

LCS CREW 102 - Environmental Quality Award Submission

1. Introduction:

LCS CREW 102 currently executes a vision of combating next generation threats. Assigned to USS FREEDOM (LCS 1) and USS FORT WORTH (LCS 3), LCS CREW 102 efficiently and effectively conducts prompt and sustained operations in littoral waters. With her modular design and operating concepts, both FREEDOM and FORT WORTH are valuable assets allowing LCS CREW 102 to deliver unmatched warfighting expertise in a specific warfare mission area. Armed with Surface, Anti-Submarine and Mine warfare modules, each crew of 54 Officers and Sailors boast a very specific capacity. We are fast, focused and fearless and our warfighting excellence is executed with grit and tenacity. Given the inherent proximity to land, our mission requires us to be environmentally conscientious and adopt a culture of sustainability; practiced through reduce, reuse and recycle. LCS CREW 102 is stationed in San Diego, CA.

2. Background:

2.1 Environmental challenges are continuous and often unforeseen, especially with a new class of ship. LCS CREW 102 has a fundamental responsibility to protect the resources that we cherish dearly and that list is inclusive and extensive. CREW 102 conducted 4 refueling at-sea evolutions, in port defueling, onload and offload of Hazardous Material (HAZMAT), and underway operations during whale migration season without incident or impact to the local environment; LCS CREW 102 takes pride in having ZERO incidences of inadvertent discharge. As new systems are tested and installed on board, our crew takes pride in placing responsible environmental practices at the forefront of mission success.

2.2 A culture of environmental responsibility and sustainability is embodied within LCS CREW 102; starting with the Commanding Officer and strictly enforced through prudent watch standing principles, Engineer Officer's Standing Orders and adherence to outlined procedures to ensure a prevention of inadvertent discharge of fuel, oil and HAZMAT via engineering systems. A coordinated effort is made with Littoral Combat Squadron One (LCSRON ONE) ensuring 100 percent compliance for Navy-wide requirements with regards to environmental policy. Specific individuals are designated and attend formal training to execute duties such as Fuel and Lube Oil Quality Manager, HAZMAT Coordinator, Oil Spill Response Coordinator and

Protective Measures Assessment Protocol Officer. Accountable and implementable environmental policy is a team effort and is a concept well understood among LCS CREW 102. All watch standers who operate the on board Oil/Water Separator system (OWS), Sewage collection system (CHT), Refrigeration, Air-conditioning (AC) system, Fuel/Lube transfer systems are highly trained, qualified, and understand direct and quantifiable environmental impacts of accidental discharge. Such training is incorporated for new members of the command during indoctrination. It is culturally valued and practiced for both ship and shore operations.

2.3 LCS CREW 102 receives strict and specific enforcement guidelines through LCSRON ONE, maintains procedural compliance and adheres to all reporting requirements disseminated by higher authority. Outside of Commanding Officer's Standing Orders and Engineer Officer's Standing Orders, the following LCSCREW102INST are maintained locally:

- Environmental Protection Policy. Reviewed NOV14.
- Asbestos Control Program. Reviewed JUL14.
- General HAZMAT Control and Management. Reviewed DEC13.

3. Program Summary:

3.1 LCS CREW 102 is in full compliance with Chapter 35 (Environmental Compliance Afloat) and appendix D (Afloat Environmental Checklist) of OPNAV M-5090.1, Environmental Readiness Program Manual.

3.2 Outstanding Achievements:

1) Many ships on the waterfront express the challenges of operating an OWS system. CREW 102 engineers maintained an effective OWS system throughout the reporting period. Through innovative techniques, properly validated PMS and Engineering Operational Sequencing System (EOSS) compliance, LCS CREW 102 was able to reduce generation of oily waste and was able to correct casualties via a comprehensive technical understanding of the system which is a tribute to the crew's level of knowledge about the system and the level of ownership.

2) A ship's single largest source of emissions is through exhaust of burned fossil fuels. Both FREEDOM and FORT WORTH are equipped with 2 Main Propulsion Diesel Engines (MPDE) and 2 Gas Turbine Engines (GTE). MPDE's are far more efficient at propulsion than GTE's. Therefore, as mission permits both FREEDOM and FORT WORTH operate on MPDE propulsion for the

preponderance of their time underway. Reducing the fuel burn rate is a priority of Readiness Control Officer (RCO) while standing the watch. It is also enforced through fuel burn charts posted at key watch stations and training that is regimented for all watch standers. As Navigation permits, ship's maneuverability is maintained by using only a single prime mover for maximum fuel efficiency. During operations in April 2014, CREW 102 operated in an efficient manner such that the ship maintained station for 12 days of underway operations between refueling events - an amazing feat for a platform that averages a refueling once every 3-4 days! Efficient fuel use principles are enforced with generators as well. The Crew operates to reduce electrical load on generators at all times.

4. Accomplishments

4.1 Air Pollution Control: To reduce the impact of greenhouse emissions emitted through combustion exhaust, LCS CREW 102's engineers are vigilant in maintaining specific engineering requirements to ensure effect of air pollution is minimized. Such philosophy is also maintained via fuel and lube oil quality programs to minimize adverse impact. FREEDOM and FORT WORTH use HFP fire extinguishing agent that is friendly for the ozone layer. Shipboard A/C units use R-143A, a much better alternative to traditional R-12, a chlorofluorocarbon (CFC). CFCs are ozone depleting substances (OZD) that can damage the Earth's atmosphere, as well as greenhouse gases that contribute to global warming. Although the hydroflouorocarbon (HFC) refrigerants that replace the CFCs are also greenhouse gases, they have lower global warming potential than the CFCs they replaced and lower impact on the Earth's climate. The converted HFC plants are also up to 15 percent more energy efficient than the older equipment. LCS CREW 102 and entire LCS community are a proud part of the Navy's environmental commitment.

4.2 Water Pollution Control: Water pollution control is essential in waters close to land. Any overboard water discharge is closely monitored for quality control. Tank levels are closely monitored, compliant with EOSS and executed by trained engineers during internal and external transfers. Training is conducted routinely and the crew is reminded of their environmental responsibility when the ship is conducting evolutions that could possibly result in a mishap. Oil spill kits are stocked, inventoried and drills are conducted to maintain operator proficiency. OWS levels are calibrated and maintained at 15 PPM or less prior to discharge. Before fueling at-sea, both Main Propulsion Assistant (MPA) and Engineer

Officer walk the fuel alignment to ensure no overboard discharge occurs. Sewage waste offload operations are always closely monitored by qualified personnel.

4.3 SW Management and Resource Recovery:

Solid waste is managed through a reduce, reuse, and recycle philosophy. No non-organic trash, plastics and non-biodegradable material is ever discarded to sea. It is held on board until return to port and responsibly discarded in appropriate designated bins. A culture of recycling is rooted within the crew both on hull and off hull. Solid hazardous waste is managed via Consolidated Hazardous Material Reutilization Program (CHRIMP) through an on hull coordinator with support from LCSRON. There were ZERO HAZMAT discrepancies and violations.

4.5 Protective Measures Assessment Protocol:

Southern California Operation Areas are prime migration waters for marine mammals transiting from the Pacific North West down to warmer waters of Mexico. It is our duty to respect the mutual waters we share. LCS CREW 102 bridge watch standers receive routine and accurate marine mammal training by the Navigator and is briefed at each navigation brief. PMAP is utilized extensively to ensure our interaction with mammals is positive.

4.6 Sonar Positional Report System: Not applicable. LCS CREW 102's operational experience is limited to Surface Warfare Package with no sonar systems installed.

4.7 Environmental Awareness: LCS CREW 102 advocates an all-encompassing approach and philosophy of environmental awareness, responsible use of limited resources and reducing the impact of naval operations on our surroundings. It is wholly accepted by the crew and practiced with a sense of urgency both personally and professionally.