

CNO ENVIRONMENTAL QUALITY LARGE SHIP AWARD NARRATIVE

1. INTRODUCTION. USS RONALD REAGAN (CVN-76) is the ninth aircraft carrier of the NIMITZ Class, home ported in Naval Base Coronado, San Diego, CA. Commissioned in 2003, our mission is to project power from the sea on a worldwide basis and to conduct sustained combat air operations in support of national tasking with minimal environmental impact. RONALD REAGAN (RRN), its air wing, and crew make up the most effective and versatile fighting vessel in the world with its crew of 5,100 RRN Sailors and Air Wing personnel. Our priorities while conducting our missions are:

- Defend the ship - Without an effective fighting ship, nothing else is possible. All other priorities must be subordinate to protecting the ship and keeping operational.
- Support the Staff - The power of our strike group comes from coordinating all our assets effectively.
- Support the Air Wing - The air wing is at the tip of the spear of a long sequence of events that puts weapons on targets.

2. BACKGROUND

2.1 Environmental challenges for the ship. In the past two fiscal years, RONALD REAGAN completed a 14-month long Docking-Planned Incremental Availability (DPIA), two Homeport Changes from San Diego, CA to Bremerton, WA and back to San Diego as well as the transition from the maintenance to basic phase of the Fleet Readiness Training Plan. Significant challenges faced by the command during these evolutions include: (1) careful coordination and joint efforts with Puget Sound Naval Shipyard and other outside repair entities in ensuring all personnel, civilian and military, comply with applicable environmental policies; (2) effective environmental awareness training of RRN crew and embarked personnel on proper operation of solid waste processing equipment, oil and hazardous substance spill prevention, response and reporting; (3) management and disposal of large volume of hazardous material and hazardous waste management during highly industrial DPIA period, and (4) accurate tracking of marine coating use for prompt reporting to Air Pollution Control District.

Underway, conducting day-to-day operations on a nuclear-powered aircraft carrier is a challenge in all respects. Among these challenges were safe handling of millions of gallons of JP-5, processing and disposal of oily wastes, sewage, and solid wastes, and upkeep and maintenance of all waste processing equipment.

While these challenges are unlikely to be different from those of our contemporaries, the great lengths we go to ensure compliance with all applicable regional, state, and local environmental laws and regulations is what sets us apart. Through the conscious effort of all hands, RRN had zero environmental violations and zero environmentally significant incidents in spite of operations in an unfamiliar shipyard environment and lack of experience in operating waste processing equipment during the transition from the maintenance to operational tempo.

2.2 Environmental management, organization, and staffing. The overall success of the environmental protection (EP) program is the responsibility of all hands. The Ship's Industrial Hygiene Officer, designated as the Afloat Environmental Protection Coordinator, is responsible for implementing EP program while the ship conducts operations in port and at sea. The S-8A Division Officer, designated as the Hazardous Material Coordinator, is responsible for the

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effective management and control of shipboard hazardous materials and hazardous waste. The Damage Control Assistant ensures that Flying Squad and Inport Emergency Teams are properly trained in immediate oil and hazardous substance (OHS) spill response in an effort to minimize damage and prevent accidental discharge into the environment.

To ensure all EP program requirements are met, the Safety Department utilizes a consolidated checklist of inspection items from OPNAVINST 5090.1C Appendix K, INSURV, and COMNAVAIRFOR to identify and track correction of discrepancies. Significant milestones and challenges are briefed during quarterly Environmental Compliance Board (ECB) meeting that are held in conjunction with Safety Council meetings. The ECB evaluates ship's compliance with requirements and assesses the need for special training, equipment and support personnel. In addition, a comprehensive audit of the command's environmental protection program is performed annually by the AEPC and reviewed by the Commanding and Executive Officers.

2.3 Environmental guidance, directives, and plans. RRN environmental instructions listed below are reviewed annually for accuracy.

- (a) REAGANINST 1412.2A, Bridge Watch Officer Qualification Requirements, 1 Feb 07
- (b) REAGANINST 1601.3A, Bridge Watch Team Notebook, 21 Nov 08
- (c) REAGANINST 3210.1E, Commanding Officer's Standing Orders for Underway Watches, 23 May 12
- (d) REAGANINST 3173.1D, Boat Bill, 10 Feb 13
- (e) REAGANINST 4021.1A, Over the Side Spill Contingency Plan, 12 Sep 13
- (f) REAGANINST 5090.1A, Shipboard Medical/Dental Waste Management Plan, 26 Feb 13
- (g) REAGANINST 5100.1A, Hazardous Material (HM) Control and Management Program, 10 May 11
- (h) REAGANINST 5100.2, Lead Control, 20 Aug 10
- (i) REAGANINST 8512.1A, Standard Operating Procedures for Otto Fuel Spills and MK46 Torpedo Handling Mishaps, 12 May 11
- (j) REAGANINST 9593.1A, Shipboard Solid Waste Management Program, 23 Sep 13.

3. PROGRAM SUMMARY

3.1 Environmental program (EP) and degree of compliance. Ensuring compliance will all applicable environmental program regulations during the DPIA period and during the transition from the maintenance phase to operational tempo presented challenges due to a number of factors including maintaining proficiency in the operation of waste processing equipment which were inactive for over a year, unfamiliarity with shipyard environmental requirements, and handling and disposal of increased volume of hazardous material used and hazardous waste generated due to extensive maintenance work conducted throughout the ship.

RRGN successfully maintained its high level of environmental readiness through the constant assessment of compliance with all applicable EP regulations and instructions as evidenced by the

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command's award history and sustained superior performance - 2011 CNO and SECNAV Environmental Quality Award (Large Ship) and achieving 100 out of 100 possible points during the 2012 and 2013 CNAP EP evaluation. We accomplish this through the use of consolidated INSURV, OPNAVINST 5090.1C Appendix K, and CNAP SOHME checklists, aggressive safety/EP walkthroughs, leadership involvement and personnel training.

3.2 Most outstanding program features and accomplishments.

(a) **Effective Hazardous and Industrial Waste Management.** Achieved zero environmental violations during DPIA through consistent all hands training in proper hazardous material and hazardous waste handling and disposal per Shipyard standards. Supply personnel who were assigned to issue, receive, store and handle hazardous materials and hazardous waste were sent to Code 900 Hazardous Waste Training, resulting in enhanced understanding and acceptance of Shipyard requirements. Environmental Protection was also emphasized during project meetings and through joint safety/housekeeping walkthroughs conducted by the Ship's Safety Department, Safety Representatives from Puget Sound Naval Shipyard (PSNS), and Outside Repair Organizations.

To prevent unauthorized disposal of debris and water in the dock, all overboard fixtures (i.e., deep sinks, deck drains) were marked with "Fish - No Dumping" labels to eliminate inadvertent discharge into the dock and the bay. This was considered as best practice to be implemented in subsequent ship availabilities.

(b) **Overboard Oil Spill Drills and EP Training.** Developed training and assessment cards (TACs) for overboard oil spill drills, similar to TACs in COMNAVAIRFORINST 3500.20D, CVN TRAMAN, which resulted in enhanced training and standardized drill evaluation. In addition, the command hosted two sessions of "Afloat Environmental Awareness and Response Training" (AEART) provided by the Regional Waterfront Environmental Coordinator for inport Command Duty Officers, Assistant Command Duty Officers, Officers of the Deck, and Senior Section Leaders. The AEART, comprised of local environmental compliance guidance for watchstanders, addressed the most common afloat environmental issues, environmental procedures and best management practices. The AEPC also provided "Oil Spill Prevention Training" to Reactor, Engineering and Air Department personnel on 26 Oct 2012 which resulted in 100 percent qualification of all personnel required to complete Oil Spill Prevention Team PQS (NAVEDTRA 43704) and qualification of at least Oil Spill Clean-up Supervisor for all firefighting team/duty sections.

(c) **Inport Recycling and Beach Clean-up.** Initiated and implemented inport recycling of paper, plastics, and aluminum cans in April 2013 through coordination with Naval Base Coronado Sustainable Solid Waste Program. Although the program was terminated due to loss of CNIC's funding to transport collected recyclables, the command is currently looking at other options for inport recycling. The command also conducted two beach clean-ups in 2013, a Silver Strand State Beach Clean-up in observance of Earth Day and the 11th Annual Creek to Bay Clean-up.

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4. ACCOMPLISHMENTS

4.1 Air Pollution Control. All hands completed initial and annual training on air pollution control requirements. In 2012 and 2013, the command maintained a completion rate above 90 percent in Air Pollution Control training, documented in R-ADM database.

(a) Volatile organic compound (VOC) release minimization. The ship significantly increased its marine coating and paint usage during DPIA. To ensure proper VOC reporting of daily marine coating used while the ship was in non-operational status, S-8A and Safety Department developed a paint usage log used in conjunction with HICSWIN to record and track information required by the local Air Pollution Control District. While not required after completion of availability and subsequent Homeport Change to San Diego, the command continues to utilize the daily paint usage log regardless of availability type or operational status.

(b) Engine emission control efforts. To reduce Emergency Diesel Generator (EDG) emissions, generators were only operated during required maintenance, emergent situations, and per Steam Plant Manual OI 18 Series. Ship continues to record the start time and estimated duration and reason for the light-off. Additionally, all operators completed training on “Minimizing exhaust smoke and emissions”, Diesel Trend Analyses, and Maintenance and Material Management (3M) Planned Maintenance System (PMS), emphasizing emission reduction efforts through minimized run times and use of EDG spark arrestors to filter out carbon molecules in the exhaust.

(c) Refrigerant use reduction efforts. The Air Conditioning and Refrigeration (A/C&R) shop reduction efforts of refrigerant usage and loss include use of installed Halon Carbon Monitors, preventive maintenance of equipment per 3M schedule, routine checks for leakage during maintenance, hourly monitoring of A/C plant gauges during operation to promptly identify leakage, and reuse of refrigerant transferred into storage tanks during system repairs. AC&R personnel investigate any drop in refrigerant levels of operating A/C plants.

4.2 Water Pollution Control

(a) Collection, holding, and transfer (CHT) system management practices. The Engineering Repair Division operates and maintains CHT systems per OPNAVINST 5090.1C to prevent overboard discharge of untreated or inadequately treated sewage or any waste derived from sewage within 0-3 nm of the U.S. shore. Routine maintenance is completed in accordance with 3M Planned Maintenance System (PMS) to prevent equipment malfunction. All operators and supervisors completed CHT PQS prior to duty assignments. All duty sections also have qualified personnel trained to handle CHT spills and leakage. While inport, discharge hoses are monitored during shore transfer to enable watchstanders to immediately secure pumping at a moment’s notice should a spill occurs.

(b) Oil and Hazardous Substance (OHS) Spill Prevention and Response. The transition from DPIA to operational tempo, in addition to homeport change, posed challenges in ensuring effective OHS prevention and response efforts. In addition to management practices discussed in paragraph 3.2 (b), all OHS spill kits were inventoried and properly maintained

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which resulted to zero discrepancies identified during the 2013 Mid-cycle Material Assessment and the CNAP Safety and Occupational Health Management Evaluation (SOHME). Prior to Refueling At Sea fuel transfers, pre-evolution briefs, safety walkthroughs and verification of equipment line-up are conducted to minimize risk of fuel spills. RRN continuously strives to reduce oil spills through proper preparation, rigid adherence to published procedures, and operational risk management during OHS movement evolutions. During some oil sheen sighting occurrences while moored in Naval Base Coronado, timely reporting of the watchstanders per regulatory requirements, ensured effective spill clean-up response. In the past two years, RRN had zero environmentally significant incidents.

(c) Oily waste system (OWS) management and oil content monitor capabilities. Bilge and oily wastewater are pumped from various machinery spaces to the Oily Waste Holding Tank (OWHT) which acts as a settling tank. Inport, the ship transfers oil/oily waste to NAVFAC shore facilities. During shore transfers, watchstanders are posted at the pier to observe and immediately report any spills or leaks. Completion of NAVFAC Pier Watch school is required prior to assignment. Underway, the oil waste separator equipped with oil content monitor ensures processed oil and oily effluents are discharged overboard only when oil content is below 15 ppm.

4.3 Solid Waste Management and Resource Recovery

(a) Solid waste management practices. As discussed in paragraph 3.2 (c), the command initiated inport recycling of paper, plastic and aluminum cans which was terminated after six months due to loss of funding. Currently, we continue to recycle cardboard, bulk metals, and wood. Underway, all solid waste is processed and managed in accordance with OPNAVINST 5090.1C and NSTM 593. The ship has six compressed melt units (CMUs) that melt and compress plastic waste into “pucks” which were safely stored aboard for shore disposal. Cardboards are torn into smaller pieces and incinerated. Pulpable materials are processed using two large and one small pulper. Glass and aluminum are shredded and placed in burlap sacks for overboard discharge beyond 12 nm. Weights are added, as needed, to ensure negative buoyancy. Watchstanders are properly trained on Commanding Officer’s Standing Orders and REAGANINST Solid Waste Management Instruction and abide with requirements to obtain permission from Chief of the Watch, Engineering Officer of the Watch (EOOW), and the Officer of the Deck (OOD) prior to any overboard discharge.

Continual training of RRN and embarked personnel on proper sorting of trash achieved smooth processing of solid waste generated at sea. Initial training during command indoctrination and annual refresher training using environmental training videos and powerpoint presentations prepared by Safety Department promoted environmental protection awareness and enhanced command-wide support in maintaining environmental stewardship while completing missions.

(b) Source reduction techniques. The command reuses tri-walls, pallets, hazardous and material sub-containers. The command improved shelf-life management by revamping the hazardous material issue and return process, color-coded labeling using hazard category code (HCC), and “first-in, first-out” procedures which reduced reordering and minimized waste generated.

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(c) Resource recovery recycling techniques. Empty toners and laser cartridges are turned in to Base Recycling. Dental amalgam is an inter-metallic compound comprised of various proportions of silver, copper, tin, and zinc alloy mixed with pure mercury. All dental scraps are stored in tightly closed containers, labeled and turned in to local Defense Reutilization and Marketing Office (DRMO) as RCRA- Hazardous Waste-Dental Metal Scrap.

4.4 Hazardous Material (HM)/Hazardous Waste (HW) Management. Increased use of hazardous material and volume of HW generated during DPIA presented challenges in managing the Hazardous Material Control and Management program. The Supply HM Division (S-8A) effectively operated the HM Minimization Center (HAZMINCEN) and the HAZWORLD, which are the centralized procurement and HW collection/offload locations, respectively. They accomplished this through coordination and joint efforts with the Puget Sound Naval Shipyard, Code 900/HW. All S-8A personnel received quarterly HM training per OPNAVINST 5100.19E. Upon homeport change to San Diego, the S-8A works with the Fleet Logistics Center (FLC) to screen for reusable materials for reissue, and transfer used or excess HM. In 2013, the command saved \$75,000 from procuring supplies from FLC. The HAZMINCEN is responsible for the maintenance of the HMIRS, receipt, storage and disposal of all used HM, and inspection of satellite HAZMAT lockers. The Consolidated HM Reutilization and Inventory Management Program (CHRIMP) provided centralized ordering, receipt, stowage, issue and disposal which allowed materials to be transferred from shore HAZMINCEN for reutilization and significantly reduced shipboard HW generation. This program utilizes Hazardous Inventory Control System (HICS) to track onboard inventory so no unnecessary HM orders were placed. Other significant program improvements include shelf-life management through routine storeroom records review and inventory and workcenter inspections to ensure all HMs are returned to HAZMINCEN, and ensuring compatibility of stored HMs by relabeling all shipboard HMs using color coded hazard category code (HCC) stickers. The use of color-coded HCC stickers simplified segregation of incompatible materials which contributed to safe HM handling and storage. These efforts resulted in better HM management, maximized shipboard HM reutilization and minimized HW generated for shore transfer.

4.5 Protective Measures Assessment Protocol (PMAP). Implementing the PMAP program event-specific protective measures enabled RRN to conduct training events consistent with Navy environmental policies. The planning and execution of various RRN training exercises during the Basic Training phase was enhanced by using the PMAP to help identify natural resource considerations and controls for endangered species and marine mammals within exercise locations. The protective measures were common shipboard practice, including posting of trained lookouts and ensuring critical habitat awareness. PMAP use has enabled the command to make informed decisions on training evolutions and minimize potential environmental impact.

4.7 Environmental Awareness. The success of the environmental program is an all hands effort. Sustained environmental awareness is key to accomplishing our missions during progressively demanding operational postures with minimal environmental impact. Constant efforts to achieve this include initial and annual all hands EP training, POD notes, briefing identified EP concerns to khaki leadership for implementation within their respective divisions.