

FY 2011 Chief of Naval Operations Environmental Award
Award Category: Sustainability – Industrial Installation
Fleet Readiness Center East (FRC East), Cherry Point, North Carolina



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INTRODUCTION

The mission of the Fleet Readiness Center East (FRC East) is to provide Unsurpassed Service to the Fleet and Relentless Focus on Quality, Environment, and Occupational Health and Safety. For over 60 years the FRC East has provided the highest quality services in maintenance, repair and overhaul as well as engineering and logistics processes to support DoD aviation. Located within the city limits of Havelock, North Carolina (Population: 22,500), FRC East is the largest tenant of Marine Corps Air Station Cherry Point. FRC East employs over 3,000 civilian, military, and contractor personnel, making it the largest industrial employer in Eastern North Carolina. FRC East facilities include 115 buildings with an average age of over 40 years and a total square footage of 1.9 million sq ft, 71% of which is production space. The estimated replacement value of both buildings and equipment is \$1.17 billion. The total facility footprint is approximately 150 acres surrounded by Slocum Creek, the Neuse River, and the Croatan National Forest.

BACKGROUND

Our commitment to sustainability has been demonstrated throughout our history. From our initial work on the historic aircraft of World War II to the planning for our future work on the F-35B Joint Strike Fighter and H-53 Kilo, we have shown we can continue to be the Vertical Lift Center of Excellence as long as our war fighters are in harm's way.



FRC East performs depot level repair and maintenance on the v-22 Osprey, AV-8B Harrier, AH-1 Cobra, UH-1 Iroquois (Huey), H-46 Sea Knight, H-53 Super Stallion, and the MQ-8 Firescout. Aircraft are completely disassembled, repaired, reassembled, and flight tested at our site. We also provide in-service support on the EA-6B Prowler, H-2 Sea Sprite, H-3 Sea King, H-60 Seahawk, and the C-130 Hercules. In addition to over 16,000 types of components, we repair the T-58, T-400, F-402, and T-64 engines. As the environmental concept of sustainability has developed, the FRC East has led the way in processes, equipment, and most importantly, our dedication to continuing our exemplary level of “Service to the Fleet” while minimizing our environmental impact.



As a heavy industry, FRC East faces a multitude of environmental challenges and works hard to develop improvement opportunities for the numerous industrial processes which include aircraft disassembly, painting, paint removal, machining, welding, engine testing, chemical cleaning, and electroplating. FRC East is the largest generator of Hazardous Waste (HW) under the MCAS Cherry Point’s Resource Conservation and Recovery Act permit and is the most significant contributor to the air station’s industrial wastewater treatment plant. Due to its unique emissions and regulatory requirements, FRC East holds its own Clean Air Act Title V Air Permit.

FRC East is involved in our community on all levels. We are an active member of the MCAS Cherry Point Environmental Management System (EMS) Core Team and involved in many of their base wide projects. We reach out to the county through our membership on the Local Emergency Planning Committee. Every year we sponsor an Earth Day art contest at a local school. In May 2011 we organized and hosted the first annual Eastern Carolina Environmental Conference. This two day event brought together environmental personnel from local municipal governments and businesses for training and networking. Through our status as an Environmental Steward (designated by the North Carolina Department of Environment and Natural Resources) we share difficulties and successes with businesses and municipalities of all sizes throughout the State.

We are quite proud of our sustained environmental legacy. We have earned an environmental award at the Chief of Naval Operations level or higher for seven consecutive years.

Environmental Awards & Recognition	
2010	Chief of Naval Operations Environmental Quality Award
2009	Chief of Naval Operations Sustainability Award
2008	Sustainable NC (Greater Good) Award
	Chief of Naval Operations Environmental Quality Award
	Secretary of the Navy Environmental Award
	Secretary of Defense Environmental Award – Honorable Mention
2007	Chief of Naval Operations Industrial Environmental Quality Team Award
2006	Chief of Naval Operations Environmental Quality Award (Industrial)
	White House Closing the Circle Award - Honorable Mention
2005	Membership to EPA National Environmental Performance Track
	Secretary of Defense Environmental Award Honorable Mention
	Membership to NCDENR Environmental Steward Initiative
	Chief of Naval Operations Environmental Quality Team Award
	Secretary of the Navy Environmental Quality Team Award
	N.C. Sustainability (Pollution Prevention) Award
2004	Chief of Naval Operations Environmental Award
	Secretary of the Navy Environmental Quality Award
	Secretary of Defense Environmental Award



Maintaining a 100 percent compliant program has its challenges, especially with declining budgets and reductions in force. FRC East has a long history of compliance; however, during FY2011 FRC East was cited by the North Carolina Department of Environment and Natural Resources Division of Air Quality for two Notices of Violation. Both of these issues were for minor record keeping deficiencies and were quickly corrected. There was no adverse environmental impact.

PROGRAM SUMMARY

The backbone of our EMS is our Hazardous Materials (HM) Program. The proper management of HM determines the success of virtually every environmental program:

Most HM leaves the FRC East through the Hazardous Waste (HW) Program. Virtually all regulated Air Emissions use HM in the process. Generally, HM escaping from the process leads to Water Quality issues. Exposure to HM is the greatest concern to Occupational Health. Costs to manage HM far exceed other inventory costs per unit

FRC East uses the Hazardous Materials Management System (HMMS) as our method of tracking HM. This software records all transactions from need requests to disposal. Our HM Program conforms to the Navy's Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP). The primary objective of the program is to provide life cycle management of HM in order to minimize waste and manage cost. The fully implemented system enables efficient processing of approximately 200,000 pounds of HM each year. In FY2011 alone, 188 material reviews were conducted. The system also provides a review process for all hazardous materials prior to purchase and use. These reviews provide a quality product and protect our employees:

Materials Engineering Division verifies compatibility with the process
Industrial Hygiene professionals ensure the safety of our personnel
Environmental Division certifies compliance with existing permits

When the Environmental Division reviews a request for HM, several factors are considered. The Air permit requirements must be met before the substance may be emitted. There must be adequate HW collection facilities available. Safeguards to prevent contamination of surface waters are verified.

The FRC East Materials Engineering Group is intimately involved in improving our use of HM. In addition to finding environmentally preferred substitutes for products, they also recommend equipment improvements. The recirculating glove boxes we use for varsol cleaning of aircraft parts were discovered by a Materials Engineering Technician. We now have 5 of these units that filter and recirculate varsol in a closed system. This reduced our usage in one shop by over 80% while practically eliminating personnel exposure. At \$6.50 per gallon to purchase and dispose, the savings paid for the unit in less than a year.

The HMMS records allow our Safety Office to track exposure to individual personnel. This can be helpful in preventing overexposure and determining what type of Hazard Communication training, engineering controls, and personal protective equipment to provide to avoid health issues.

Employee training is provided from multiple sources with various media. While the EMS Training is delivered in a formal classroom setting, Material Safety Data Sheets and HW Training are conducted in the shops. Other information is transmitted through the in house TV system.

HM is distributed through eleven pharmacy style centers, and material usage is electronically recorded enabling real time reporting and true cradle-to-grave management of HM. The system also monitors the shelf life of all products in the stores. It will not allow the issue of an expired item. This ensures the HM we use on the aircraft is appropriate.



Most of our two part adhesives and sealants are purchased in large containers and mixed by certified personnel. They mix large batches of product, dispense into small quantity devices, and freeze them in liquid Nitrogen. They are stored at -40 degrees F until needed by the artisans. Each batch is tested before use to ensure the proper performance in our product. This process is cost effective by purchasing large containers and minimizing waste; plus the artisan receives the exact amount needed for the task, not a full container. We also purchase several other products in large containers and dispense into smaller ones for use by the artisans. This is also quite cost effective and efficient by providing the proper quantity needed.

FRC East is a Clean Air Act Title V facility. The Air Quality Program manages the monitoring and recordkeeping requirements for more than 1,000 emission sources using a computerized system to oversee the performance of 130 air pollution control devices. This system continues to improve efficiency and record-keeping quality while lowering monitoring cost by detecting issues immediately and alerting staff by electronic paging, allowing prompt resolution of problems. The quality of our HM records enables us to ensure the many detailed reports required by our air permit are accurate and complete. Since our HM program tracks usage in such depth and detail, we are able to be very precise and accurate in all records and reports required by the Title V permit and even anticipate trends that could be disadvantageous to our continued operation, while providing flexible support of production's HM needs.



BEFORE



AFTER



Container Shredding

Much of the HM packaging is managed through our Recycling Program. Currently we are recycling metal (including aluminum cans, paint cans, aerosol cans, drums, and scrap parts), wood, cardboard, toner cartridges, plastic, and paper. In FY2009 and FY2010 we recycled over 3.8 million pounds of solid waste. One of our most effective projects was improving the appearance of our beverage recycling containers. Easily distinguished containers encourage segregation of recyclables. Although we have recycled automotive type batteries for over 25 years, we recently initiated a joint project with the Defense Logistics Agency to return these batteries to the manufacturer for recycling. This is considered a “better” recycling option and yields a better cost savings than the previous method.

This year we initiated a tank and pipe labeling project that improves the welfare of our personnel and our surroundings. Consistent and highly visible, these new markings offer a quick reliable way to identify what substance we are dealing with in standard and emergency situations and how to address these issues.

Reductions in the quantity and severity of HM used helped inspire us to open FRC East’s first LEED-certified building. The project, a \$17 million new Engineering Product Support Facility, is the first building constructed in the former Hancock residential area off of NC Hwy 101. This location has been targeted as a key area for new FRC East facilities, with an emphasis on sustainable building practices and environmentally responsible land use. This first project set a high standard for future projects by going above the minimum requirement of LEED-Silver and achieving LEED-Gold designation.

The FRC East HM program enables us to operate an EMS that is mature, effective, and continually improving. In November 2003, FRC East became the first DoD facility to implement a comprehensive EMS incorporating its entire facility, fence line to fence line. Our award winning program is founded upon the ISO 14001 model and has been continuously registered through third party surveillance and reregistration audits, exceeding Presidential Executive Orders 13423 and 13514, DoD and DON requirements. We are the only Federal facility registered to the four major management standards: Quality (ISO 9001), Aircraft Quality (SAE AS9100), Environmental (ISO 14001), and Safety (OHSAS 18001). Since the inception of our EMS, objectives have been tracked through our HM program. The timely feedback provided has been indispensable in our education and awareness campaigns to reduce our HM usage and achieve our EMS targets. The fact that “you can’t control what you can’t measure” is never truer than in HM management.

The definitive goal of any EMS is the improvement in environmental impact. By managing our HM so absolutely, we are able to discern where we need to concentrate our efforts for the most efficient effect. We can continuously track HM usage by specific product to individual shops.

Senior management has recognized the basis for an effective EMS is proactive HM management and considers it essential in our role as an environmental steward. HM management is woven into FRC East’s Strategic Business Plan, which is developed using

the Hoshin methodology. The Executive Leadership Committee, serving as the management review board, holds regular meetings to update senior management on the progress of EMS goals.

FRC East integrates EMS practices into its core business functions through increased accountability for environmentally sensitive activities at all levels of the organization: production, engineering, logistics, contractors, military personnel, and management. This accountability is established and verified through routine management review meetings to evaluate environmental business initiatives and concerns, communication to personnel on progress toward environmental goals and issues, and employee recognition for success related to environmental goals. Integration of HM management into our process improvement programs (Kaizen, Lean Manufacturing, Six Sigma, 5S Plus One, Theory of Constraints etc.) has yielded unanticipated progress in HM usage by involving all levels of management and the personnel providing the “touch labor.”

One project streamlined the distribution of HM on the H-46 aircraft production line by providing the HM in specially designed and stocked carts at the site of use. As a result, the sheet metal trade is saving over \$575,000 per year in time and hazardous material. This sustainable practice reduced environmental impact by reducing waste and increased mission support through shorter turnaround time. The procedure was successfully transferred to other aircraft lines.



We are proud to serve the war fighter with a quality product, on time, at a good cost while advancing our efforts to safeguard the environment. FRC East has been a good neighbor to eastern North Carolina for over sixty years and we look to the future with anticipation of continued sustainable improvements, such as installation of an electrocoagulation system at our Industrial Waste Treatment Plant, more green purchasing, increased community involvement, and implementing future technological improvements.