



# DEFENSE LOGISTICS AGENCY

AMERICA'S COMBAT LOGISTICS SUPPORT AGENCY



Defense Logistics Agency  
Defense Supply Center Richmond  
Green Product Development  
Presented at the  
Environmental Business Symposium  
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WARFIGHTER SUPPORT ENHANCEMENT

STEWARDSHIP EXCELLENCE

WORKFORCE DEVELOPMENT

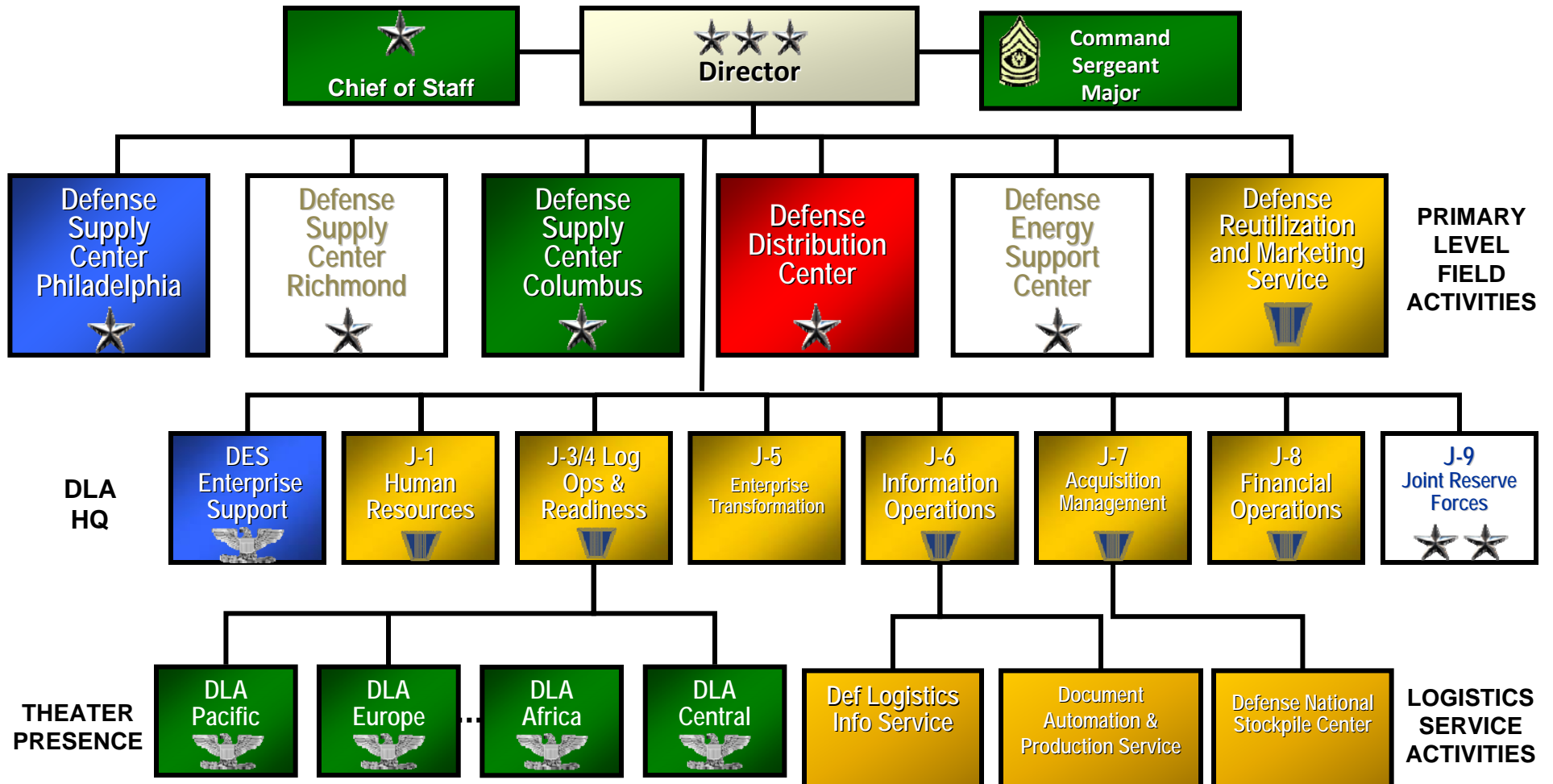


# Agenda

- **DLA Overview**
- **Green Product Development**
- **Green R & D Efforts**
- **Conclusion**
- **Way Forward**



# DLA Organization



As of 27 Jan 10



# Full Spectrum Global Support

## Supply Chains

- Subsistence
- Fuel/Energy
- Land Systems
- Maritime Systems
- Aviation Systems
- Medical
- Clothing & Textile
- Construction & Equip

## Theater Support

- DLA Europe
- DLA Pacific
- DLA Central
- DLA Africa

## Distribution

- Defense Distribution Center
- 25 Distribution Centers

## Reutilization & Disposal

- Defense Reutilization & Marketing Service
- Reverse Logistics

## Stockpile

- Defense National Stockpile Center

## DLA Services

- Document Automation & Production Service
- Defense Logistics Information Service
- Defense Automatic Addressing System Center



USNORTHCOM



USEUCOM



USCENTCOM



USPACOM



USSOUTHCOM



USAFRICOM



# The DLA Enterprise as of 31 Dec 2009

<b>FY04 Sales/Services:</b>	<b>\$28B</b>
<b>FY05 Sales/Services:</b>	<b>\$31.8B</b>
<b>FY06 Sales/Services:</b>	<b>\$35.5B</b>
<b>FY07 Sales/Services:</b>	<b>\$35.0B</b>
<b>FY08 Sales/Services:</b>	<b>\$42.0B</b>
<b>FY09 Sales/Services:</b>	<b>\$38.0B</b>

- ~84% of Services' repair parts
- 100% of Services' subsistence, fuels, medical, clothing & textile, construction & barrier materiel

## Foreign Military Sales

- Sales FY 09: \$1.5B
- Shipments FY09: 585K
- Supporting 118 Nations

## Scope of Business

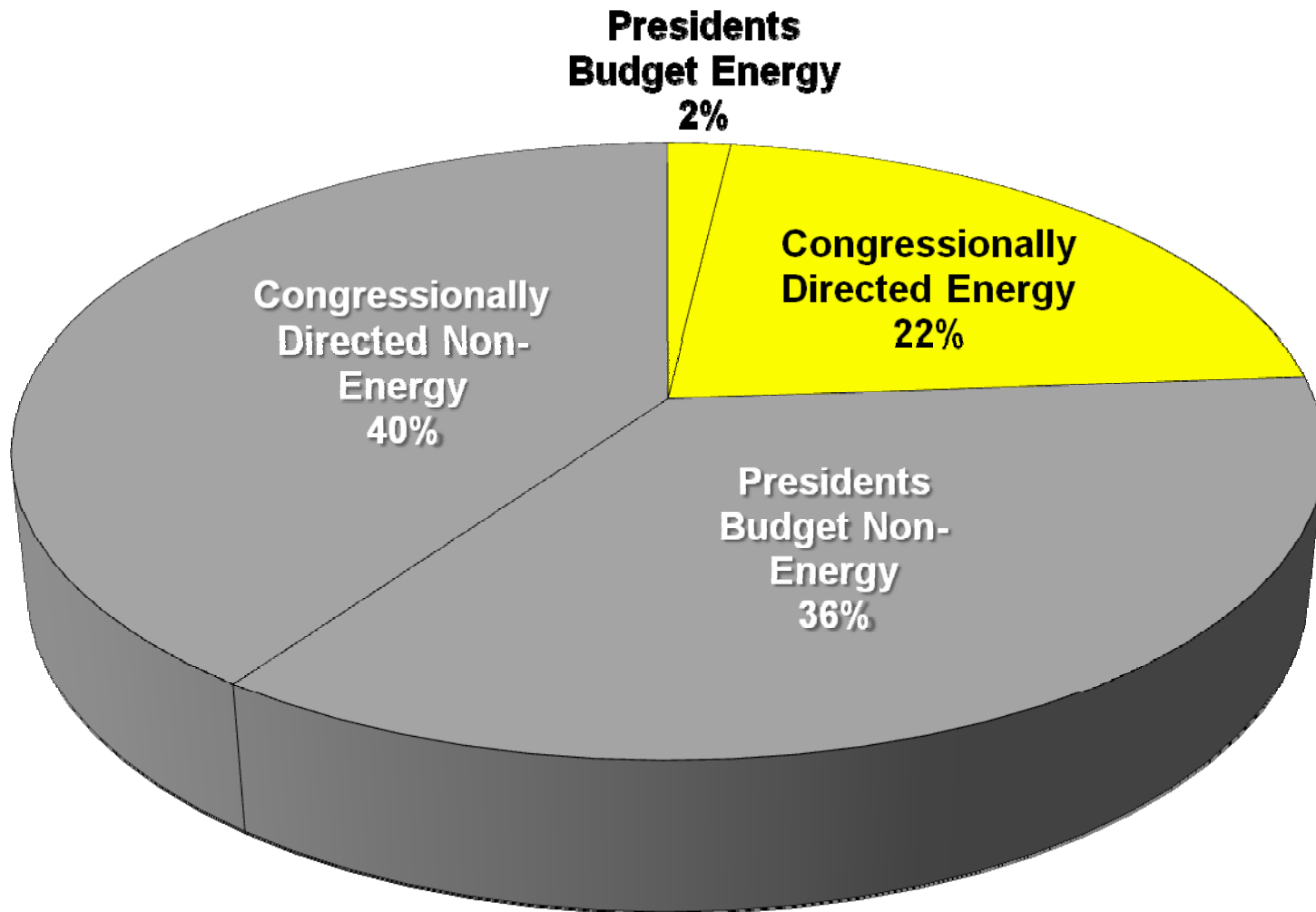
- 112,000 Requisitions/Day
- 8,500 Contract Actions/Day
- # 61 Fortune 500
- # 3 in Top 50 Distribution Warehouses
- 25 Distribution Depots
- 3.8 Million NSNs – eight supply chains
- 22.8M Annual Receipts and Issues
- Nearly 1600 Weapon Systems Supported
- 129.0M Barrels Fuel Sold in FY09
- \$26.6B Annual Reutilizations/Disposals

## People

- 24,630 Civilians
- 557 Active Duty Military
- 759 Reserve Military
- Located in 48 States/28 Countries



# FY 10 DLA R&D Program – \$94.4M





# FY 10 President's Budget Logistics R&D Portfolio

Subsistence	Clothing & Textiles	Medical	Energy	Const / Equip	Maritime	Land	Aviation
<b>Combat Rations Network</b> \$1.7	<b>Customer Driven Uniform Mfg.</b> \$3.7	<b>Medical Logistics Network</b> \$2.5	<b>Energy Readiness</b> \$1.9	<b>Castings \$2.3</b>			
	<b>Tent Network</b> \$0.9			<b>Forgings \$1.1</b>			
				<b>Weapon System Sustainment \$4.9</b>			
				<b>Microcircuit Emulation \$9.5</b>			
				<b>Battery Network \$0.9</b>			
<b>Supply Chain Enablers</b>							
<b>Supply Chain Management \$2.5</b>							
<b>DDC/DRMS: Strategic Distribution and Reutilization \$3.1</b>							
<b>DLIS: Defense Logistics Information Research \$2.0</b>							
<b>0708011S - Industrial Preparedness \$19.4M</b>				<b>0603712S - Generic Logistics R&amp;D Tech Demo \$16.3M</b>			



# Green Product Development



# The Law

- Clean Air Act (CAA)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Emergency Planning and Right to Know Act (EPCRA)
- Energy Policy Act (EPACT)
- Farm Security and Rural Investment Act (FSRIA)
- Pollution Prevention Act (PPA)
- Resource Conservation and Recovery Act (RCRA)
- Superfund Amendment and Reauthorization Act (SARA)



## Executive Orders

- Federal Leadership in Environmental, Energy, and Economic Performance (EO 13514)
  - Waste reduction, energy conservation and sustainability
  - President Obama signed Oct 09
- Strengthening Federal Environmental, Energy, and Transportation Management (EO 13423)
  - Replaced many previous EOs, upgraded the goals of those EOs and added reporting requirements
  - President Bush signed Jan 07



# Why go Green?

- To comply with Executive Orders and DoD Directives.
  - Federal Laws, regulations, Presidential Executive Orders and recent DoD Green Procurement policy call for increased procurement of “green” products.
- To promote environmental stewardship
  - Congress and the President have directed federal agencies to be good stewards of the environment. Federal agencies are now expected to conserve energy and other precious natural resources and as stewards of federal dollars, we are obligated to purchase certain items considered “green”
- To reduce operating and maintenance costs
  - Reuse or recycling items reduces disposal costs and material handling
- To reduce the hazardous waste stream
  - Eliminate part of the 2.6 billion pounds of toxic chemicals released annually in the US.





# What are “Green” Products?

- Green products are:
  - Environmentally preferable products that have a lesser or reduced effect on human health and the environment when compared to competing products or services that serve the same purpose.
  - Products that provide a lower cost based on life-cycle costs, not purchase price.
  - Products that meet the approved Environmental Attribute Code (ENAC) by being water efficient, energy efficient, low standby power, or bio-based.

*Note: This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product or service.*



**So... Logically, Green procurement would be the purchase of products and services with favorable energy or environmental attributes in accordance with federally-mandated "green" procurement preference programs.**



# Green Procurement Program (GPP)

- The Department of Defense's **Green Procurement Program** policy and strategy were issued in August 2004. The policy formally established a DoD Green Procurement Program (GPP).
- The Department of Defense's Green Procurement Program (GPP) is a comprehensive strategy for implementing environmentally preferred practices while sustaining the overall mission.
  - Formally establishes DoD's GPP
  - Requires documentation of objectives, targets, and actions in an installation-level plan
  - Requires that green products and services be considered as the first choice for procurements
  - Assigns responsibility to virtually every DoD employee
    - Requires implementation at the organizational level where initial purchasing requirements are defined
    - Requires GPP training and refresher training for all personnel involved in acquisitions



# DSCR Green Products Team

- Hazardous Minimization and Green Products Branch
  - Officially established in March 2009
  - Operational framework in existence since Fall 2008
  - Branch comprised of Engineers, Chemists, and a Customer Outreach Specialist
- Supports the Enterprise to increase the number of DLA green products offerings and orders
- Facilitates the development of New DoD Green Services and Products
- Technical Resource for DLA Enterprise
- Contact the **Green Team** at [GreenProducts@dla.mil](mailto:GreenProducts@dla.mil)



# GPP Products

- Recycled content products
- Energy- and water-efficient products
  - Standby power devices
  - ENERGY STAR and FEMP-designated products
  - EPEAT-registered products
  - WaterSense
- Alternative fuel vehicles/alternative fuels
- Biobased products
- Environmentally preferable products
- Non-ozone depleting substances
- Low or non-toxic or hazardous chemicals





# DSCR - Current Activities

- Green Products and Services
  - Closed Loop Recycled Antifreeze Service Contract
  - Hazardous Minimization Product Development
  - Bio-based Product Development



# Closed Loop Recycled Antifreeze Program

- Closed Loop system involves vendor delivery and pick-up of used byproduct
- Existing closed loop re-refined oil program served as model
- Business Case Analysis indicated that a nationwide closed loop system is feasible
- Estimating Request for Proposals in Spring 2010



# Hazardous Minimization Efforts

- Typical Hazardous Minimization Projects
  - P-D-680 Alternative
  - MIL-PRF-85570 Type I Cleaners
  - Canopy and Optics Cleaners



# Hazardous Minimization Product Development

## P-D-680 Alternative

- New Specification (MIL-PRF-32295) developed for general cleaning application aircraft and ground support equipment
  - Type I, Low VOC, HAP-Free
- Field Testing completed at Navy, Air Force and Coast Guard operational sites. Tech Pub updates underway.
- New products
  - 1 Gallon                      6850-01-576-2676
  - 5 Gallon                      6850-01-576-2765
  - 55 Gallon                     6850-01-576-2736



# Testing on Cleaning Grease FRC, Cherry Point, NC



Before MIL-PRF-32295



Before MIL-PRF-680



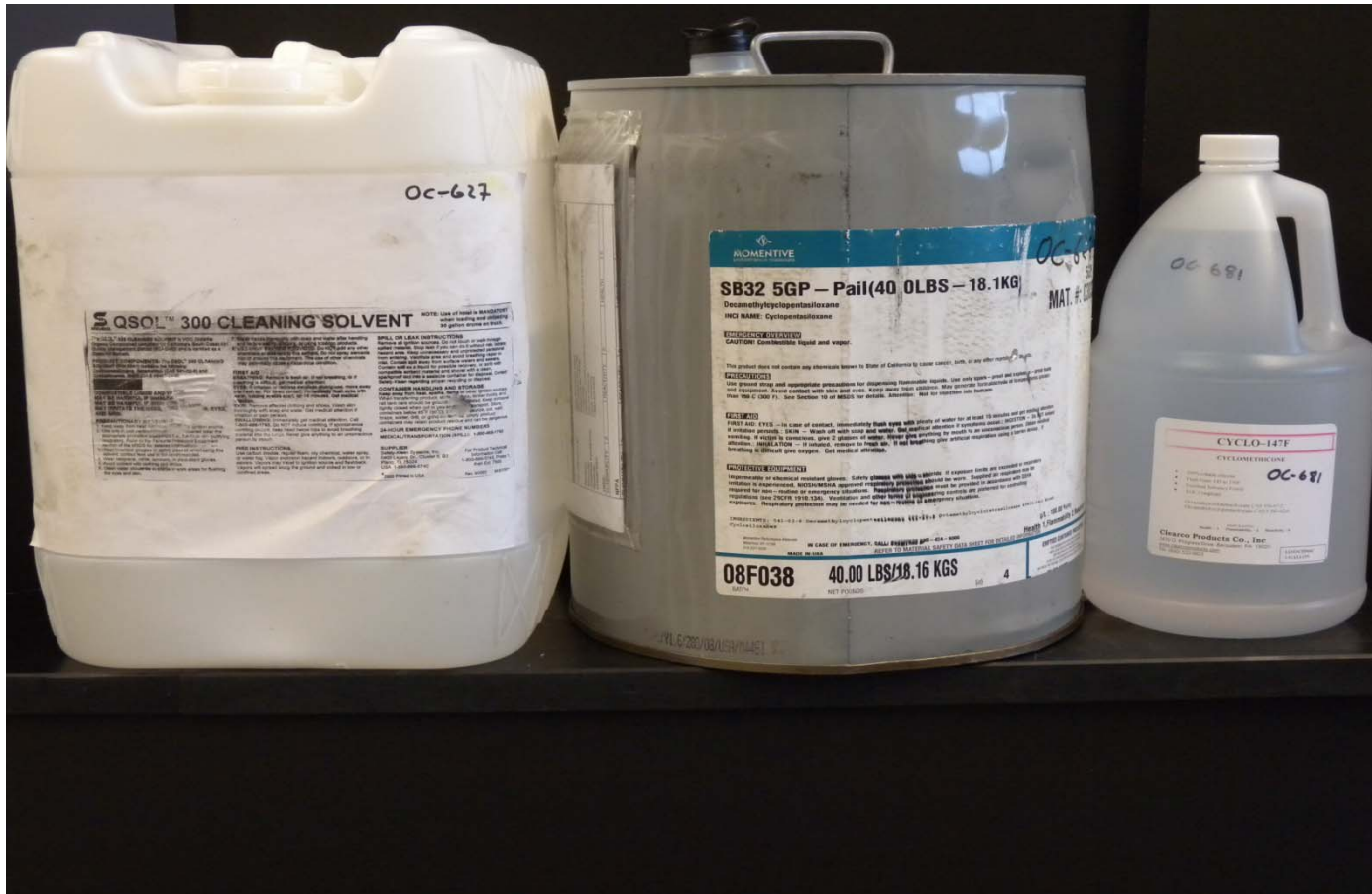
After MIL-PRF-32295



After MIL-PRF-680



# Qualified MIL-PRF-32295 Products



OC SafetyKleen QSOL 300, Clearco Products Cyclo 147F, Fluid Momentive SB32



## More on P-D-680 Alternative

NAVY CURRENTS Fall 2009

# NAVAIR Finds Alternatives for Petroleum-Based Solvents

## Low-VOC, HAP-Free Solvents Meet New Environmental Regulations

ENGINEERS FROM THE Naval Air Systems Command (NAVAIR) have identified three non-aqueous, low-Volatile Organic Compounds (VOC) and Hazardous Air Pollutant (HAP)-free solvents as alternatives to CID A-A-59601 (formerly P-D-680) MIL-PRF-680 solvents to meet new environmental regulations.

To obtain a high degree of cleanliness without corrosion, petroleum-based solvents such as CID A-A-59601

MIL-PRF-680 B contains the same amount of VOC as CID A-A-59601 but without the HAPs. CID A-A-59601 solvent, commonly called Stoddard Solvent or mineral spirits, is a widely-used, man-made organic solvent that comes from the refining of crude oil. Cold solvent cleaning of aircraft components is performed at Organizational-, Intermediate- and Depot-levels and usually takes place in either spray tanks or batch loaded dip tanks.

Under Title III of the 1990 Clean Air Act amendments, the U.S. Environmental Protection Agency (EPA) established emissions standards for categories and sub-categories of sources that emit or have the potential to emit listed HAPs. In addition, Air Pollution Control Districts in California implement the most stringent requirements, usually stated in terms of VOC content, such as the South Coast Air Quality Management District (SCAQMD) Rule 1171.



# Hazardous Minimization Product Development

## MIL-PRF-85570 Type I Cleaners

- Evaluate currently qualified MIL-PRF 85570 Type I Cleaners in a aerosol version, pre-moistened wipe form and qualify for use; revise specification to include new class
- Prevents use of unauthorized/unqualified products which pose health, safety and aircraft corrosion problems
- Satisfy need for aircraft spot cleaner as a replacement for high aromatic solvents



# Candidate Products



**MIL-PRF-85570 Type I Pre-saturated Wipes – Foil Pouch & Plastic Tub**



**Unauthorized MIL-C-43616 aerosol (L) with candidate MIL-PRF-85570 TY I Aerosols (R)**



# Hazardous Minimization Product Development

## Canopy and Optics Cleaners

- Evaluate the feasibility of using micro fiber cloth with only water for cleaning aircraft canopies, windscreens, windows, optics and instruments without the use of chemicals
- Prevents use of unauthorized/unqualified products which pose health and safety problems
- Initial testing for haze, transmittance and clarity showed no effects on acrylic or polycarbonate materials when used with water



# Candidate Product



Microfiber cloth product offered by 3M



# Bio-Based Product Development

- Analyze commercial Bio-based items
  - Determine capability of bio-based item(s) to meet military application performance requirements
- Develop Bio-based Test Protocol with Joint Group on Pollution Prevention
  - Primarily focusing on Bio-based lubricants
- Work with USDA to develop a pilot study for printer toners



# Green Sustainment Engineering Efforts



# Green Sustainment Efforts

- Several projects have been initiated from a R&D/ Value Engineering standpoint that has a green element to them
  - A-10 Ballistic Foam Blowing Agent
  - Aircraft Mildew Remover
  - E2/C2 Corrosion Resistant Grease
  - Magnesium and Zinc Coating
  - Pre-coated Fasteners



# A-10 Ballistic Foam Blowing Agent

Problem: USAF needed a replacement for the banned Freon 114b used as a blowing agent to create ballistic foam for the A-10 Thunderbolt II.

Solution: Partnered with USAF to develop and qualify foam manufactured with a new blowing agent.

Project Cost: \$350K

Benefits: The foam is once again available for use in the A-10 and as many as 400 other NSNs. Backorders were avoided.





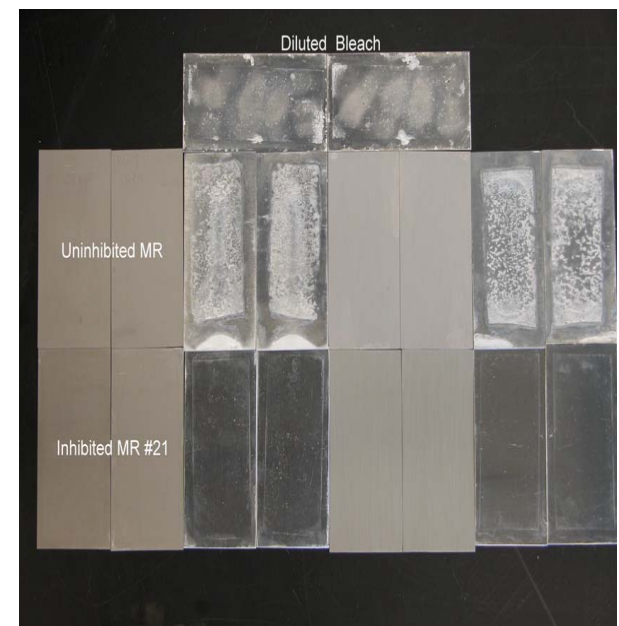
# Aircraft Mildew Remover

Problem: Maintenance procedures to remove mildew growth and staining from aircraft surfaces have historically required many man-hours. In addition, previously approved materials are often inadequate and hazardous

Solution: Replace liquid components in the original kit with dry components and test the biological decontamination and HAZMAT properties

Project Cost: \$200K, Savings \$1.7M/YR

Benefits: Easily managed dry kit that performs as a biological decontaminant and is less hazardous





# E2/C2 Corrosion Resistant Grease

Problem: E2/C2 rotodome bearings, rotodome gearbox and wing hinge-fold bushings were subject to corrosion and lubrication problems that resulted in expensive repairs.

Solution: Two phase project to qualify a new grease. First, lab test and evaluation and then fleet usage and evaluation.

Cost: \$285K      Savings: \$3M

Benefits: Reduced maintenance and associated costs due to corrosion, decrease part cost and increase aircraft availability.





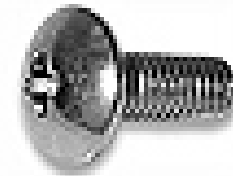
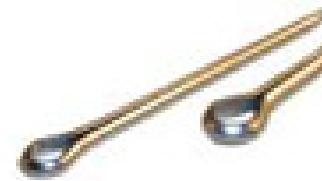
# Magnesium and Zinc Coatings

Problem: Aircraft maintenance personnel are being exposed to hexavalent chrome and cadmium, both are carcinogenic

Solution: Develop magnesium coatings to replace chromated primers for use on aluminum and validate zinc coatings as a replacement for cadmium on high-strength steel

Project Cost: \$285K Savings: \$2.25M

Benefits: Eliminates the use of carcinogenic compounds and reduced cost to manufacture





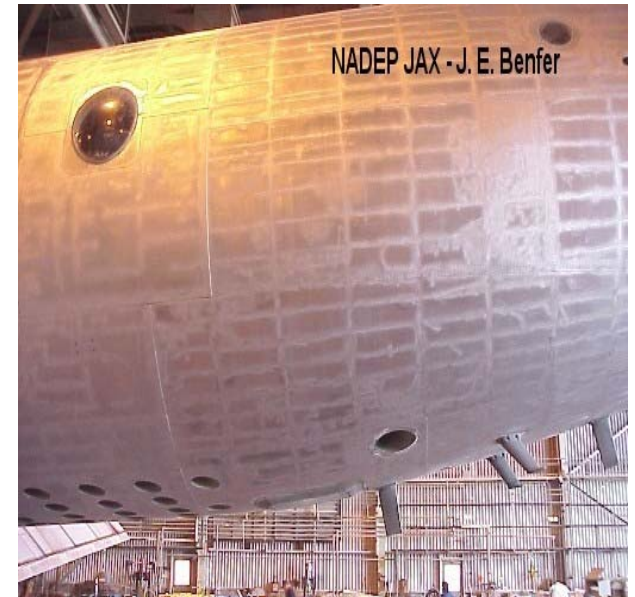
# Pre-coated Fasteners

Problem: Original fasteners required wet installation is expensive, time consuming, subject to technician error, and requires the use of an environmentally hazardous sealant.

Solution: Test, qualify and develop specifications for pre-coated self sealing fasteners for all service applications.

Project Cost: \$600K      Savings: \$4M/YR

Benefits: Enhance corrosion resistance, reduce maintenance and associated part costs and a reduction in hazardous waste.





## “Conclusion”



- DLA is moving forward to comply with Federal mandates to minimize hazardous material footprint
- Making strides in the development and appropriate substitution of green products for use by the military customer
- Facilitating the increased use and offering from different funding streams



## “Way Ahead”



- Continue to communicate green requirements to DLA customers
- Identify Service POCs that have “Green Procurement” responsibilities
- Assist in identification and development of green substitutes and alternatives
- Support of Acquisition Policy and Cataloging Communities in developing new processes and cataloging strategies



# Questions?