Acquisition Research Program:
Creating Synergy for Informed Change

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

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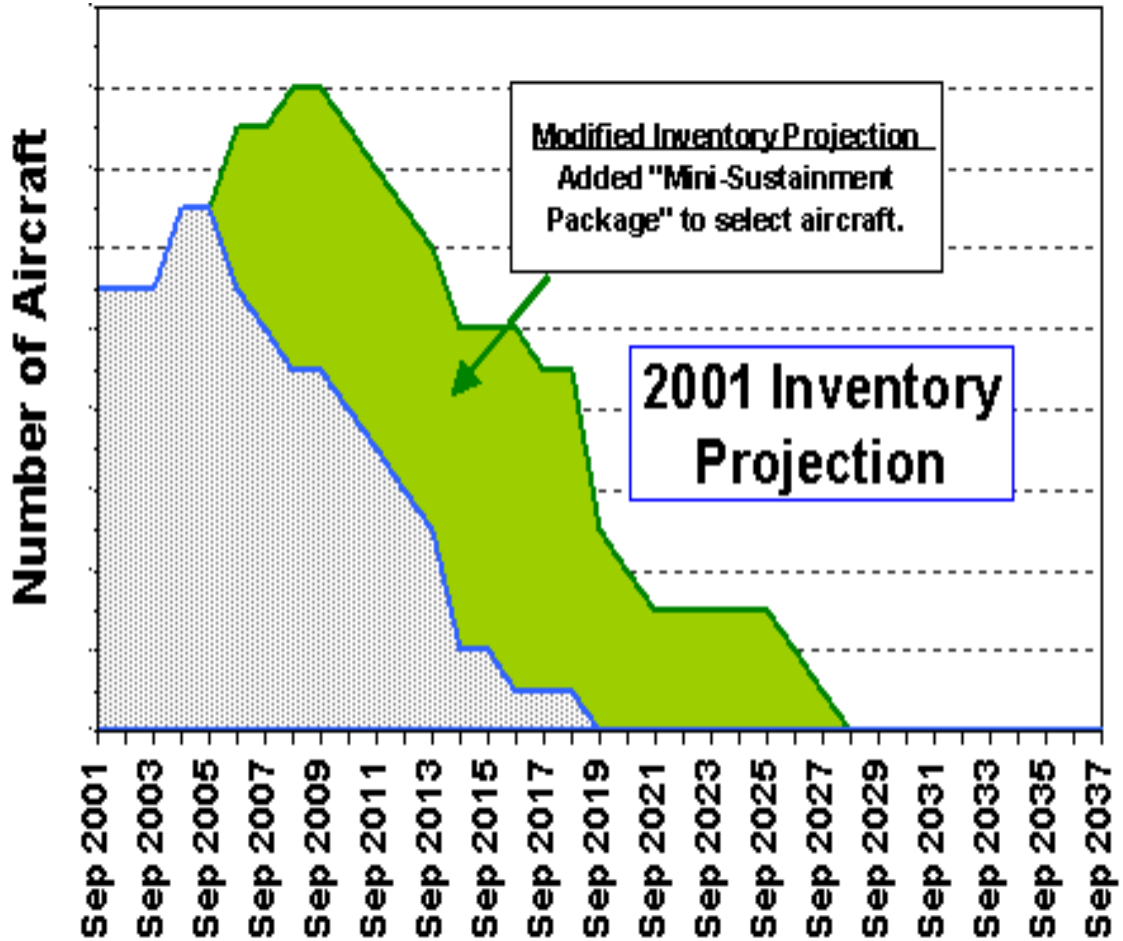
Agenda

- 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*

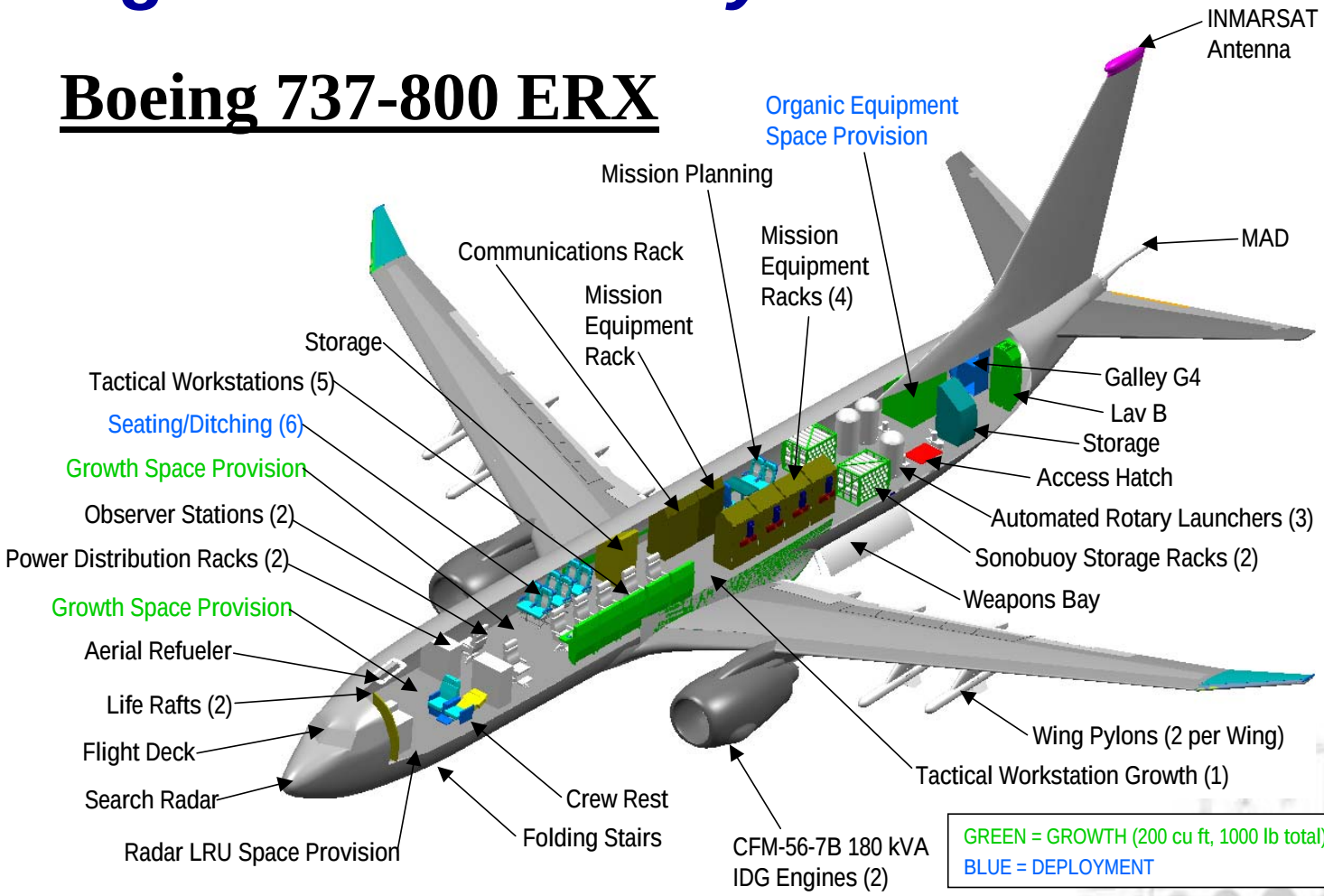


The end of service life of the P-3C Orion was quickly approaching with no replacement identified

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

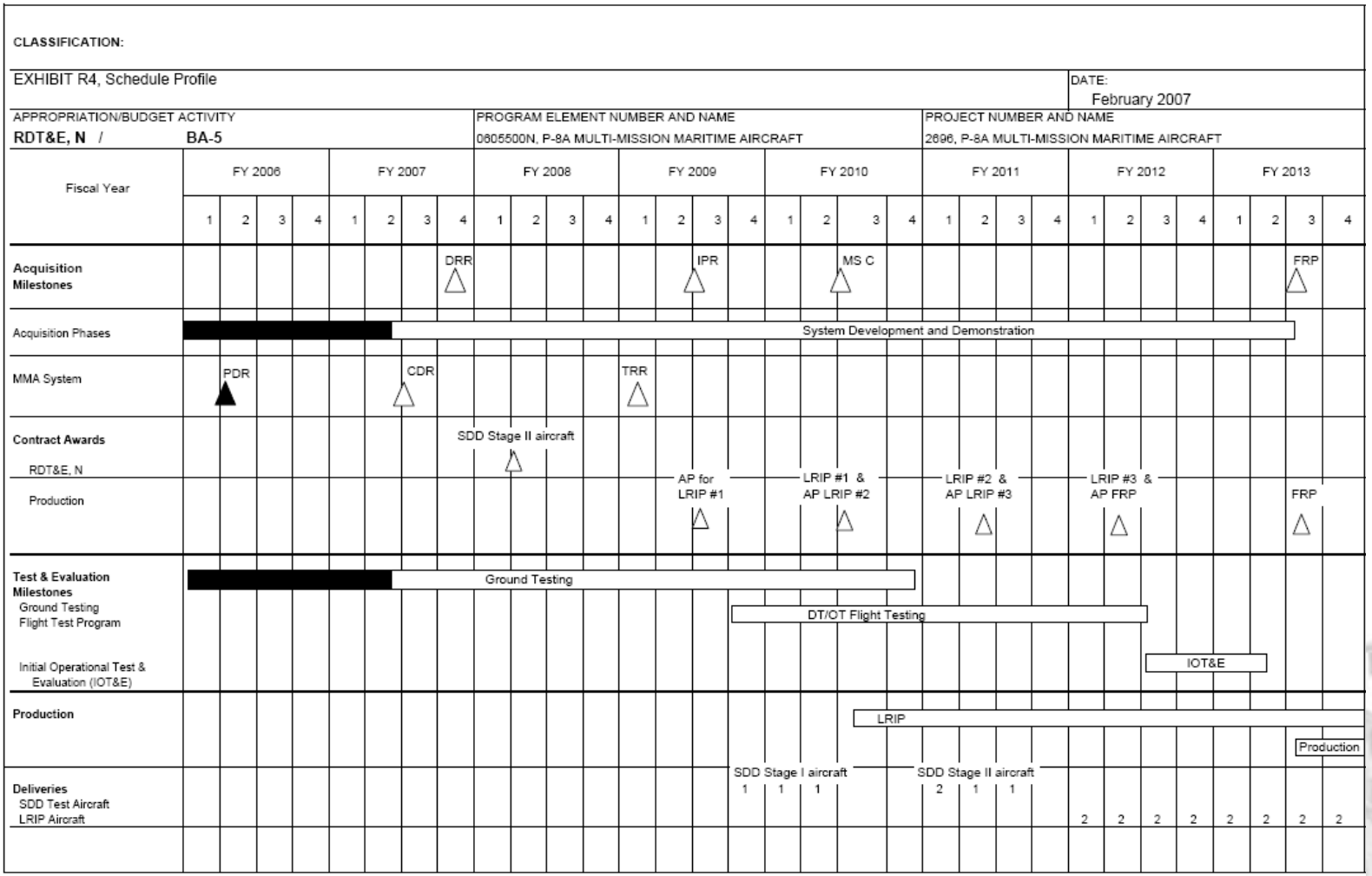
Background: *The Navy's Solution – P-8A*

Boeing 737-800 ERX



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

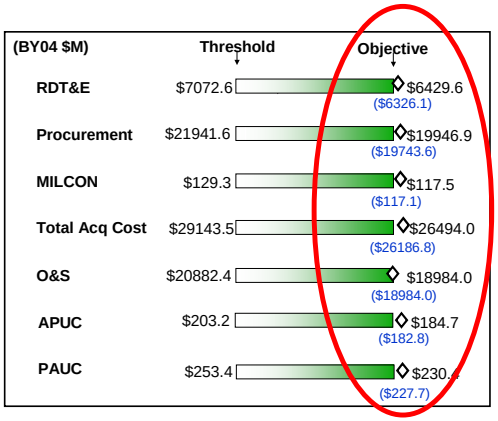
Background: *On Time & On Budget*

MMA Program Costs

PB-06 (Constant 04$)

	Total	Unit Cost (108a/c)
• Airframe/Engine • Engineering Change Orders • Armaments • CFE Electronics • GFE Electronics • Ancillary Equipment • Non-recurring		
Total Flyaway	**$17.274B**	**$159.9M**

+ Support + Advanced Procurement + Advanced Proc. Credit **Weapon System**	**$18.626B**	Unit Cost **$172.5M**
+ Spares **Procurement**	**$19.743B**	APUC **$182.8M**
+ Research and Development + Military Construction **Total Program Cost**	**$26.186B**	PAUC **$227.7M**



Meeting or exceeding ALL cost objectives

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

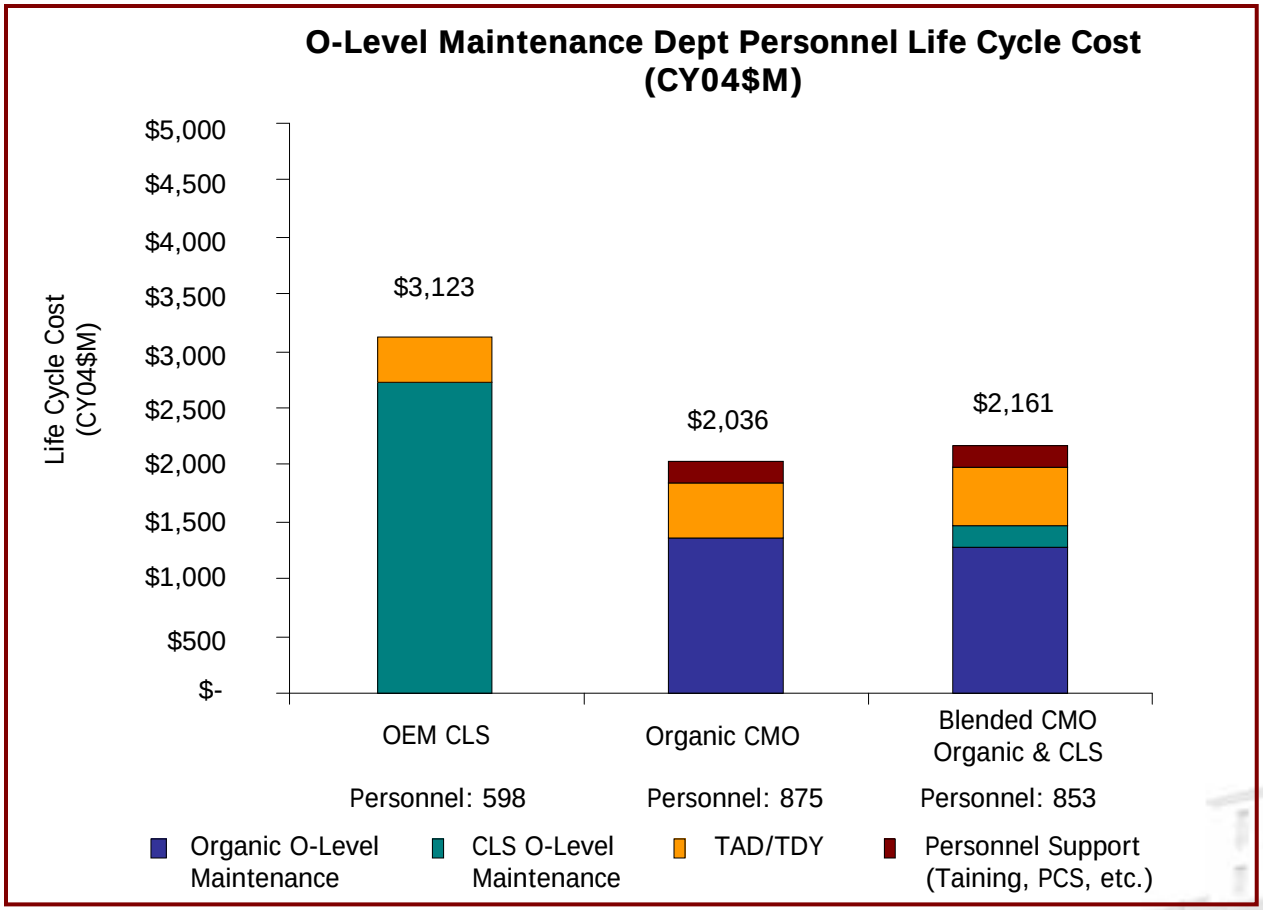
Remaining Decision: *Logistic Support*

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)

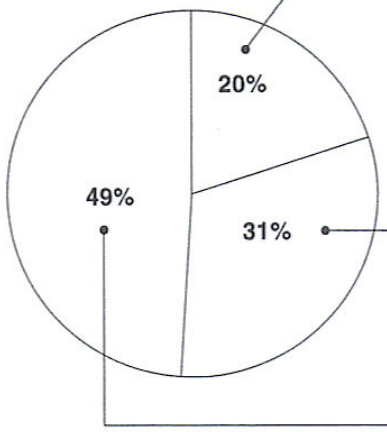
ENLISTED	E9	E8	E7	E6	E5	E4	E3	TOTAL
Maint. (020) (CPO)	6	12	26					44
Maint. (020) (AZ)				6	8	11	13	38
Maint. (030)					6		6	12
Maint. (040)		6		72	6	1	6	91
Maint. (05C/D)					1	1	1	3
Maint. (Div. CPO's)		15	2					17
Maint. (110)			4	9	18	24	33	88
Maint. (120)		2	5	15	28	39	56	145
Maint. (12C)				6		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.



Noncash benefits:

Health care	$6,829
Installation-based benefits	3,700
Subsistence in kind	2,455
Family housing and barracks	2,221
Education	466
Other benefits	7,093
Total noncash benefits	$22,765

Deferred benefits:

Retired pay accrual	$9,072
VA compensation and pension	7,839
VA health care	7,303
VA other	771
Health care accrual	9,643
Total deferred benefits	$34,629

Cash compensation:

Basic pay	$33,502
Housing allowance	8,507
Subsistence allowance	2,380
Special and incentive pays	3,021
Other allowances	2,441
Federal tax advantage	4,538
Total cash compensation	$54,389

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)*

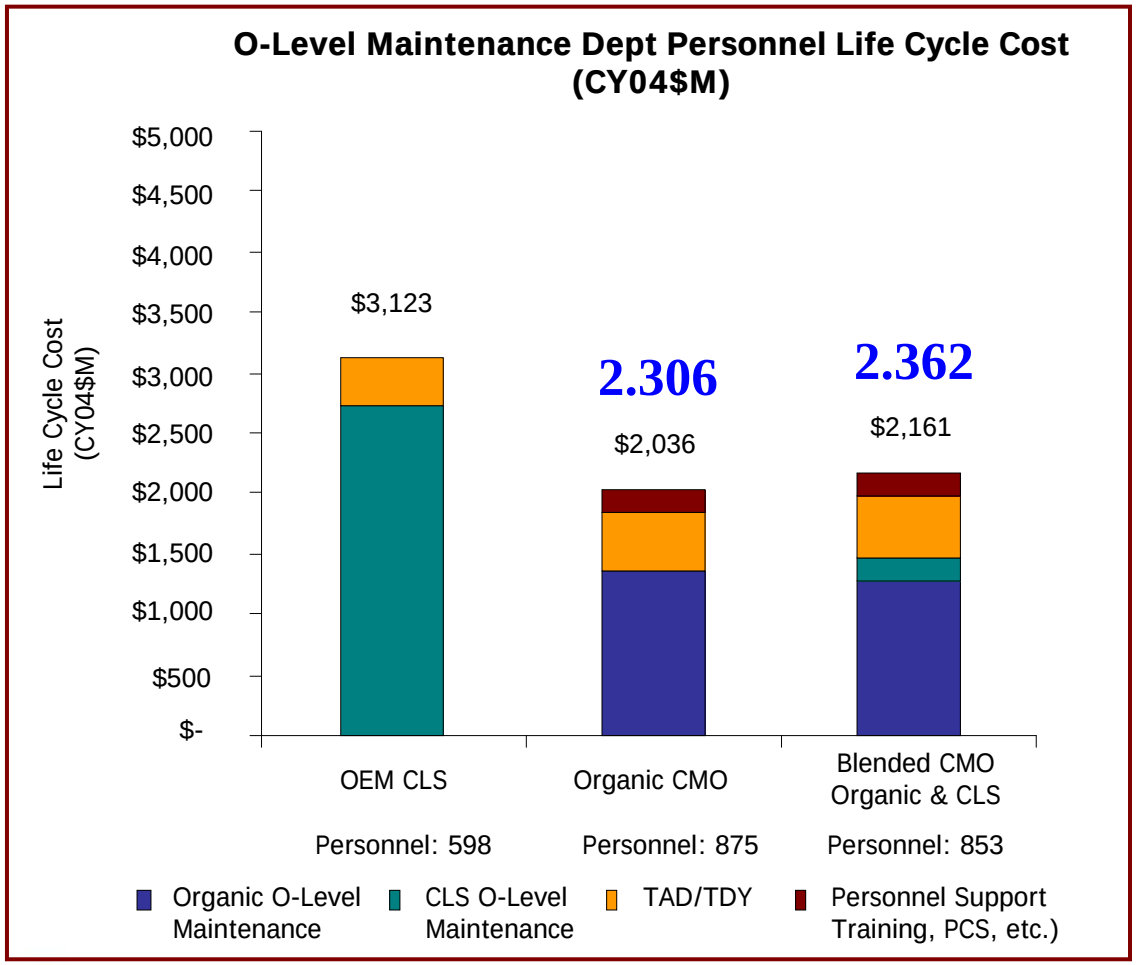
OFFICER	O5	O4	O3	O2	O1	CW04	CW03
MPTE (N10) COST	$ 127,567	$ 109,763	$ 90,597	$ 74,167	$ 57,531	$ 110,543	$ 95,608
GAO COST (FY04)	$ 55,865.00	$ 55,865.00	$ 55,865.00	$ 55,865.00	$ 55,865.00	$ 55,865.00	$ 55,865.00
TOTAL	$ 183,432	$ 165,628	$ 146,462	$ 130,032	$ 113,396	$ 166,408	$ 151,473
TOTAL REQUIRED	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

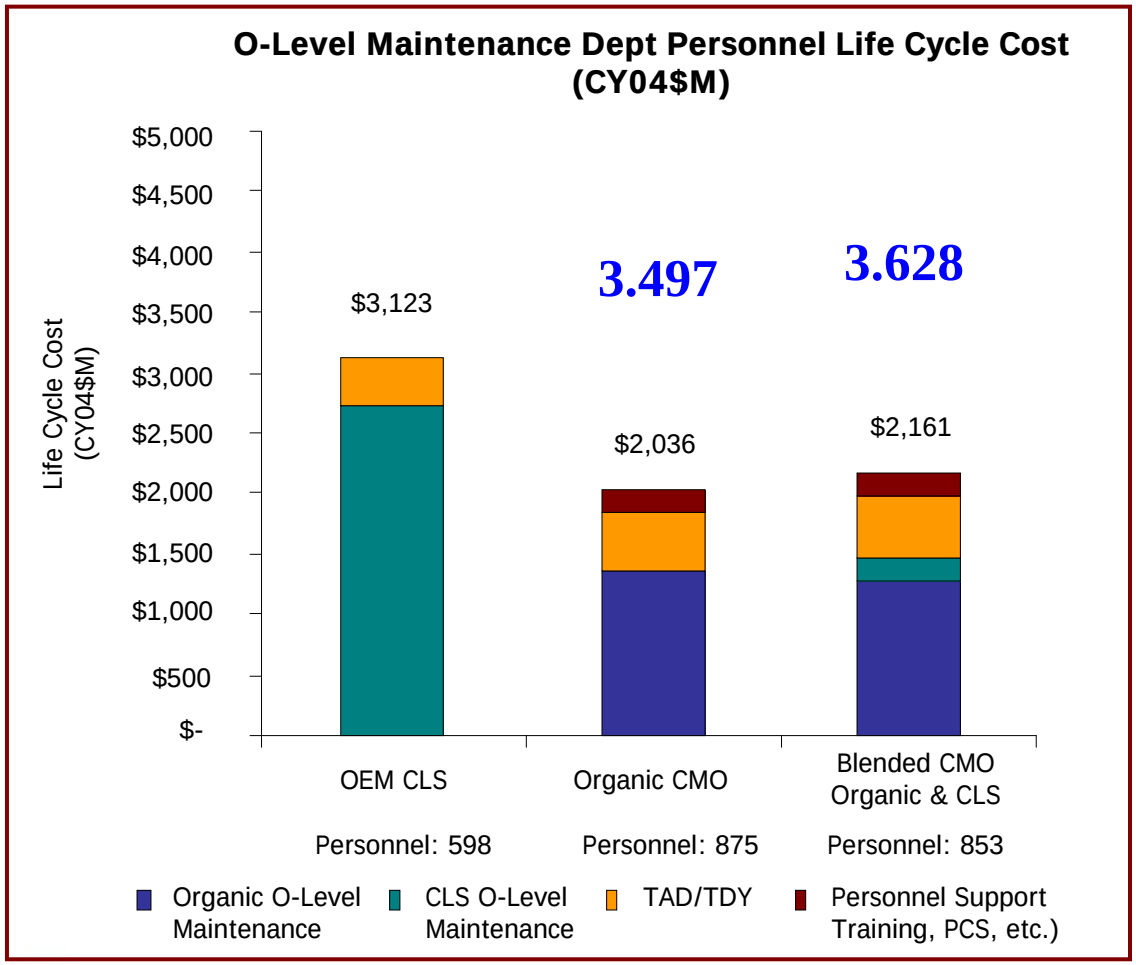
- Organic CMO pipeline costs
  = $ 1.320B

  Total cost = **$3.497B**

- Blended pipeline costs
  = $1.134B

  Total cost = **$3.628B**

CAIV: *Conclusions with Shore Billets*



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

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

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**

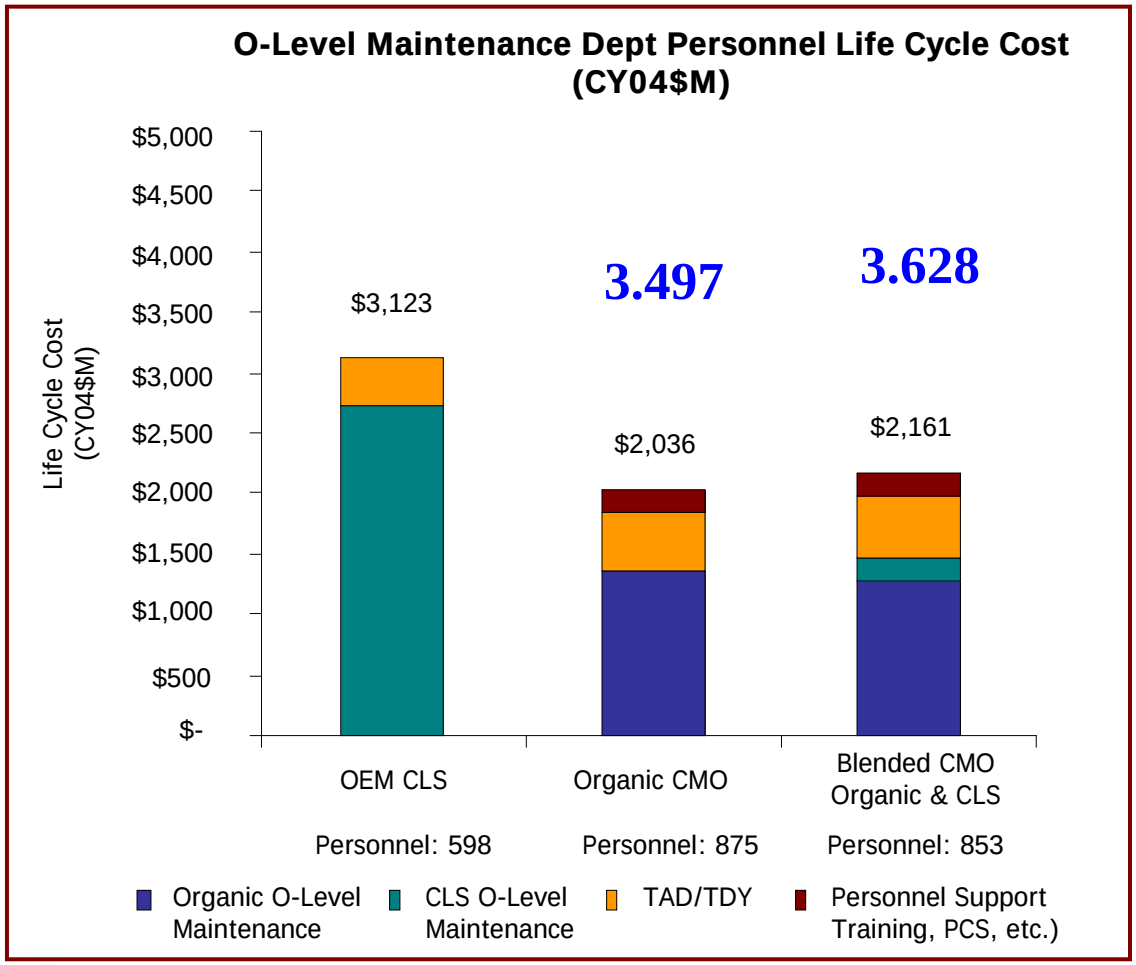
***** All tenets of Performance Based Logistics *****

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?