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HAWAII P3 VISITS CORROSION CONTROL SHOP.

Members of the Hawaii Pollution Prevention Partnership recently visited the Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility's Corrosion Control Shop. The shop has received more than \$2 million's support from the Chief of Naval Operation's Pollution Prevention Equipment Program in an effort to reduce or eliminate pollutants and improve productivity.

After nearly three years of designing, planning, and partnering with the Naval Facilities Engineering Service Center, CINCPACFLT, Parsons Engineering Science, and other commands, a plastic media blasting (PMB) booth and dry filter paint spray booth were dedicated in June 1999. The equipment and booth is used to remove surface coatings from masts and antennas. The prepped components from the PMB booth are transferred to the paint spray booth for painting. The physical configuration of the booths maximizes the efficiency of the blasting and painting operations while preventing release of paint over spray into the environment. Previously, hand sanders were used to remove the paint.

Vision Statement

Enhance environmental quality in Hawaii through pollution prevention

Mission Statement

Through a committed partnership between Department of Defense and State of Hawaii, promote pollution prevention by developing and implementing model initiatives, building trust and validating results that protect our unique island environmental while maintaining national defense and community well-being.

Goals

*Improve information exchange
Better communication
P2 every day
Share ideas and work cooperatively
Foster working relationships
Develop qualitative and quantitative measurements
Support P2 markets*

HP3 Visits Corrosion Control Shop—continued from Page 1

Shop personnel used the PMB equipment on mast and antenna jobs from the *USS PAUL HAMILTON*, *USS RUSSELL*, and *USS REUBEN JAMES*. If hand sanding had been used on the masts and antennas it would have taken 472 work hours to complete these jobs. Using plastic media blasting allowed the job to be completed in 64 work hours, saving 408 work hours! The projected annual cost savings is \$100,000.

Abrasive Blast Booths. In an effort to reduce VOC emissions, Pearl Harbor Naval Shipyard and the Intermediate Maintenance Facility has been steadily increasing powder coating of components rather than spray painting. Two abrasive blast booths were installed to support powder coating operations. These process changes have prevented approximately 40,000 pounds of VOCs from being released into the atmosphere.



A Corrosion Control Shop supervisor, explains the plastic media blasting process to HP3 members during a recent tour of the facility.

Other P2 equipment obtained includes high volume low pressure (HVLV) paint spray guns, an aqueous parts washer, and an abrasive glove box unit.

DOD's BEST!

For the past few weeks, Environmental Division staff (Code 106.3) waited anxiously to hear the results of the highest level environmental award competition. After winning the Chief of Naval Operations Environmental Quality Award, PHNSY&IMF advanced to compete against two other naval activities for the Secretary of Navy's Environmental Quality Award.

Not only did PHNSY&IMF win the SECNAV award, but they went on to compete against Army, Air Force, and Marine Corps activities to win the DOD Environmental Quality award.

The Environment Division Head's, response on hearing the good news was, "Wow, this is great! First the CNO, then the SECNAV, and now the DOD Environmental Quality award. This is an honor. Everyone in our command played a role in our winning the environmental award. We should all be proud of ourselves."

The PHNSY&IMF Commander, said, "I'm just very, very proud of our personnel. Hawaii is such a beautiful place, and we all work hard to keep it that way. This award is well deserved recognition for every person in this command."

DOD's Best—continued from Page 2

The Department of Defense Environmental Quality award recognizes a command's efforts to protect human health and the environment by achieving *full* and *sustained* compliance with all applicable environmental requirements. These requirements include emphasis on environmental planning, waste management and pollution control, and identifying and addressing the threats posed by contamination from past operations. This award recognizes the outstanding and tireless efforts of PHNSY&IMF's sailors and civilians to preserve Hawaii's environment

and maintain our environmental program as one of the best in the Navy.

PHNSY&IMF is faced with a wide range of environmental challenges because of the myriad of complex industrial operations performed at our sensitive ecological location. The greatest challenge is integrating environmental controls into current work practices without adversely impacting cost and productivity. Our personnel work aggressively to pursue innovative methods to achieve and exceed environmental compliance requirements.



Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility's Environmental Division personnel.

As a participating member of the Hawaii Pollution Prevention Partnership (HP3), PHNSY&IMF entered into a formal pollution prevention partnership with the State of Hawaii and the U.S. Environmental Protection Agency. HP3 is designed to promote pollution prevention as the first choice of doing business by developing and implementing model initiatives; building trust; and validating results that protect our unique island environment while maintaining our national defense and community well-being.

DOD's Best!—continued from Page 3

During fiscal years 1999-2000, we've used pollution prevention initiatives to reduce or eliminate waste generation and disposal in many waste streams. Renegotiations of our spent grit disposal contract resulted in annual savings of \$1 million. P2 initiatives have reduced waste generation by more than 28 million pounds and air emissions by more than 40,000 pounds--resulting in savings of more than \$4 million.

By implementing aggressive initiatives in our solid waste program, we have diverted more than 401,355 tons of non-industrial and industrial waste from our landfills and incinerators, resulting in a 52% diversion rate.

Our Environment Division staff is actively involved with community activities. We have conducted environmental training and science fair judging at local schools, and participated in beach and highway clean-ups, and recycling.

Our command's environmental programs have improved production efficiency, reduced maintenance cost, and prevented violations and negative publicity for the Navy. By proactively managing our environmental programs, we are at the forefront of implementing new technologies and processes. We are committed to the Navy's vision of environmental leadership while effectively executing naval operations.

FASTT TEAM VISITS PEARL HARBOR NAVAL SHIPYARD AND INTERMEDIATE MAINTENANCE FACILITY

"We don't have the money to buy state of the art equipment. It costs too much and takes too much time to comply with environmental requirements. There's got to be a better way to do this job." Sounds familiar? Performing high quality ship maintenance and repair on schedule, within budget AND meeting regulatory compliance requirements, is increasingly difficult to accomplish when faced with budget shortfalls. What can we do to improve our work processes and how do we obtain new technology? *Answer: Call the FASTT Team!*

The FIELD ACTIVITY SUPPORT AND TECHNOLOGY TRANSFER, aka FASTT program, is sponsored and managed through the Naval Sea Systems Command (NAVSEA). The maintenance and environmental offices of the Commander in Chief, U.S. Pacific Fleet, the Commander in Chief, U.S. Atlantic Fleet, the Army, and the Air Force support the FASTT program with technical expertise and funding.

The FASTT concept is unique because it focuses DODwide expertise on the environmental and maintenance process challenges that face us today. But what's it all about? FASTT personnel perform on-site assessments. These assessments focus on maintenance processes and environmental requirements from the operator's and technicians viewpoint. Using this approach, the team searches for solutions that will protect the environment and reduce the command's workload and, if possible, reduce cost. Emphasis is placed on finding, developing, and implementing only those material substitutions, work process changes, and technology acquisitions that will decrease the worker's burden.

*FASTT Team Visit Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility--
continued from Page 4*

In November 2000 a pre-survey visit was conducted at PHNSY&IMF to determine the correct FASTT team skill mix, size, and activity-specific areas to be addressed. Based on the data gathered during this visit, a team of 18 engineers, scientists, and technicians were selected from the Navy, Army, and Air Force to perform a two-week survey of PHNSY&IMF facilities and maintenance processes. The goal was to help operations and maintenance personnel meet environmental requirements while performing their mission on schedule and at lower cost. The survey began on January 29th, with a FASTT team briefing of department and shop leaders. The briefing outlined the team's purpose and procedures. Next, FASTT team members interviewed shop personnel to identify opportunities for cost reduction and risk avoidance.

Some of the shops that requested assistance from the FASTT team include: Crane Maintenance; Quality Assurance; Inside Machinery; Plastics Shop; Valve Shop; Recycling; Metallurgical Lab; Facilities; Photo Lab; Industrial Plant Maintenance; Shipfitters; Periscope; Motor Rewind; Calibration; Pipe Insulation; Lumber Mill; and the Solid and Hazardous Waste Branch. The out brief was held on February 9th. Attendees included PHNSY&IMF's Commander, department heads, and shop superintendents. During the out brief the FASTT team presented 60 recommendations which included the potential annual cost savings of \$1.2 million if all recommendations are implemented.



FASTT Team members

*FASTT Team Visit Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility--
continued from Page 5*

So, what happens now? A copy of the FASTT team survey will be provided to designated shop superintendents and department heads. They will review the recommendations that apply to their shops or work processes and evaluate them for implementation. Each recommendation includes the name and phone number of an expert(s) who can help us implement the initiative. Our Environmental Division personnel (Code 106.3) will assist and will monitor our progress. If a recommendation includes the purchase of equipment that can be obtained from the Chief of Naval Operation's Pollution Prevention Equipment Program our Environmental Division personnel will submit the procurement request. The FASTT program will send a three person follow-up team in 18 months to review our progress.

PHNSY&IMF is the first shipyard that the FASTT team has visited. Let's take the FASTT team's recommendations and aggressively implement them.

Happy ending? You bet. Activities that implement FASTT recommendations are reporting astounding results. Many have realized savings that exceed the FASTT estimate within the first three years. During 1995-97, the former Naval Intermediate Maintenance Facility improved productivity and realized annual savings of more than \$500,000 by implementing the majority of the FASTT team recommendations.

ARIZONA MEMORIAL TOUR BOATS MAY CONVERT TO BIODIESEL FUEL

The Department of Energy is funding a project to convert the Arizona Memorial tour boats to biodiesel fuel. This project is being funded through the Green Energy Parks Initiative. But what is biodiesel and why should we care about this conversion?

Biodiesel, otherwise known as mono alkyl esters, is a cleaner-burning diesel replacement fuel. It's made from natural, renewable sources such as vegetable oils. Just like petroleum diesel, biodiesel operates in combustion-ignition engines. Essentially no engine modifications are required, and biodiesel maintains the payload capacity and range of diesel. The biodiesel manufactured in Hawaii is waste cooking oil that was previously land filled.

Additionally, biodiesel use will result in:

- Cleaner air since using biodiesel will lower exhaust emissions.
- Less life cycle greenhouse gas emissions because the carbon in the feedstock is recycled.
- Less waste will be sent to the landfill because the primary feedstock of Hawaii biodiesel is waste cooking oil that was previously land filled.
- Better energy security using a domestically produced fuel rather than a petroleum based fuel.
- Reduced spill hazard since biodiesel is non-toxic. Spill concerns will be significantly reduced after conversion to B100.

There are two phases to the project. In the first phase three boats will be converted to biodiesel operation—one tour boat, one grey boat, and one work boat. This includes inspecting and, if

ARIZONA Memorial Tour Boats May Convert to Biodiesel Fuel—continued from Page 6



necessary, cleaning the fuel system, replacing any natural rubber fuel lines or seals, and testing the injectors. Operational testing on these three boats will take from 7-14 days.

One of the *USS ARIZONA*'s tour boats.

Next, assuming that the operational testing is completed with satisfactory results, Port Operations will contract to have the remaining 12 boats converted for biodiesel, or B20, operation. The Navy will collect data on boat operation, and also monitor the fuel and engine oil condition.

If, after the boats have operated on B20 one year with no operational or engine wear problems, the project will transition to B100. As always, this transition will depend on available funding.

Here's how responsibilities for this project are shared:

- U. S. Department of Energy, Seattle Regional Office: Responsible for project funding, oversight and overall project coordination. This includes technical support and liaison with the engine manufacturers, Engine Manufacturers Association, fuel injection equipment manufacturers, and project participants.
- Naval Station Pearl Harbor, Port Operations: Responsible for vessel preparation, including fuel system inspection and cleaning, refueling, operation and maintenance.
- Naval Facilities Engineering Service Center (NFESC): Responsible for B20 contracting and purchase, and refueling infrastructure support. This includes on-site refueling system cleaning and conversion, coordination with naval station HAZMAT and environmental entities; spill containment and contingency plan modification, and tank cleaning and residue disposal. NFESC is also responsible for B100 sampling and testing; engine oil analysis; and semi-annual reporting.

P2 OPPORTUNITY ASSIST COMMITTEE—HP3 IN ACTION

Our committee was established to provide on-site assistance to installations. Our goal is to identify opportunities and recommend P2 technologies or practices to reduce hazardous waste or hazardous materials and disposal costs. Goals also include: sharing P2 information; providing site visits to requesting partners; and helping partners develop new P2 initiatives.

Meetings were held to define our approach to our goals and decide our plan of action. The committee has members from Hawaii Department of Health, Army, Navy, Air Force, Marine Corps, Army Reserves, and the Coast Guard.

We decided to first look at vehicle maintenance because it's an activity common to most of the committee members. Members were tasked to submit initiatives and process changes from their P2 plans. The committee collected and compiled the information each partner had on vehicle maintenance.

The committee looked at the information submitted by each installation. They found that many of the vehicle maintenance facilities had implemented numerous P2 improvements to either eliminate or reduce waste streams. The committee's next step was to consolidate the P2 improvements and compare them. Once this information is reviewed it will be disseminated to all the partners. The committee is reviewing all waste streams from DOD installations and P2 technologies that have been implemented. This information will be provided at the August HP3 meeting.

FY00 SECDEF P2 TEAM AWARD WINNER

On May 2nd, the Environmental Compliance and Protection Department was recognized as the winner of the FY00 Secretary of the Navy Environmental Security Award for Pollution Prevention (Team) at the Navy Memorial in Washington, DC.

The Marine Corps Base Hawaii Pollution Prevention Team successfully developed and implemented innovative pollution prevention initiatives, which not only ensured compliance with environmental laws and regulations, but also improved combat readiness through increased efficiency.

The Hazardous Materials Consolidation Program saved \$1.34 million in FY99-00. Installation of weapons cleaning systems, using a non-toxic solvent, reduced Marine Corps labor by over 50%, saving \$4 million annually.

By taking a comprehensive systems approach to our environmental challenges and by looking at issues with a long-term perspective, Marine Corps Base Hawaii has demonstrated a steadfast commitment to enhancing our reputation as an organization that sets the standard for environmental stewardship, while providing responsive support to our nation's defense.

FURNITURE REUSE PROGRAM

Bachelor Enlisted quarters at Marine Corps Base Hawaii are being remodeled or rebuilt at a furious pace. Although these projects result in quality of life improvements for the Marines, they

Furniture Reuse Program--continued from Page 8

also produce a great deal of waste. A quick way for Marines to clear out a barracks is to throw the furniture off the upper floors. After one such demolition project, every truck was filled with waste intended for the landfill and still a huge trash pile remained to delay the project. Even furniture carefully removed became trash after exposure to the weather while awaiting transport to the Defense and Reutilization and Marketing Office (DRMO).

The Environmental Department P2 Team looked for alternatives to make better use of resources and reduce waste. Several community organizations were interested in the waste furniture, and Marine Corps Base Hawaii partnered with the State of Hawaii and DRMO to donate the furniture to local homeless shelters and other qualifying organizations.

The paperwork moved through all of the government organizations prior to removal so that the furniture could be picked up and loaded by the charities within a few days instead of weeks. Furniture was fork lifted off upper floors when necessary to prevent damage and then staged according to durability--with upholstered furniture and mattresses stored indoors and solid wood items staged in parking lots.

During the spring of 2001, Marine Corps Base Hawaii donated 22.3 tons of furniture valued at \$59,011 to local charities. The project saved the federal government \$9,025 in trash processing, transport, and disposal.

Additionally, Marine Corps Base Hawaii has earned the gratitude of many homeless shelters that were able to provide their clients with beds for the first time. Everybody wins! The county landfill may just last a little longer--and waste, that was a liability to the Marine Corps, becomes an asset to the local community.



Marine Corps Base Hawaii personnel stage the furniture for pickup by local charities.

***A NATURAL SOLUTION TO AN ODIFEROUS NUISANCE
PWC WASTEWATER TREATMENT PLANT INSTALLS BIOFILTRATION SYSTEM***

One of the unpleasant by-products of a wastewater treatment plant is the “rotten egg” smell that permeates the air. The odor comes from hydrogen sulfide gas (H₂S), naturally produced by decaying organic matter, which is released from the facility’s sewage sludge.

To help reduce the odor produced at Navy Public Works Center, Pearl Harbor’s (PWC) Wastewater Treatment Plant at Fort Kamehameha, a biofiltration system is being installed at the plant’s headworks--the site where raw sewage first enters the plant. J.A. Jones Management Services, Inc. was awarded the \$657,000 construction contract in December 2000. The work is scheduled for completion in mid-June 2001.

Although widely used in Europe, biofiltration is a relatively new pollution control technology in the United States. It works by removing and oxidizing compounds from contaminated air using microorganisms. The air pollutant, in this case H₂S, first passes through a humidifier and then through several beds of filtration media. The media consists of a specific mixture of compost, soil, peat, and gravel or clay and is placed in trays or containers.

“The great thing about this system is that it’s environmentally friendly,” said the Utilities Plant Manager. “The filter media is organic so there are no more hazardous chemicals for our workers to handle.” Due to the initiative of plant operator, the media recipe was obtained from the manufacturer enabling the plant to produce its own supply. This capability will help keep operation costs down.

This new system replaces the Lo-Cat Odor Control System, a process that uses a proprietary iron solution to “scrub” the H₂S-laddened air as it passes through a tall column and highly corrosive caustic soda to control the pH. The gritty sulfur slurry produced from the process, H₂S gas, and caustic soda also affected the Lo-Cat equipment causing the system to constantly break down.



“Biofiltration was already being used at the plant’s centrifuge building where water is removed from sludge,”
“Knowing the technology works well there, we wanted to install the same system at the headworks.

A Natural Solution to an Odiferous Nuisance –continued from Page 10

Working with Commander, a Navy Region Hawaii Safety Specialist and an Environmental Engineer, a Plant Engineer was able to qualify the plant for Hazardous Abatement Fund monies provided through the Pacific Division. “We were very fortunate to have so many people supporting us.” “Project funding was actually lost earlier because of a change in the qualification requirements but everyone fought for us and we were able to get the funds reinstated.”

The biofiltration units recently arrived on site and the contractor is making good progress toward completing the project and turning over the eagerly awaited system to plant personnel.

REVIEW OF THE HAWAII POLLUTION PREVENTION PARTNERSHIP
By: DOD Regional Environmental Coordinator, Region IX

In developing and implementing this cooperative prevention pollution (P2) partnership, Department of Defense Region IX personnel have identified successful, practical, strategies to enhance environmental compliance and foster pollution prevention-based solutions for material handling and disposal challenges in Hawaii. The Department of Defense Regional Environmental Coordination Office (DOD REC) initiated the first P2 partnering effort in Hawaii on 6 April 2000. The DOD REC requested that the Naval Facilities Engineering Service Center provide the leadership and facilitation for the P2 Partnership. This agreement has led to a very successful program for the DOD REC, Hawaii service components, and the State of Hawaii. On 15 November 2000, both the DOD services and the State of Hawaii signed the official charter.

Our vision is to enhance mission readiness and promote environmental stewardship among DOD in Hawaii and state agencies. This hands-on working partnership promotes pollution prevention as the first choice to achieve compliance. The partnership has, and will continue to promote research, development, and implementation of cost-effective technologies and other processes that can be transferred to industry and to other government agencies.



Members of the Hawaii Pollution Prevention Partnership.

Further, through this effort the partnership has developed and implemented pollution prevention initiatives between the regulators and federal agencies--building trust, fostering cooperation by sharing ideas and resources, and validating results. Additionally, this partnership recognizes and supports effective leveraging of declining resources by providing cost effective environmental protection and by reducing environmental compliance costs. For example, the partnership has formed committees to deal with a number of issues that impact military

Review of the Hawaii Pollution Prevention Partnership—continued from Page 11

installations as well as the state. These committees are dealing with environmental issues such as waste oil, and used tires, and have formed a pollution prevention opportunity assessment team. The P2 opportunity assessment team's goal is to assist installations identify and/or recommend technologies and best management practices to achieve and maintain compliance through pollution prevention.

Articles in this newsletter were contributed by members of the Hawaii Pollution Prevention Partnership. This partnership includes representatives of the Department of Defense and the State of Hawaii. The views and opinions expressed in this publication are not necessarily those of the Department of Defense or the Hawaii Department of Health. All inquiries should be addressed to the Environmental Quality Division Director, Naval Facilities Engineering Service Center. Telephone DSN: 551-2638, 805-982-2638.