



Acquisition Research Program:
Creating Synergy for Informed Change

Analysis of Contractor Logistics Support for the P-8 Poseidon Aircraft

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Naval Postgraduate School

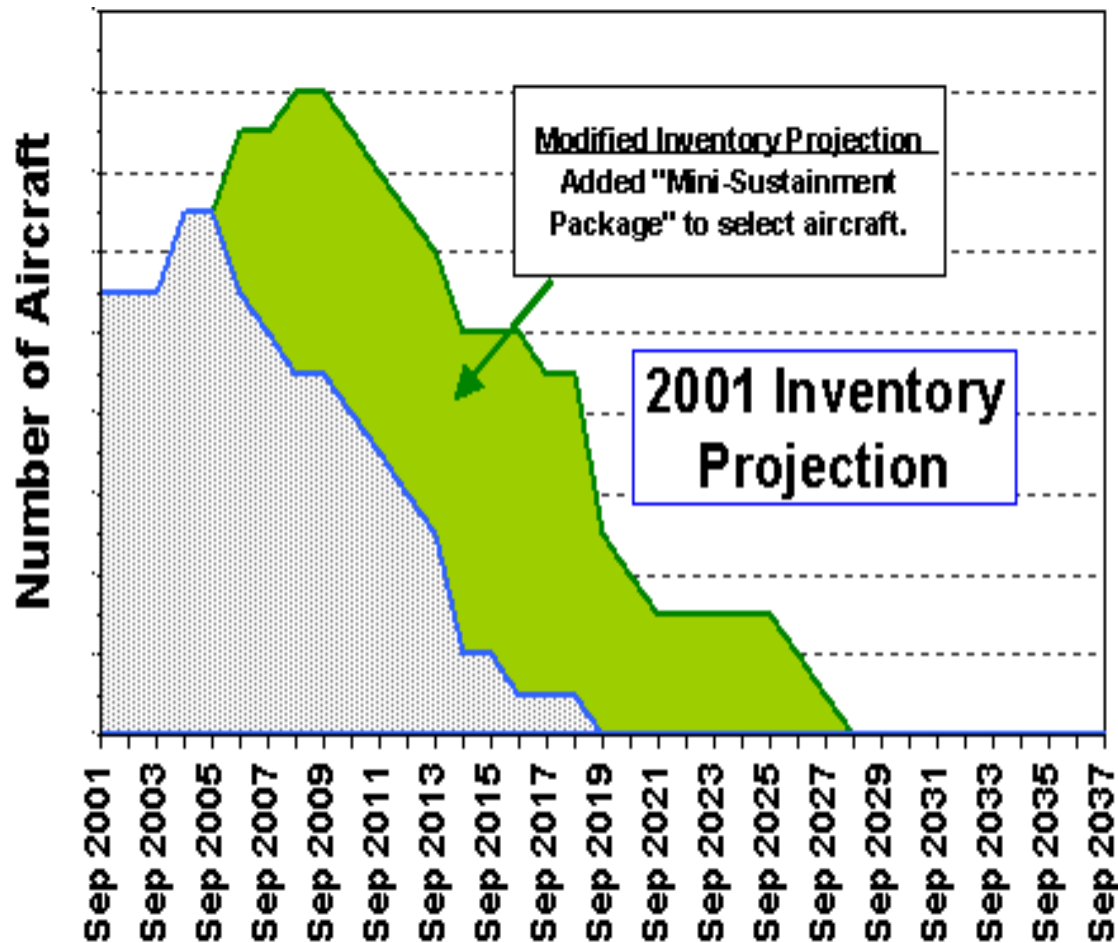
Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE MAY 2008		2. REPORT TYPE		3. DATES COVERED 00-00-2008 to 00-00-2008	
4. TITLE AND SUBTITLE Analysis of Contractor Logistics Support for the P-8 Poseidon Aircraft				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School,Monterey,CA,93943				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES 5th Annual Acquisition Research Symposium: Creating Synergy for Informed Change, May 14-15, 2008 in Monterey, CA					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 34	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Agenda

- Background of the P-8 Program
- Thesis Problem (Logistics Support for the P-8)
- Cost as an Independent Variable (CAIV)
- Maintenance Perspective
- Operational Impacts
- Conclusions



Background: *The Navy's P-3C Problem*



The end of service life of the P-3C Orion was quickly approaching with no replacement identified



Source: Technical Data Analysis, Inc. Web Site. 28 May 2007

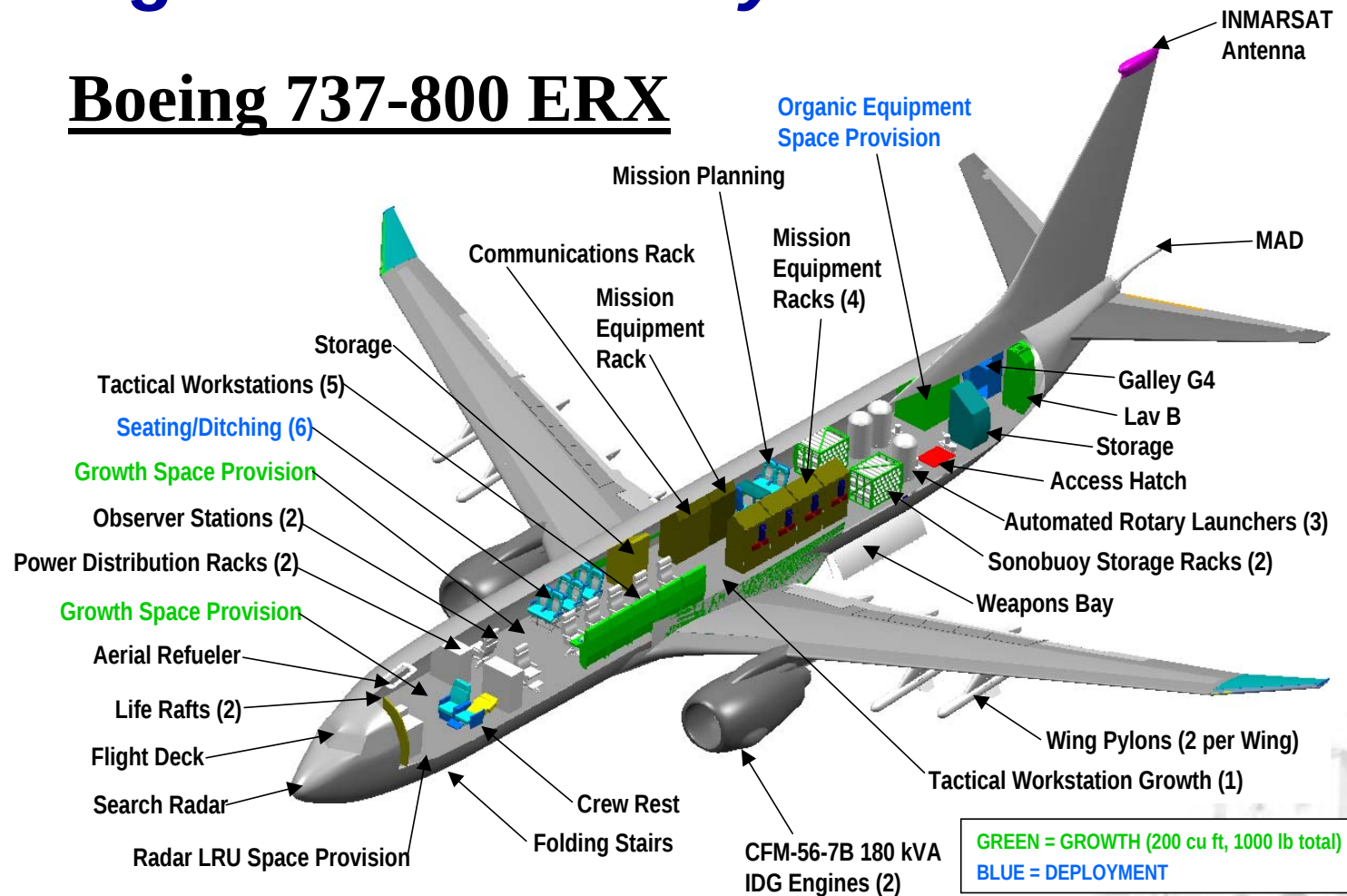


Acquisition Research Program: Creating Synergy for Informed Change

Naval Postgraduate School
Monterey, CA

Background: *The Navy's Solution – P-8A*

Boeing 737-800 ERX

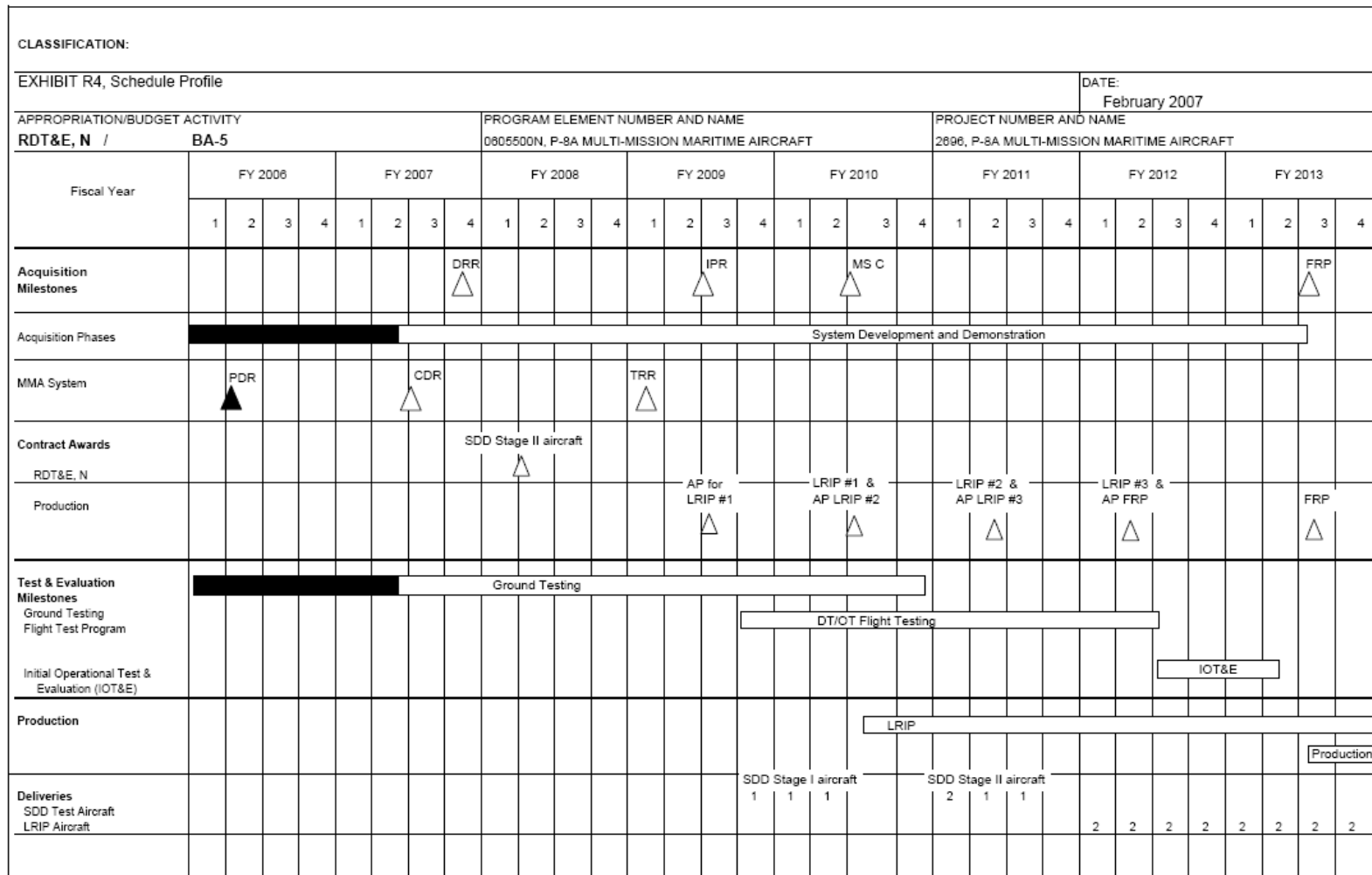


GREEN = GROWTH (200 cu ft, 1000 lb total)
BLUE = DEPLOYMENT

Source: [Official NAVAIR MMA Web Site](#). 11 May 2007.



Background: *Where is the program today?*

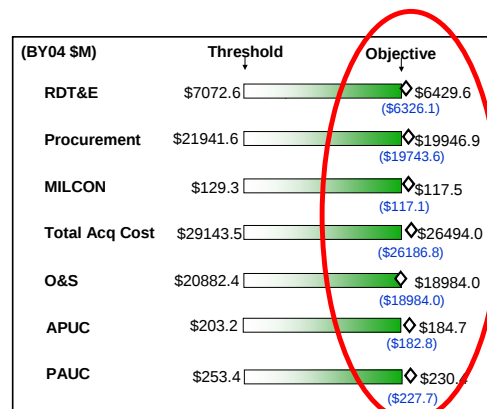
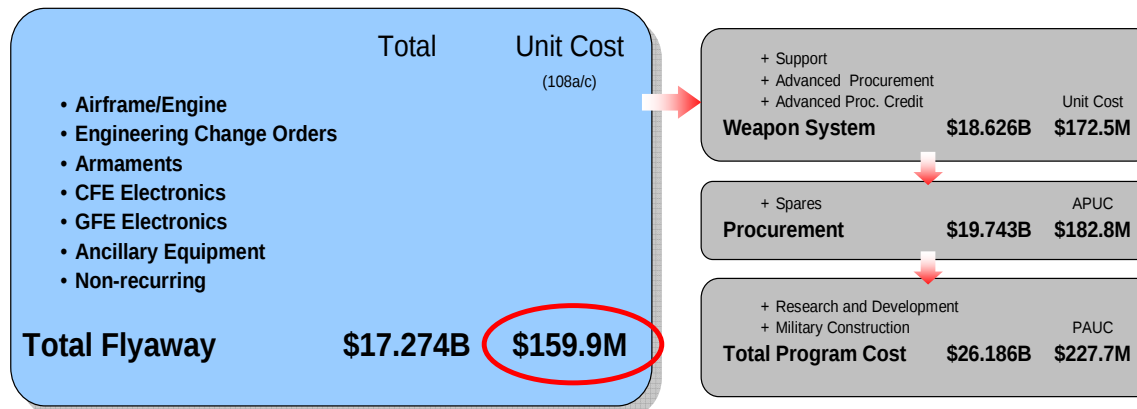


Source: Office of Undersecretary of Defense (Comptroller) Web Site. 28 May 2007



Background: *On Time & On Budget*

MMA Program Costs PB-06 (Constant 04\$)



**Meeting or
exceeding ALL
cost objectives**

Source: Official NAVAIR MMA Web Site. 11 May 2007.



Remaining Decision: *Logistic Support*

1. Have the OEM provide complete CLS for the life cycle of the P-8?
 - Boeing's estimated costs increased 400% by 2007
2. Continue with a traditional organic maintenance organization with Navy personnel?
 - Decision must be made soon. Cannot grow manpower over night
3. Is a hybrid combination of organic personnel with some CLS support a feasible option?

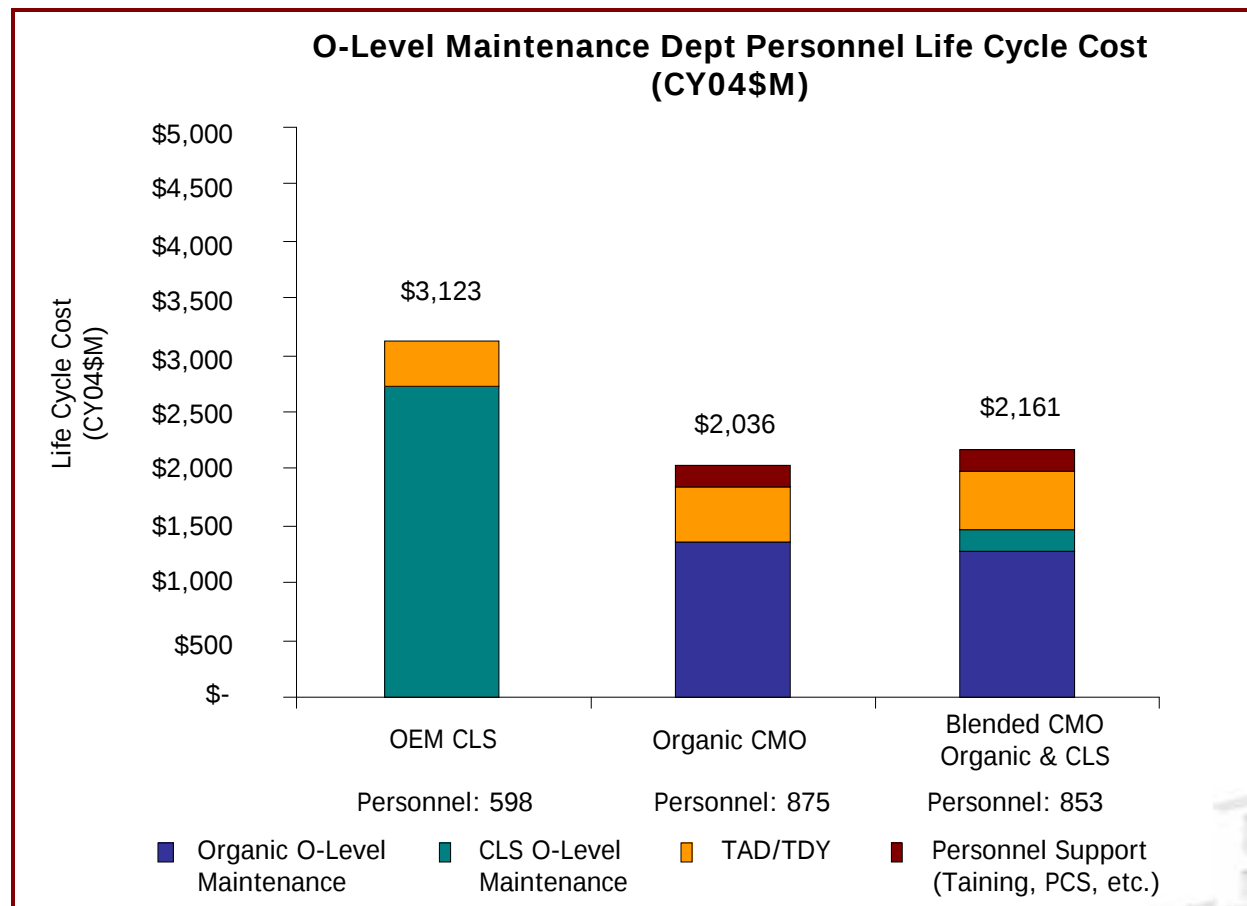


Thesis Problem

- Analyze the benefits and limitations of:
 - OEM-CLS
 - Traditional organic logistic support
 - Blended organic/CLS hybrid organization
- Areas for comparison
 - Cost as an Independent Variable (CAIV)
 - Maintenance perspective
 - Operational impacts
- Goal
 - Make a recommendation to NAVAIR of “**Best Value**” for the P-8 logistics plan



P-8 Maintenance: Cost Comparison



Source: [P-8A Maintenance Manpower Analysis Power Point](#). November 2007.



P-8 Maintenance: *What is a CMO?*

- Consolidated Maintenance Organization
 - All maintenance personnel removed from several collocated squadrons and placed into one command
- Concept currently being employed by P-3C community
- P-8 logistic acquisition based on CMO concept



CAIV: *Basis of Analysis*

- Analysis based on a combination of:
 - Personnel rates from the Office of the Deputy Secretary of the Navy, Manpower, Personnel, Training, Education (MPTE) (N10)
 - Given in FY09 dollars
 - Reduced to FY04 dollars at 3.0% per year
 - GAO Report 05-798
 - Figures in FY04 dollars
- Assumptions:
 - Numbers based on initial 885 personnel organic requirement
 - All totals are in constant FY04 dollars



CAIV: What is the real cost of a Sailor?

Rates Include:

- Base Pay
- Basic Allowance for Housing
- Basic Allowance for Subsistence
- Retired Pay Accrual
- FICA
- Uniform Allowance (Enlisted)
- Unemployment Insurance

Rates Do Not Include:

- Education Benefits
- PCS
- ROTC/JROTC
- Special & Incentive Pay
- Reimbursables
- Separation Payments
- Healthcare Accrual

N10 - Manpower, Personnel, Training and Education (MPTE)

Grade	FY09	FY04
O-5	150,079	127,567
O-4	129,133	109,763
O-3	106,585	90,598
O-2	87,255	74,167
O-1	67,684	57,531
W-5	144,773	123,057
W-4	130,050	110,543
W-3	112,480	95,608
W-2	97,855	83,177
E9	115,928	98,539
E8	96,355	81,901
E7	85,530	72,700
E6	71,837	61,062
E5	58,815	49,993
E4	46,095	39,181
E3	36,383	30,926



CAIV: N10 Costs Based on 885 Estimate (Officer)

OFFICER	CDR	LCDR	LT	LTJG	ENS	CWO4	CWO3	TOTAL
Maint (MO)	2							2
Maint (AMO)		6						6
Maint (MCO)			6	1				7
Maint (MMCO)			2	3				5
Maint (DIV O's)+A19			2	4	8			14
Maint (WEPS)						5	1	6
TOTAL	2	6	10	8	8	5	1	40
COST PER PERSON	\$127,567	\$109,763	\$ 90,597	\$ 74,167	\$ 57,531	\$110,543	\$ 95,608	
TOTAL COST	\$255,134	\$658,578	\$ 905,970	\$ 593,336	\$460,248	\$552,715	\$ 95,608	\$3,521,589



CAIV: N10 Costs Based on 885 Estimate (Enlisted)

ENLISTED	E9	E8	E7	E6	E5	E4	E3	TOTAL
Maint. (020) (CPO)	6	12	26					44
Maint. (020) (AZ)				6	8	11	13	38
Maint. (030)					6		6	12
Maint. (040)		6		72	6	1	6	91
Maint. (05C/D)					1	1	1	3
Maint. (Div. CPO's)		15	2					17
Maint. (110)			4	9	18	24	33	88
Maint. (120)		2	5	15	28	39	56	145
Maint. (12C)				6		8	7	21
Maint. (13A)				5	9	13	17	44
Maint. (13B)				4	6	8	9	27
Maint. (140)				8	4			12
Maint. (210)			4	8	16	23	29	80
Maint. (220)			3	5	13	16	18	55
Maint. (310)		2	7	15	28	36	80	168
TOTAL	6	37	51	153	143	180	275	845
RANK COST	\$ 98,539	\$ 81,902	\$ 72,701	\$ 61,061	\$ 49,993	\$ 39,181	\$ 30,826	
TOTAL COST	\$591,234	\$3,030,374	\$3,707,751	\$9,342,333	\$7,148,999	\$7,052,580	\$ 8,477,150	\$39,350,421

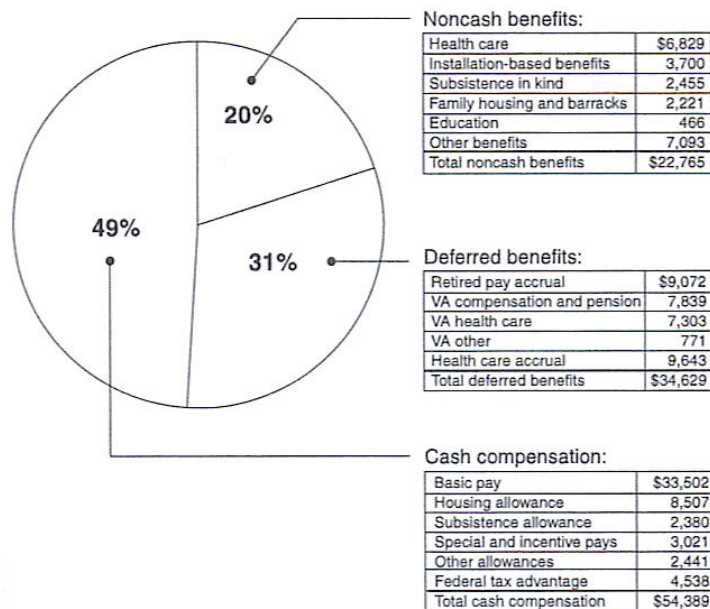


CAIV: GAO Report Applied Figures

(Included N10 Costs Subtracted Out)

Figure 2: The Allocation of Cash, Noncash, and Deferred Compensation Costs per Active Duty Servicemember in Fiscal Year 2004

Total cost to provide compensation was about \$112,000 per active duty member—benefits made up about 51 percent of this cost.



Source: GAO analysis.

Note: Over 100,000 mobilized reservists were paid out of total cash compensation. Accounting for those reservists, the average cash compensation was about \$49,000 per servicemember. These costs reflect the average costs to the government to provide these components of compensation. For example, all servicemembers do not receive a cash housing allowance, because some servicemembers live on base in family housing or barracks. The cost presented represents the total amount appropriated for housing allowances divided by the number of servicemembers, thus, an average cost to the government.

NON-CASH BENEFITS	AVG COST
Health Care	6,829
Installation-Based Benefits	3,700
Family Housing and Barracks	2,221
Education	466
Other Benefits	7,093
Total:	20,309
DEFERRED BENEFITS	
VA Compensation & Pension	7,839
VA Health Care	7,303
VA Other	771
Health Care Accrual	9,643
Total:	25,556
CASH COMPENSATION	
Special and Incentive Pays	3,021
Other Allowances	2,441
Federal Tax Advantage	4,538
Total:	10,000
Total GAO Compensation Per Person	55,865

CAIV: Total Life Cycle Costs (Organic)

OFFICER	O5	O4	O3	O2	O1	CW04	CW03
MPTE (N10) COST	\$ 127,567	\$ 109,763	\$ 90,597	\$ 74,167	\$ 57,531	\$ 110,543	\$ 95,608
GAO COST (FY04)	\$ 55,865.00	\$ 55,865.00	\$ 55,865.00	\$ 55,865.00	\$ 55,865.00	\$ 55,865.00	\$ 55,865.00
TOTAL	\$ 183,432	\$ 165,628	\$ 146,462	\$ 130,032	\$ 113,396	\$ 166,408	\$ 151,473
TOTAL REQUIRED	2	6	10	8	8	5	1
TOTAL COST	\$ 366,864	\$ 993,768	\$ 1,464,620	\$ 1,040,256	\$ 907,168	\$ 832,040	\$ 151,473
LIFE CYCLE COST	\$ 9,171,600	\$ 24,844,200	\$ 36,615,500	\$ 26,006,400	\$ 22,679,200	\$ 20,801,000	\$ 3,786,825

ENLISTED	E9	E8	E7	E6	E5	E4	E3
MPTE (N10) COST	\$ 98,539	\$ 81,902	\$ 72,701	\$ 61,061	\$ 49,993	\$ 39,181	\$ 30,826
GAO COST (FY04)	\$ 55,865.00	\$ 55,865.00	\$ 55,865.00	\$ 55,865.00	\$ 55,865.00	\$ 55,865.00	\$ 55,865.00
TOTAL	\$ 154,404	\$ 137,767	\$ 128,566	\$ 116,926	\$ 105,858	\$ 95,046	\$ 86,691
TOTAL REQUIRED	6	37	51	153	143	180	275
TOTAL COST	\$ 926,424	\$ 5,097,379	\$ 6,556,866	\$ 17,889,678	\$ 15,137,694	\$ 17,108,280	\$ 23,840,025
LIFECYCLE COST	\$ 23,160,600	\$127,434,475	\$163,921,650	\$447,241,950	\$378,442,350	\$427,707,000	\$596,000,625
OVERALL TOTAL	\$ 2,307,813,375						

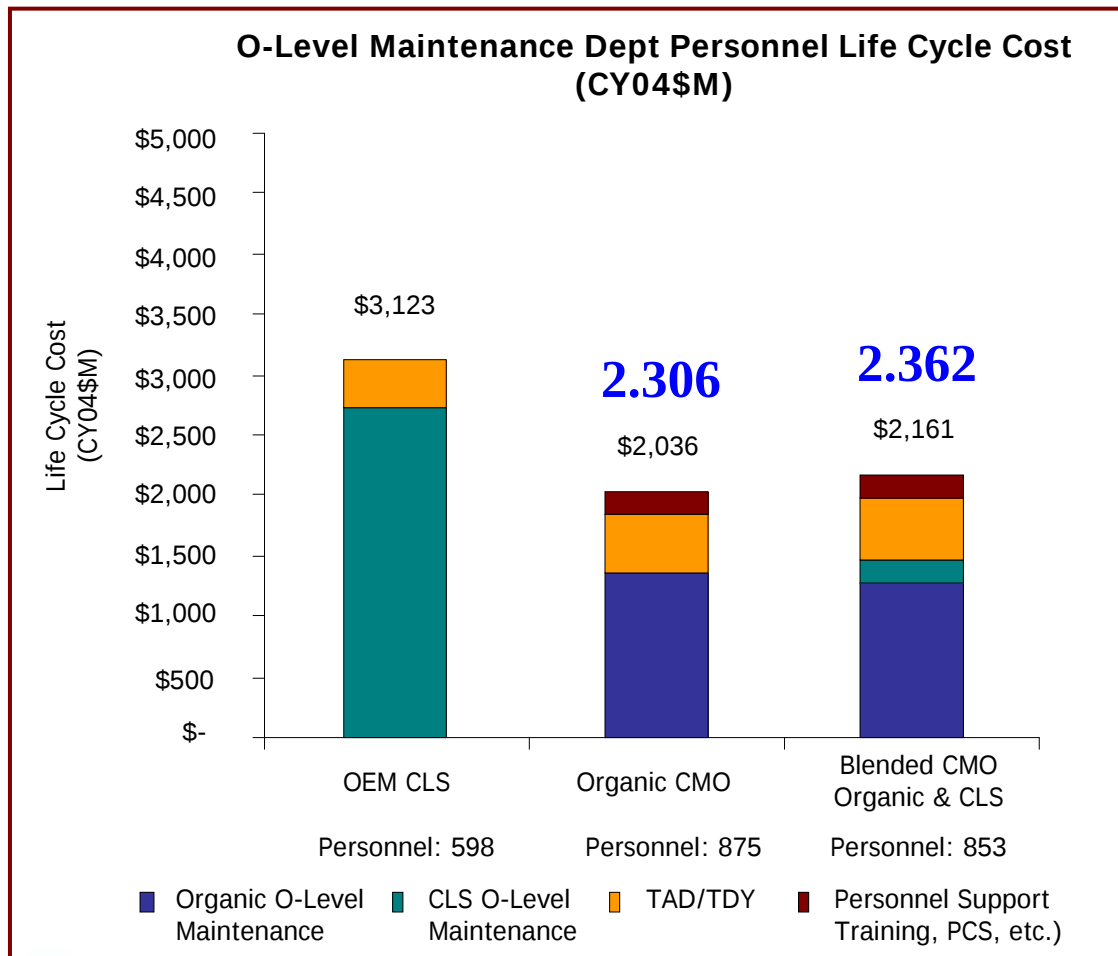


CAIV: Blended Organic/CLS Hybrid

- Based on current NAVAIR estimates, 802 organic Navy personnel and 51 CLS civilians
- Using previous methodology, organic costs are \$2.086B
- OEM-CLS portion are estimated to be \$276M
 - Subtracted NAVAIR flat rate of 94k/person from \$2.161B blended option estimate
- Total Life Cycle Cost: **\$2.362B**



CAIV: Manpower Conclusions



- NAVAIR estimates are valid for organic and blended CMOs
- Organic CMO is the least costly to NAVAIR

Source: P-8A Maintenance Manpower Analysis Power Point. November 2007.



CAIV: Something is Missing

- Totals do not include shore duty personnel required to support operational CMO (i.e., training pipeline & shore rotation billets)
 - 5/3 ratio required for E1-E6 personnel
 - 3/2 ratio required for E7-E9 personnel
- OEM-CLS provider does not have this obligation



CAIV: Costs Including Shore Billets

Using previous methodology

- Organic CMO pipeline costs
= \$ 1.320B

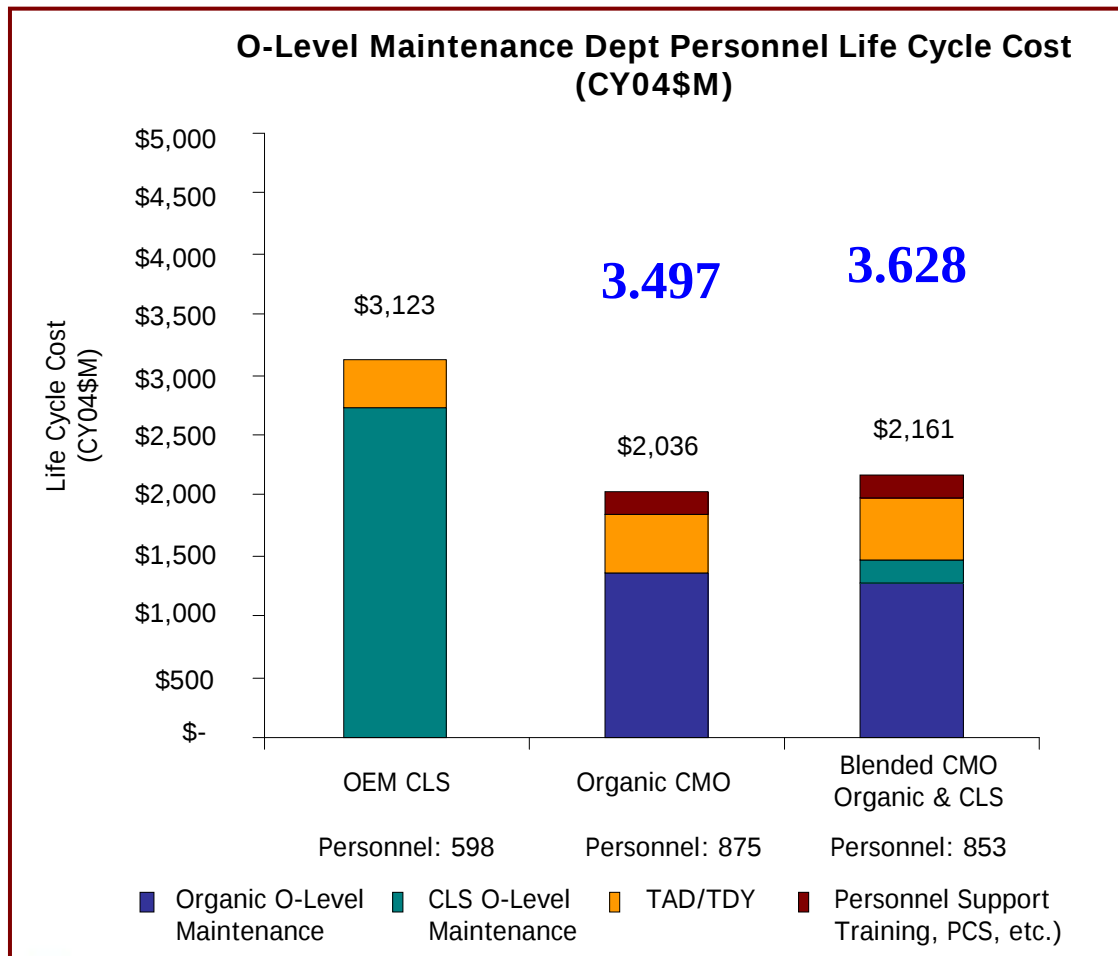
Total cost = **\$3.497B**

- Blended pipeline costs
= \$1.134B

Total cost = **\$3.628B**



CAIV: Conclusions with Shore Billets



- The OEM-CLS option is the least costly to the Navy
- Recommend further study into true costs and impacts of training and shore billets

Source: P-8A Maintenance Manpower Analysis Power Point. November 2007.



Operations & Maintenance: *Methodology*

- Interviewed P-3C, operational “experts”
 - COs, former COs
 - All had combat experience
 - All had experience with direct civilian support
- Interviewed Air Force and Navy “experts” in CLS aviation contracting
 - VR squadrons (MOs/MMCOs)
 - Executive transport squadrons



Maintenance: *Governing Documents*

- Naval Aviation Maintenance Program (NAMP)
 - OEM-CLS still governed by NAMP
- Continued Airworthiness Maintenance Plan (CAMP)
 - Allows for commercial common part exchange with civil aviation
 - FAA certification of parts with A&P mechanics
 - Allows P-8 to utilize existing 737 logistic pipelines and reduce life cycle costs



Maintenance: “Above and Beyond” Costs

Costs not considered by previous CLS contracts (i.e., VR squadrons going to Afghanistan):

- Per Diem
- Rental cars
- Overtime salary
- Training
 - Chemical, Biological and Radiological (CBR)
 - Weapons
 - Combat
- Visas
- Deployment premiums
- Hazardous premiums
- Insurance
- Passports
- Immunizations



Maintenance: *Organic, CLS or Hybrid?*

Consensus of the interviewed experts:

- Those squadrons with CLS support are meeting or exceeding expectations
- All believe CLS is viable in combat squadron
- Hybrid organization provides the most flexibility and technical expertise
 - CAMP and NAMP requirements can be met and benefits reaped



Operational Impacts

- PBL contracts by definition ensure compliance with operational objectives
 - Assuming the right metrics are specified in the contract!
- How do you quantify intangible differences between logistic options?



Operations: *Biggest Concern - CMO*

Consolidated Maintenance Organization (CMO)

- Not enough time to prove itself
- Questions about efficiency at home
- Diametrically opposed missions
- Smaller footprint – can it meet objectives
- Intangibles
 - Pride in ownership
 - Esprit de corps / morale
 - Safety
 - Communication challenges between aircrew and maintenance



Operations: *CMO Conclusions*

- Most problems are leadership challenges that can be overcome
 - Morale, safety, pride in ownership, etc.
- Questions remaining are of valid concern
 - Is a CMO more efficient than traditional organization?
 - Can a CMO meet objectives with fewer personnel?
- Recommend NAVAIR sponsors further research to determine best course for P-8
(CMO or traditional maintenance structure)



Operations: *CLS Pros*

- Virtually unanimous opinions
 - Every “expert” had positive past experiences
- All liked the technical expertise CLS provided



Operations: *CLS Cons*

- Concerns with intangibles
 - Pride in ownership
 - Esprit de corps / morale
 - Safety
 - Communication challenges between aircrew and maintenance
- Would a total CLS organization have the flexibility to surge or rapidly deploy?
- Could a CLS organization meet multiple operational requirements?
- What happens in a combat situation – would the CO have authority over civilians?



Operations: *CLS Solution to the Cons*

Consensus of the interviewed experts:

- Write the contract with enough **specificity**
- Write the contract with the proper **metrics** of performance
- Write the contract with the proper **incentives**

***** All tenets of Performance Based Logistics *****



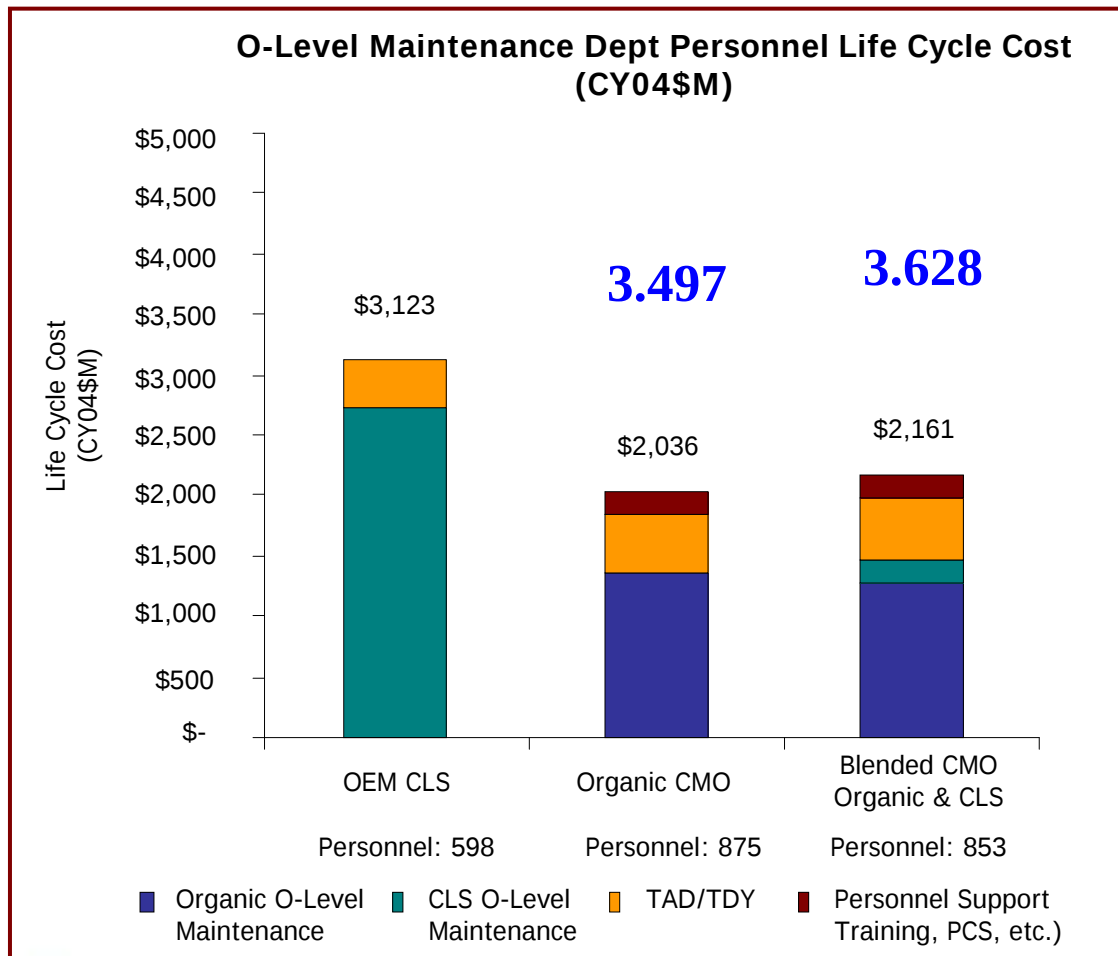
Operations: *Organic, CLS or Hybrid?*

Unanimous consensus:

- Blended CLS/organic organization provides:
 - Enough organic personnel for flexibility
 - Civilian expertise



Conclusion: *Organic, CLS or Hybrid?*



Source: P-8A Maintenance Manpower Analysis Power Point. November 2007.

The blended organic/CLS option provides the best value for the P-8

- Virtually same cost
- Greater flexibility
- Captures existing 737 pipeline benefits
- Captures technical expertise and continuity of CLS



Questions?

