost of Money	0.2%		13	
TOTAL COST of MONEY				1,180
TOTAL COST				\$61,141
PROFIT	16.0%			9,594
TOTAL PRICE				\$70,735

*These are
 inputs to
 the system*

*Benefits
 (Insurance, etc.)*

10/11/71

COST PROPOSAL DOCUMENTATION

THE STANDARD PROPOSAL STRUCTURE AND FORMATS ARE GROUPED INTO THE FOLLOWING:

BOOK 1: COST SUMMARY

BOOK 2: SUPPORTING EXHIBITS

- 0 EXHIBIT A - DIRECT ENGINEERING LABOR
- 0 EXHIBIT B - DIRECT OPERATIONS LABOR
- 0 EXHIBIT C - DIRECT MATERIAL DOLLARS
- 0 EXHIBIT D - DIRECT OTHER COSTS
- 0 EXHIBIT E - RATES AND FACTORS
- 0 EXHIBIT F - INTERDIVISIONAL SUPPORT
- 0 EXHIBIT H - CDRL
- 0 EXHIBIT I - Cost/Pricing Data Index

EXHIBIT STRUCTURE

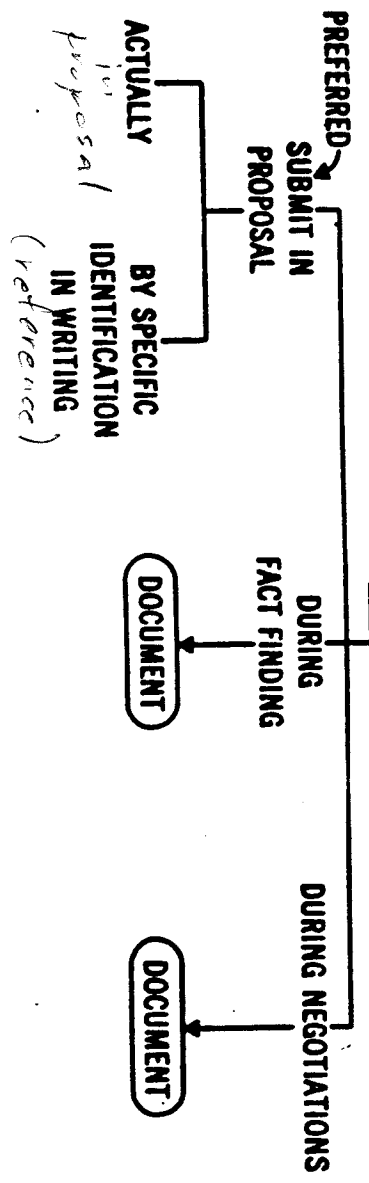
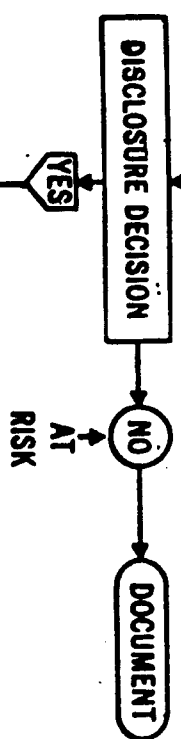
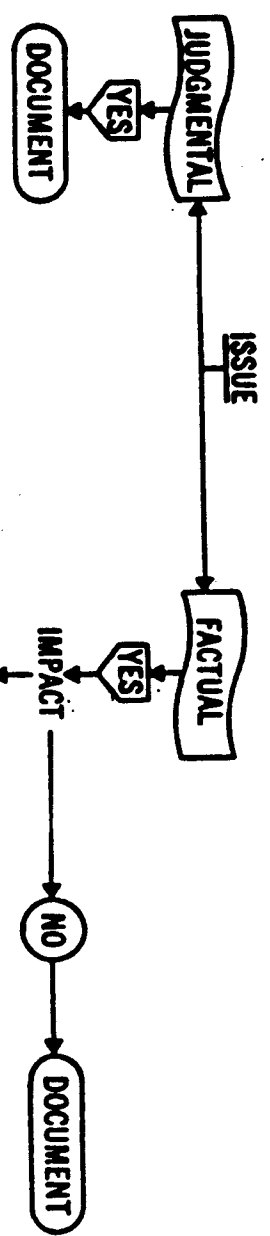
<u>EXHIBIT/TITLE</u>	<u>SECTION</u>	<u>CONTENT</u>
EXHIBIT A - ENGINEERING	1.0	0 INTRODUCTION
	2.0	0 LABOR SUMMARIES (A-SERIES FORMATS)
	3.0	0 LABOR DEFINITIONS
	4.0	0 ESTIMATING METHODOLOGY
	5.0	0 LABOR SUPPORT (By ORGANIZATION, WBS, CLIN, SOW, OR TASK)

PRESENTATION OBJECTIVES

- o FINANCE ORGANIZATION
- o ESTIMATING SYSTEM
- o ESTIMATING RESPONSIBILITIES
- o COST PROPOSAL DEVELOPMENT
- o COST AND PRICING DATA



EXHIBIT DATA DISCLOSURE REQUIREMENTS



*INCLUDE IN DATA INDEX AND PROPOSAL RECORDS

COST AND PRICING DATA

WHY WE WRITE TASK SHEETS

DATA REQUIRED BY "TRUTH IN NEGOTIATIONS ACT" PUBLIC LAW 87-653.
IMPORTANCE OF ESTIMATING PROCEDURES.

TO COMPLY WITH THE REQUIREMENTS, IT IS REQUIRED THAT CONTRACTORS ORGANIZE THEIR ESTIMATING PROCEDURES SO THAT THE FINAL COST ESTIMATE CAN BE READILY TRACED BACK TO THE LOWEST COST LEVEL INPUT ON WHICH IT IS BASED. COST DATA MUST BE FURNISHED SO THAT THE FACTUAL DATA CAN BE IDENTIFIED FROM THE ESTIMATES.
IMPLEMENTATION OF PUBLIC LAW 87-653

PUBLIC LAW PROVIDES THAT A CONTRACTOR MUST SUBMIT EITHER FACTUALLY, OR BY SPECIFIC IDENTIFICATION IN WRITING, COST OR PRICING DATA, AND CERTIFY THAT TO THE BEST OF HIS KNOWLEDGE AND BELIEF, THE COST OR PRICING DATA HE HAS SUBMITTED WAS ACCURATE, COMPLETE AND CURRENT.

DEFINITION OF COST OR PRICING DATA.

COST OR PRICING DATA CONSISTS OF ALL THE FACTS EXISTING UP TO THE TIME OF AGREEMENT ON PRICE WHICH PRUDENT BUYERS AND SELLERS WOULD REASONABLY EXPECT TO HAVE A SIGNIFICANT EFFECT ON THE PRICE NEGOTIATIONS.

IN SHORT, COST OR PRICING DATA CONSISTS OF ALL THE FACTS WHICH CAN REASONABLY BE EXPECTED TO CONTRIBUTE TO SOUND ESTIMATES OF FUTURE COSTS, AS WELL AS TO THE VALIDITY OF COSTS ALREADY INCURRED.

COST AND PRICING DATA

WHY WE WRITE TASK SHEETS (CONTINUED)

WHAT DATA MUST BE SUBMITTED.

THE REGULATIONS PROVIDE THAT THE CONTRACTOR IS EXPECTED TO MAKE DISCLOSURE OF EXISTING VERIFIABLE DATA AND JUDGEMENTAL FACTORS APPLIED IN PROJECTING FROM KNOWN DATA TO THE ESTIMATE, AS WELL AS CONTINGENCIES USED IN THE PROPOSED PRICE. IN SHORT, THE CONTRACTOR'S ESTIMATING PROCESS ITSELF NEEDS TO BE DISCLOSED.

APPLIES TO NOT ONLY ESTIMATED MANHOURS ON TASK SHEETS BUT TO ESTIMATED BCS REQUIREMENTS AS WELL.

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ORG. NO. 79911 NAME Engineering Preparation

CHANGE ECP 999-99

WBS 6.2.0

PAGE 1 OF 2

BUY/LOT LOT 1

TASK DEFINITION AND BASIS FOR ESTIMATE

1. Develop Weapon System Design Handbooks (SOW 6.2.1.1.1)

TASK DEFINITION:

An input to the Weapon System Design Handbook will be prepared. This input will define the electrical power quality and quantity of the B-52G and H aircraft. Design criteria for equipment requiring electrical power will be included in this input. A listing of the military specifications that are applicable to the electrical power generation, control and distribution will be compiled for inclusion in the Design handbook. The electrical power input to the System Design Handbook will include sections for the Alternating Current (AC), Direct Current (DC) and the Battery Systems.

ESTIMATE RATIONALE:
Separate inputs will be made for the A/C and it is estimated that the B-52G will require 20 pages and the B-52H will require 15 pages. On the Offensive Avionics System (OAS) where similar inputs were required, 25 pages were required for Handbook D675-XXXX-1X. The Cost Estimating Relationships Catalog (CER) Page 45, OAS/Cruise Missile Integration (CMI) history as of 7-4-85 lists Weapons System Delivery Manuals, which are similar to Weapon System Design Handbooks, to

NO.	NO. OF DAYS	TRIP DESTINATION	TIME PERIOD OF TRIP (MO. & YR)	PURPOSE OF TRIP	TOTAL MH																					
					MM	MM																				
1	141				141	5																				
	0				0	9																				
PROGRAM TRIPS (IDENTIFY & INCLUDE MH ABOVE)																										
MH MM () DISTRIBUTION (DIS)																										
MO.	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M											
Dis		47	0	62	34																					
1988																										
1989																										
MO.	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J											
Dis																										
1990																										
1991																										
MO.	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J		
Dis																										
1992																										
PREPARED: John Doe																										
APPROVED: Pete Smith																										

BOEING MILITARY AIRPLANE COMPANY

ESTIMATE TASK SHEET

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ORG. NO. 79911 NAME ORG. Engineering Preparation

CHANGE ECP 999-99

BUY LOT 1 DATE 2-5-87
WBS 6.2.0 PAGE 2 OF 2

TASK DEFINITION AND BASIS FOR ESTIMATE

PREVIOUS PAGE SUBTOTAL

MH(K) MM(I)
CH(I)

1435

1. Develop Weapon System Design Handbooks (SOW 6.2.1.1.i) (continued)

ESTIMATE RATIONALE: (continued)
require 4.1 hours per page.
CALCULATION:

(20 + 15) pages x 4.1 MH/page =

EWS ITEM	TASK DEFINITION AND BASIS FOR ESTIMATE	PREVIOUS PAGE SUBTOTAL	MH(K) MM(I) CH(I)
	1. Develop Weapon System Design Handbooks (SOW 6.2.1.1.i) (continued) ESTIMATE RATIONALE: (continued) require 4.1 hours per page. CALCULATION: (20 + 15) pages x 4.1 MH/page =	0.0	
	<input type="checkbox"/> PAGE SUB. <input checked="" type="checkbox"/> TASK TOTAL	1435	PITCH.TS 1

BOEING PROPRIETARY
 POPULATION DATA
 INITIAL DESIGN HOURS
 AVIONICS AND COMPLEX SUPPORT EQUIPMENT MBS

AS OF 07/04/85

CONTRACT	MBS	TITLES	HOURS	DRAWINGS	SHEETS	SQ INCHES	HRS/DWG	HRS/SHT	HRS/SQ IN
CHIFSD	X10	DC POWER MOD	12,831	41	233	215,050	158.4	55.1	.060
CHIFSD	ABDA	CONTROL INDICATOR	481	4	20	4,862	120.3	24.1	.039
CHIFSD	X74	AVIONICS PRIMARY MISSION EQUIP	1,618	14	14	55,352	115.6	115.6	.029
CHIFSD	X02	FACTORY TEST AND SUPPORT EQUIP	9,621	38	51	178,772	253.2	108.6	.054
OASFSO	ABDC	RADAR PRESENTATION CONTROL	4,375	11	43	29,359	397.7	101.7	.149
OASFSO	ABDD	WEAPON CONTROL PANEL	5,530	30	180	150,816	184.3	30.7	.037
OASFSO	ABDE	COMPUTER CONTROL PANEL	7,556	35	284	227,953	215.9	26.6	.033
OASFSO	ABDH	RADAR NAV. NIGHT. PANEL	7,184	36	378	172,601	199.6	19.0	.042
OASFSO	ABEA	RADAR INTERFACE UNIT (RIU)	18,363	36	552	231,319	510.1	33.3	.079
OASFSO	ABEC	EVS INTERFACE UNIT (EIU)	17,183	37	512	246,560	464.4	33.6	.070
OASFSO	ABED	ARRAHENT INTERFACE UNIT (AIU)	16,968	29	279	145,580	585.1	60.8	.117
OASFSO	ABEE	CAD INTERFACE UNIT (COIU)	17,364	22	291	119,774	789.3	59.7	.145
OASFSO	ABEF	COMMON CORE REMOTE TERMINAL	9,234	5	795	132,957	1,846.7	11.6	.069
OASFSO	ACAB	MISSILE INTERFACE UNITS	23,597	125	1,561	671,050	188.8	15.1	.035
OASFSO	ADBA	CONTROLS & DISPLAYS TEST SET	5,844	18	181	47,405	324.7	32.3	.123
OASFSO	ADBT	OTHER FSIE	30,438	199	1,425	535,568	153.0	21.4	.057
OASCHI	CAAA	AH/ASH-479 MOD KIT	105,359	308	3,887	1,013,353	344.3	27.1	.104
OASCHI	CAAC	479 TEST ADAPTER GROUP 1	2,919	22	146	54,791	132.7	20.0	.053
OASCHI	CAAE	479 TEST ADAPTER GROUP 3	1,673	23	134	52,641	72.7	12.5	.032
OASCHI	CAAF	479 TEST ADAPTER GROUP 4	1,212	11	63	35,530	110.2	19.2	.034
OASCHI	CAAG	479 TEST ADAPTER GROUP 5	2,088	19	104	43,291	109.9	20.1	.048
OASCHI	CAAH	479 TEST ADAPTER GROUP 6	2,082	25	132	48,340	83.3	15.8	.043
OASCHI	CACD	WEAPONS PRELOAD TESTER	36,251	84	567	225,803	431.6	63.9	.161
OASCHI	CACE	SYSTEMS AVIONICS TESTER	65,720	404	1,515	993,531	162.7	43.4	.066
OASCHI	CACF	STRAY VOLTAGE TESTER	4,251	48	136	89,854	88.6	31.3	.047
OASCHI	CACH	SAFE STATE TESTER	26,022	166	697	377,273	156.8	37.3	.069
SRFSO	AAAB	ANTENNA ELECTRONICS UNIT	33,172	78	1,274	406,632	425.3	26.0	.082
SRFSO	AAAC	TERRAIN DISPLAY CONT PANEL	1,114	9	34	11,501	123.8	32.8	.097
SRFSO	AAAD	KADAR CONTROL/TEST PANEL	7,508	51	378	118,371	147.2	19.9	.063
SRFSO	AAAH	RADAR INTERFACE UNIT MOD	3,799	12	277	64,328	316.6	13.7	.059
SRFSO	AACG	OTHER SITE	20,936	82	527	216,920	255.3	39.7	.097
SRFSO	CAD	AH/ASH 479 TEST SET MOD	6,241	46	148	76,483	135.7	42.2	.082
SRFSO	CAE	TEST SET GROUP 5 MOD	679	5	21	3,553	135.8	32.3	.191
SRFSO	CAF	TEST SET GROUP 10 MOD	5,204	26	67	47,405	200.2	77.7	.110
SRFSO	CAG	TEST SET GROUP 11 MOD	2,926	15	39	21,599	195.1	75.0	.135
KCRUNIT1	CA	PECULIAR SUPPORT EQUIPMENT	5,045	34	248	170,451	148.4	20.3	.030

D500-10583-1

IN SUMMARY - -

THE BMAC ESTIMATING SYSTEM HAS BEEN ESTABLISHED TO ASSURE THAT COST & PRICING DATA SUBMITTED TO THE CUSTOMER IS ACCURATE, COMPLETE, AND CURRENT. IT IS THE RESPONSIBILITY OF ALL BMAC EMPLOYEES TO PERFORM THE APPROPRIATE STEPS, MEASURES, AND ACTIVITIES TO ASSURE COMPLIANCE WITH RELATED LAWS, REGULATIONS, AND POLICIES.

SUPPORT BY THE MANAGEMENT OF ALL AFFECTED FUNCTIONAL ORGANIZATIONS SUCH AS ENGINEERING IS REQUIRED FOR THIS SYSTEM TO BE OPERATIONALLY EFFECTIVE.