

2005 REQUIREMENTS SYMPOSIUM



**BREAKOUT TOPIC:
ENGINE TRAILERS, DOLLYS
& ADAPTERS**

**542d
Combat Sustainment
Group (CSW)**

Mary Stevenson, Program Manager



Overview



- Brief Program / Issue Description
- Current Status of Program / Issue
- Acquisition & Sustainment Strategy
- Program Requirements - Program Requirements Roadmap
- Program Budget
- Program Challenges/Opportunities
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- Summary



Brief Program / Issue Description



- Engine Trailers, Dollies & Trailer Adapters are used for a variety of flightline, backshop, and maintenance on all aircraft. These trailers consist of 202 Trailers & Dollies, & 404 Adapters
 - **Equipment includes:** Engines trailers, Engine adapters (trailer), Engine cradles (trailers), Cowling trailers, Nacelle trailers, Conformal fuel tank dollies, Fuel tank dollies, Main Landing gear trailers, Nose Landing gear trailers, Wheel removal trailers, Prop dollies, Gas Turbine Compressor trailers, APU/CSD Generator dolly, Transmitter loader trailer, Refrigeration Unit dolly
- Multiple Configurations per Application/Use
- Most drawings 20+ years old and incomplete
- Loss of Configuration Control due to parts obsolescence and DMS issues



Current Status of Program / Issue



- Backlog of Requirements
- Legacy systems suffering DMS and Obsolescence
- Numerous trailers in field have exceeded service life
 - Need a sustainment capability that includes Repair, Refurbishment, Reconditioning, Remanufacturing, and / or Recycling
 - Engineering Services
 - Quality & Performance
 - Testing
 - OSS&E Integrity
- Commercial vs. Mil Spec Procurements forces non-conforming assets



Acquisition & Sustainment Strategy



- Establish sustainment program via a long-term contract
 - Industry Day
 - Market Research Questionnaire
- Contract a study to consolidate Trailer and Dolly configurations
 - Retain Adapters for new Trailers and Dollys
- Establish a competitive consortium of vendors to meet new acquisition requirements
 - Industry Day, RFI
 - Vision is that pre-established sustainment program would also support new trailers and configurations



Program Requirements Roadmap



- Get MAJCOM approval and funding for long-term trailer repair, refurbishment, remanufacturing, and recycling program
- Establish funding brochure for MAJCOM approval
- Complete Trailer consolidation study
 - Contracted Study
 - AF Battlelab Initiative Completion and obtain approval of PD for new trailer configurations
- Submit RDT&E requirements in FY07 APOM
 - Submit White Paper to OSD Challenge Program
- Get “Consortium of Vendors” approved



Program Budget



	<u>RDT&E</u>	<u>Acquisition</u>	<u>Sustainment</u>
FY 06		\$2M	\$ -
FY 07	\$3M	\$2M	\$250K
FY 08	\$15M	\$12M	\$430K
FY 09	\$15M	\$25M	\$430K
FY 10	\$ -	\$25M	\$430K



Program Challenges / Opportunities



- Helps achieve economic, environmental and customer benefit
 - Technology exists to restore our items
 - Items can be made up of standard interchangeable parts
 - Cost of repairs is low relative to savings in item cost achieved through core reuse
 - Technology is stable over more than one life cycle
 - Sufficient supply demand to sustain enterprise
- Various types of funding available for these types of efforts



Area / Issues Needing Improvement or Assistance



- Acquisition
- Sustainment
- Refurbishment
- Engineering Services
- Quality and Performance
- Testing
- OSS&E
- Drawings and Data
- Enhanced Customer Support



Area / Issues Needing Improvement or Assistance (cont.)



- **ACQUISITION**

- For future procurements, identify all obsolete components that are no longer available and update using current, commercially available items
- Identify multiple configurations of similar trailers that can be reduced to a single configuration. Design, manufacture, test, and provide all data required for future competitive trailer procurements
- Increase commonality between trailers to facilitate ease of spares procurement. (Same tires, rims, bolts, nuts, etc)
- Suggest any design changes or methods to reduce cost of all trailers
- Design trailers so that all components are easily accessible and trailers are easily maintained.



Area / Issues Needing Improvement or Assistance (cont.)



- **SUSTAINMENT**

- Suggest methods to increase trailer service life, increase reliability, and extend time between maintenance intervals
- Provide solutions for hard to find or obsolete components on currently fielded trailers that are unusable due to parts availability
- Provide solutions for, and repair, trailers that are currently not in use due to design flaws
- Identify components of trailers that require forgings or castings and provide replacements or suitable substitutes



Area / Issues Needing Improvement or Assistance (cont.)



- **REPAIR / REFURBISHMENT / REMANUFACTURING / RECYCLING**
 - Repair/refurbishment (remanufacture?) contracts for all trailers in the field that have exceeded their expected service life. Replace obsolete, unavailable, or proprietary components with commercially available, off the shelf items
 - Facilitate a “second” life for our products by increasing its reliability, improve ease of maintenance, etc.
 - Many trailers are work, defective, on-the-blink, unserviceable, or “canned”
 - Products and Tech Data are not up to specification
 - Propose which “valuable” components could be retained for use on other items



Area / Issues Needing Improvement or Assistance (cont.)



- **ENGINEERING SERVICES**

- Update all data and drawing packages via ECP's to address modern design changes, and component changes. Create or re-draw any or all drawings if necessary.
- Reverse engineer any trailer where a drawing package is not available. Provide all engineering drawings, and update trailer using commercial off the shelf items and any other improvements.
- Provide complete drawings suitable for future competitive acquisitions for any newly designed trailers
- All drawings submitted in AutoCad format, as well as hard copies
- Consolidate all similar Technical Orders into one manual per trailer
- Update Technical Orders for all changes made to any trailer, including updated part numbers for refurbished, newly manufactured, or newly designed trailers.
- Label all components of each trailer with the correct part number



Area / Issues Needing Improvement or Assistance (cont.)



- **QUALITY AND PERFORMANCE**
 - Penalties for late submissions, missed deadlines, poor quality work, etc.
 - ISO 9001 and 14000 (or equivalent) certifications required
 - Proposed methods of management that provide regulation and control over the program to ensure that all requirements are successfully met on time and with adequate performance
 - Ensure that suppliers and subcontractors are managed in a way that supports program objectives, deadlines, and necessities
 - 5 year warranty on all trailers manufactured or refurbished.
 - All welds and welding practice shall be done to AWS D1.1 Welders must be certified for the proper weld type, size, and position. Demonstration of welding certification is required



Area / Issues Needing Improvement or Assistance (cont.)



- **TESTING**

- First Article Testing on all reverse engineered, remanufactured, or updated trailers. Will include a “fit test” with the next higher assembly as well as demonstration of all performance characteristics found in the Tech Order.
- Test Plans will be submitted prior to any testing for Government approval.
- All load tests will be performed at twice the trailers’ rated capacity
- Endurance tests for both towing and load carrying/raising/lowering



Area / Issues Needing Improvement or Assistance (cont.)



- **SAFETY**

- Preventative safety measures designed and employed for all trailers to guarantee risks are mitigated to their lowest level.
- Estimates on each trailer life cycle and projected failure modes and types. Also, develop pre-prepared quality instructions for all failure types and expected failures.
- Provide a means for recognizing and managing problems in a reliable and timely manner.
- Registered Professional Engineers (PE) will approve and stamp all drawings for new trailer designs.
- All components and trailers shall be designed to tolerate corrosion and shall be protected against corrosion that may impair the strength or serviceability.
- Mechanical safety “backup” mechanisms on all hydraulic systems.
- FODs



Area / Issues Needing Improvement or Assistance (cont.)



- **DRAWINGS & DATA**

- Provide all necessary special tools and maintenance items (including drawings) that may be required.
- For any changes to components, on any trailer, provide multiple sources of supply for all items.
- Level III drawings will give complete information for the fabrication of the trailer, including detailed information on each component part of the structure. The drawings will be prepared and completed in advance of the actual trailer fabrication and will be reviewed by the SEVSG engineer prior to fabrication.
- Drawings must be approved after the First Article Test and before production of the trailers begins.
- Tech Orders must be approved after the First Article Test and 60 days before production of the trailers begins.



Enhanced Customer Support



- Sustainment contract which would support the Trailer program's legacy and new model equipment.
 - Older systems supported while establishing a support strategy for newly developed systems.
 - Ship-Repair-Return to enhance warfighter mission support
 - Quick return of assets to customer vs. procurement lead and delivery times
 - Reduce new requisitions and demands on supply system
- Establish interactive customer support website for the contractor, customer and program office to request, confer, repair, track, fund and provide feedback on repairs.
 - Engineer and/or Equipment Specialist would review to provide troubleshooting techniques before approving asset be forwarded for repair
- **TOTAL WIN-WIN SITUATION - CONSERVES RESOURCES**



Government Focal Points



- Mary Stevenson, PM, (478) 222-1869
- Stephen Seiler, Engineer, (478) 222-1350
- Jason McDuffie, Engineer, (478) 222-1383
- Julie Lord, Equipment Spec., (478) 222-1372
- Carole Coach, Item Manager, (478) 222-1714
- Elaine Coulombe, Item Manager (478) 222-1712
- Paula Macleod, Contracting Officer, 222-1862
- Betty Miller, PMS Seller, (478) 222-1753
- Earlene Garrison, PMS Buyer, (478) 222-1715



Summary



- This is a major opportunity for extending the life and greater utilization of our legacy equipment.
 - OEMs becoming increasingly aware of profit potential in repair and remanufacturing
 - Provides for product failure modes and durability
 - Permits them to maintain brand reputation
 - Efficiency of scale in industry
 - Larger companies emerging, buying up smaller companies or becoming source suppliers to the smaller firms, who become commercial resellers
 - Wide dispersion, diversity of products, and small size of the players in this industry have diversified the playing field
- Consolidating configurations opens up the market to non-traditional industrial sources