

NAVICP's PBL Perspective

Integrating and Balancing Organic and Commercial Maintenance Support

- *Why PBL Works*
- *PBL at NAVICP*
- *PBL Partnerships*
 - *APU*
 - *F404*
 - *ALQ-126B*
 - *Other samples*
- *Yesterday and Today*
- *Lessons Learned*
- *Take Aways*


Ready. Resourceful. Responsive!



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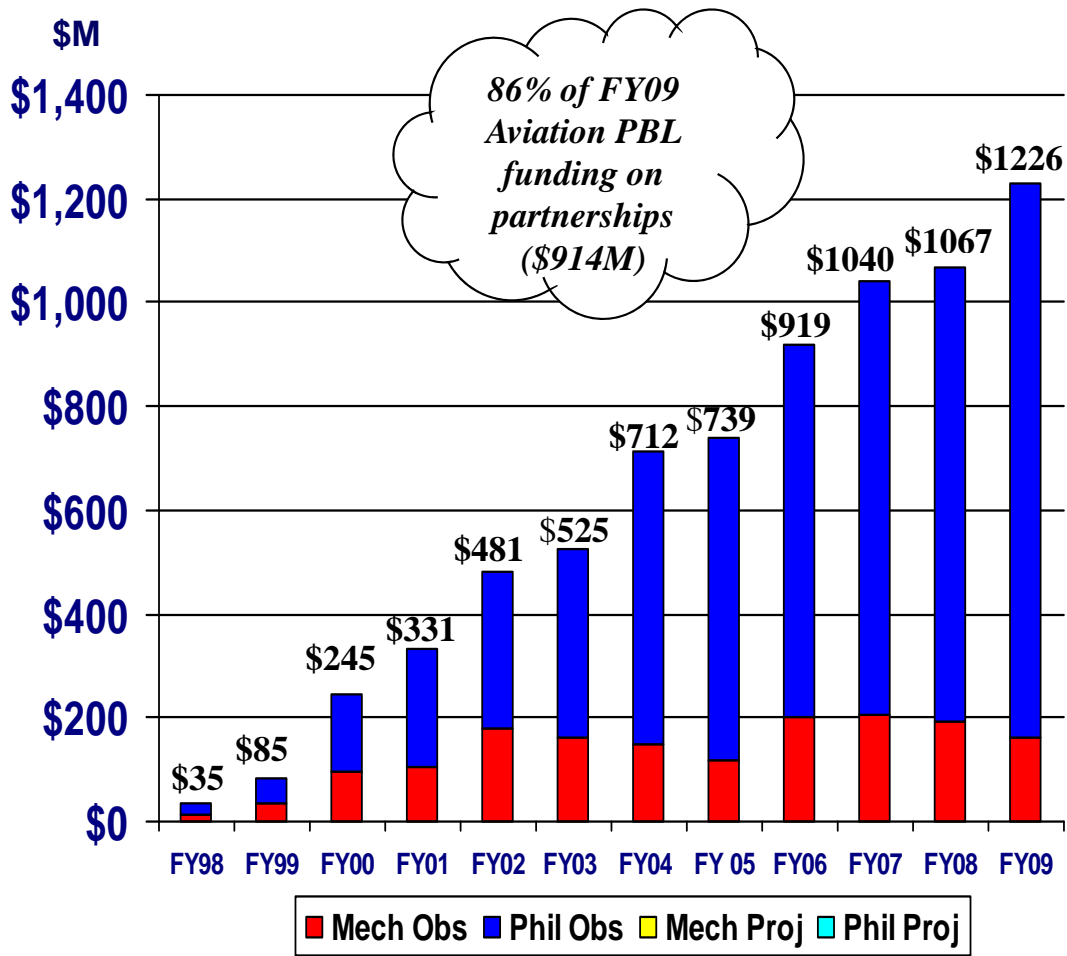
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Why PBL Works

- *Navy buys comprehensive performance package... not individual parts*
 - *This approach totally reverses vendor incentive*
 - *Fixed price “pay for performance” contract now motivates vendor to reduce failures / consumption*
 - *Long term commitment enables vendor to balance risk vs. investment*
- 
Vendor
Actions
- *Improves Parts Support ... Material availability increases + Logistics Response Time (LRT) decreases resulting in Improved Readiness*
 - *Optimizes Depot Efficiency ... Repair Turn Around Time (RTAT), Awaiting Parts (AWP), & Work in Process (WIP) decrease*
 - *Invests in Reliability ... Mean Time Between Failures (MTBF) improves*
 - *Shortstops Failures ... reduces off-station demand*

Procuring the Performance “End-State” ... NOT the “How To”

NAVICP PBL Profile



Business Scope

- 143 contracts/51 MOAs
 - Mech = 69 contracts/42 MOAs
 - Phil = 74 contracts/9 MOAs
- 38,940 NSNs
 - Mech = 15,190
 - Phil = 23,750
- 24.5% of total demand (FY09)
 - Mech = 13.7%
 - Phil = 31.2%

* through Sept '09

- *OSD Policy*
- *Satisfies Title 10 USC*
- *Effective Use of FRC/Depot-level Expertise – Strike Proof, Skilled*
- *Stable Depot-level Workload*
- *Material Support*
- *Sharing of Best Business Practices*
- *Technology Insertion*

- *Reliability Improvements Encouraged*
- *Reduces TAT, and Inventory Requirements*
- *Defined Workshare*
- *“Partners”, Not “Competitors”*
- *Sharing vs. Maintaining Competitive Edge*
- *Improved Readiness at Reduced Costs*
- *Additional workload moved to organic depots; capabilities increased... most cost effective option for industry*

Nineteen successful partnerships in place... Fifteen more in work

Auxiliary Power Unit Partnership

Pre-PBL:

- *Material availability: 65%*
- *Backorders: 125*
- *Units awaiting parts: 232*
- *Multiple unincorporated upgrades*



Honeywell

**SECDEF
2005
Winner**

PBL:

- *\$202M FFP contract with 5-yr base and five 1-yr options ... covers F/A-18, C-2, S-3, P-3, KC-130 APUs... awarded Jun 00 to Honeywell*
- *Depot Partnership: FRC East*
- *Required 90% availability ... 95% attained*
- *Backorders eliminated ... 0 units awaiting parts*
- *Response time reduced fm 35 days to 5 days*
- *Repair Turn-Around-Time (RTAT) reduced fm 162 days to 38 days*
- *18 reliability improvements incorporated; over 60 other enhancements*

**A corporate contract w\ Honeywell:
Other components added...
P-3 EDC, F404 MFCs, other
APUs ... more adds in
process**

NAVICP Has Won Ten of Eighteen DoD PBL Awards Since FY05

Auxiliary Power Unit Partnership

Specific Examples of PBL Actions:

- Improvements to repair process reduced pipeline need from 500 to 400, allowing piece part cannibalization from excess “F” condition APUs*
- Honeywell worked w/FRC East (Cherry Point) to lean out processes ... reduced labor hours , down 47% per unit ... resultant reduction in work-in-process allowed for a smaller wholesale pool and reduced costs*
- Over 30 configuration changes incorporated (20 for reliability, 10 for obsolescence)*
- Honeywell’s technology insertion enabled repair of turbine wheels previously scrapped (\$1000 repair cost vs. \$5000 replacement price)*
- Units overhauled on first pass through depot and brought up to single configuration ... combination of newer, more reliable parts and ability to manage a supply chain for a single configuration reduced cost of subsequent repairs ... profitable because of long-term nature of program*

F404 Engine Partnership

Pre-PBL:

- *Material availability: 43%*
- *Backorders: 718 total ... including 436 high priority*
- *Work In Process (WIP): 1264 units*
- *Repair Turn-Around-Time (RTAT): 116 days*



PBL:

- *\$510M FFP contract with 5-yr base and five 1-yr options ... covers 27 repairable components ... awarded Jul 03 to GE*
- *Depot Partnership: FRC Southeast provides touch labor*
- *Required 85% availability ... 89% attained*
- *Backorders greatly reduced ... 35 total*
- *WIP reduced by 75%*
- *RTAT reduced by 25%*
- *Obsolescence management*



Specific Examples of PBL Actions:

- GE worked w/FRC Southeast (Jacksonville) to lean out processes*
- Incorporation of GE parts matching procedures increased component life, e.g., HPT rotor from 1200 to 1430 hours*
- Incorporation of GE rotor blade mapping software reduced vibration-related field rejects*
- Reduced maintenance-induced component damage, e.g., 50% reduction on Fan Drive Shaft*
- \$30M upfront piece parts investment by GE drove backorder reduction*
- GE ended organic practice of reusing consumable hardware due to parts constraints (LPT air seals, Fan, and HPT rotor studs) ... 100% replacement reduced possibility of component failures related to low cost consumables over-flying their life limits*



- **Commercial Services Agreement (CSA)**
 - Entered into a 10 U.S.C. 2563 partnership with FRC-SE (Jacksonville) in advance of the PBL
 - This allowed the BAE Systems/FRC-SE team to establish workflows and to define roles and responsibilities
 - Under PBL, established a 15-year 10 USC 2474 CSA (5-year base with two 5-year options) in February 2005
- **Facilitated the team**
 - Participated in a Lean Six Sigma event to accelerate best practice sharing
 - Established joint mission and vision
 - Identified, characterized and prioritized processes, obstacles for resolution
 - Identified measures of success
 - Established processes and defined procedures
 - Integrated documentation and data support
 - Provided avenues for communication and cohesiveness



Cohesiveness.. Workload Consistency.. Material Readiness.. Communication



NAVAL INVENTORY CONTROL POINT

ALQ-126B Partnership



Partnership Model

Government-Industry Partnership



3-5 day Spares delivery

NAVSUP
NAVAL SUPPLY SYSTEMS COMMAND
NAVAL INVENTORY CONTROL POINT
Common Systems IWST
Product Support Manager

BAE SYSTEMS
Product Support Office

BAE Systems Site
Warehouse

Product Support Providers
FRC SE Jacksonville
BAE Systems Depot

- Warehousing Spares
- Asset Management
- Components/Piece Parts for Repair
- Maintain Databases
- DMS/Obsolescence Mgmt.
- Technology Insertion
- Depot Engineering Support & Training
- Continuous Improvement

Partnering: Best Use of Resources

- Best Use of Commercial and Organic Artisans' Skill Sets
- Commercial Material Support
- Supply Chain Management Including Asset Accountability
- Engineering Experience & Expertise
- Recurring Information Sharing and Product Knowledge Transfer

Partnership IAW Title X U.S.C 2474

Improved Product Support Improved Service to Warfighter

| | <u>Pre PBL</u> | <u>10 USC 2474 Partnership (PBL)</u> | <u>Comments</u> |
|---|----------------------------|--|---|
| Consumable Parts Availability | As low as 50% | 98% Same day 2% Within 5 days | On-Site Warehouse |
| SRA Availability | 20% | 99% Same day * | *Eliminated Sub-Route Repairs |
| Repair Turn Around | 75 Days | 24 Days | From Induction to Packaging |
| Awaiting Parts | Significant | Not a Factor | Eliminated "G" Condition |
| Consistency in Work Flow | Intermittent/Choppy | Level & Consistent | More Evenly Distributed Manpower Loading |
| Test Equipment Support | Not an Option | Improved | Engineering Assist |
| Program Engineering & Technical Data | Delayed | Immediate Feedback | Improved Communication |



F414 Controls & Accessories

- Awarded Nov '04 to GEAE
- 33 month period of performance
- Partnership with FRC Southeast
- \$123M firm-fixed price contract with incentives
- 36 7R and 887 1R NIINS covered
- Required availability
- Demand surges up to 10%
- Obsolescence management
- Inventory mgmt ... rqmts determination



H-60 FLIR

- Awarded Sep'03 to Raytheon
- \$123M contract w/ 5-yr base & five 1-yr options
- Partnership w/ FRC Southeast... depot capability facilitated thru PBL
- Covers 3 FLIR components ... turret, electronic unit, hand control
- 100% (IPG 1) & 90% (IPG 2-3) availability
- Reliability growth
- Obsolescence mgmt
- Inventory mgmt ... rqmts determination



F/A-18 F-14 Displays

- Awarded Sep'03 to Rockwell
- \$360M contract w/ 5-yr base & 2 5-yr options
- Partnership w/ FRCs Southeast & Southwest
- 272 NSNs covered
- 91% availability
- Obsolescence mgmt
- Inventory mgmt ... rqmts determination... config mgmt
- Engineering support
- Expanded capability / workload at organic facilities





Ten Years of PBL Success:

| Metric (Aviation) | 1999 (Then) | 2009 (Now)* |
|-------------------|---------------|-------------|
| 7R Backorders | 40,377 | 14,556 |
| 7R Avg Age | 271 days | 194 days |
| 7R > 180 days | 17,262 | 5,203 |
| 7R SMA Avg | 70.18% (FY01) | 81.9% |
| 1R Backorders | 9,556 | 6,809 |
| 1R Avg Age | 201 days | 133 days |
| 1R > 180 days | 2,780 | 1,751 |
| 1R SMA Avg | 66.35% (FY00) | 82.2% |

*Aug 2009

7R = repairable component; 1R = consumable

Driving Readiness Improvement

- *Obtain senior level commitment... both government and industry*
- *Make sure there are opportunities for industry... investments in improvements early = reduced costs later = profits*
- *Be clear on the requirement... spend enough time on developing the Statement of Work and metrics*
- *Use a dedicated team representing all stakeholders*
- *Address Title 10 (Core) issues through Partnership agreements*
- *Manage the milestones*

- *Naval Support Challenges*

- *Maintain support for aging weapons*
- *Realize savings to support recapitalization*



- *The PBL Solution ...*

- *Better availability ... faster response*
- *Industry incentivized to manage obsolescence / improve reliability*
- *Improvements at all levels of maintenance*

PBL Partnerships ... The Enabler to Cost Wise Readiness