

2004 SECRETARY OF DEFENSE ENVIRONMENTAL AWARD

# Environmental Quality Award Overseas Installation



MISAWA AIR BASE, JAPAN



## INTRODUCTION

Misawa Air Base (MAB) is located on the northern tip of the main island in Japan, approximately 400 miles north of Tokyo. The 35th Fighter Wing (35 FW) is the host unit at MAB. The base has the unique distinction as the only combined, joint service, bilateral installation in the western Pacific, with units assigned from every branch of the United States Armed Forces. In addition to the U.S. forces coalition operating from MAB, the installation hosts Japan's Northern Air Defense Forces (NADF), the Japan Air Self Defense Force (JASDF) 3rd Air Wing, and provides runway access for the Misawa Community Airport.

MAB serves as home station to more than 16,100 active duty, U.S. and Japanese civilian employees, and U.S. dependents. The 35 FW's mission is to "help defend Japan and promote regional security in the Pacific by providing forward presence, deployable forces, and quality mission support." The wing flies two squadrons of the Block 50 model F-16CJ and F-16DJ Fighting Falcon. Its pilots fly air-to-air weapons delivery exercises over water and sharpen their air-to-ground skills using the Draughton Range located 12 miles north of Misawa. The base's environmental outreach activities and strong partnering with governmental and community stakeholders has resulted in a positive geo-political atmosphere. In addition to its strong environmental ties with the host nation, Misawa boasts an unparalleled environmental alliance between the Air Force and Navy, including joint operations of the HAZMART Pharmacy, the Hazardous Waste Storage Facility, and a jointly managed base Spill Response Team. These strong partnership principles also extend to other base DoD and Japan Self Defense Force agencies. Through strong program management, the implementation of numerous environmentally friendly, cost-saving initiatives and benchmark partnerships, Misawa has truly integrated environmental stewardship with mission accomplishment.



## BACKGROUND

The base's environmental programs are primarily managed by the 35 FW's Environmental Flight (CEV). CEV consists of 2 U.S. civilians, 3 U.S. officers, and 6 Japanese National civilians. Due to real world requirements and personnel turnover, the Environmental Flight has operated 30-40 percent undermanned over the past 2 years. Despite these obstacles, a positive "Can Do" attitude has led to continuous mission accomplishment.

The history and location of the installation presented environmental challenges when MAB inherited a contaminated groundwater plume that resulted from a 400,000 gallon fuel tank explosion 50 years ago. Local government officials were concerned with the possibility of contamination of municipal drinking water wells due to the plume's close proximity to the wells. The base's strong stakeholder involvement and environmental track record led to a comprehensive study on impacts to potable water resources, as opposed to immediately launching a more costly remediation program. In 2004, the \$450,000 study and a bilingual briefing was presented to City and Prefectural officials demonstrating that natural attenuation was effective at degrading the fuel constituents and the potable water wells were safe. The confidence of the local community allowed the base to use alternative treatment methods that saved millions of dollars over typical pump and treat remedial actions.

The climatic conditions at MAB also present some unique challenges. Misawa winters are long and harsh with average annual snowfall exceeding 125 inches. To accomplish the 7,000-plus sorties flown during the winter months, the base consumes approximately 1.8 million pounds of pavement, airfield, and aircraft deicers annually. Recognizing the potential adverse impacts this amount of chemical applied in the environment could produce, especially considering MAB's storm water feeds the area's commercial fishing lakes and is used to irrigate Japanese farmers' fields, a team of Misawa environmental professionals and local stakeholders researched and jointly selected magnesium chloride



as the preferred pavement deicer. Teamwork between professionals and stakeholders secured continuous accomplishment of the mission, protection of the environment, and served in solidifying international relationships.

Over the last two years, the Environmental Flight, with the support of base leadership, developed a robust Unit Environmental Coordinator (UEC) program, and as a result, the installation has reaped tremendous benefits. Under the program, every commander assigned primary and alternate UECs to be their focal points for managing environmental issues within their organization. At Misawa, this translated into 22 organizations comprised of Air Force (AF), Navy, Army, and Department of Defense (DoD) organization personnel. Environmental Flight personnel developed training lessons that enhanced the environmental potential of the UECs through classroom and field exercises. With encouragement from MAB leadership, the base achieved a 100% training success rate for each organization despite continuous personnel turnover.

The UEC program became a springboard for the success of the installation's Environmental Management System (EMS). The UECs filled key EMS development and implementation roles, such as completion of gap analysis, development of the implementation plan, aspect/impact analysis, and training of individual unit personnel. The UECs also fill roles as members of the Hazardous Material Management Program (HMMP) Cross Functional Team (CFT), the Affirmative Procurement Program (APP), and Environmental, Safety, and Occupational Health (ESOH) assessors. Each of the CFTs report quarterly to base leadership at the Environmental Protection Committee (EPC) meetings. These EPC meetings enhance the visibility and importance of the environmental programs at Misawa.

**PROGRAM SUMMARY**

The mission of CEV is to ensure environmental excellence at MAB by perpetually striving for 100% environmental compliance with the Japan Environmental Governing Standards (JEGS). MAB prevents future pollution by reducing the use of hazardous materials and release of pollutants as near to zero as feasible, conserving natural and cultural resources through effective environmental

planning, and reducing health and safety risks created by past operations, vastly improving Misawa's living and working environment.

To ensure successful mission accomplishment, the flight established mission objectives.

CEV MISSION OBJECTIVES
<ul style="list-style-type: none"> <li>• Incorporate environmental consequences of proposed actions and reasonable alternatives into all levels of decision making</li> </ul>
<ul style="list-style-type: none"> <li>• Facilitate an annual ESOH Compliance Assessment and Management Program (ESOH CAMP) assessment to identify all compliance deficiencies and effectively manage the findings to closure</li> </ul>
<ul style="list-style-type: none"> <li>• Promote a progressive pollution prevention program by acquiring state-of-the-art pollution prevention technologies and improving training and awareness</li> </ul>
<ul style="list-style-type: none"> <li>• Ensure proper and expedient hazardous material spill response procedures</li> </ul>
<ul style="list-style-type: none"> <li>• Identify environmental opportunities and constraints as the foundation of the base comprehensive plan for installation development</li> </ul>
<ul style="list-style-type: none"> <li>• Protect and manage environmental resources under AF stewardship within the public interest</li> </ul>
<ul style="list-style-type: none"> <li>• Provide and accurately track comprehensive hazardous waste (HazWaste) manager and handler training</li> </ul>

The flight aggressively pursued the objectives set forth; listed below are highlights of MAB's success.

- Misawa accomplishes an ESOH CAMP every year, and in 2004 assembled a 53 member team that identified 273 deficiencies and developed closure recommendations during a week-long assessment.
- Through research, CEV personnel discovered a new treatment technology capable of removing heavy metals from industrial wastewaters. In compliance with the JEGS, approval to perform HazWaste treatment on the installation was obtained from the Environmental Executive Agent, COMUSJAPAN. Following positive test results, a full scale treatment project was accomplished that eliminated 400,000 lbs of HazWaste and saved the installation \$200,000 in disposal costs.

In 2004, Misawa earned top AF honors by winning the General Thomas D. White Environmental Quality Award (Overseas Installation), and the General Thomas D. White Cultural Resources Management Award for the Individual/Team category. Furthermore, through base partnership



initiatives, Naval Air Facility Misawa was recognized by the Japan Prime Minister's Office with the prestigious "Zenko-Kai" Community Service Award for Environmental Actions.

During 2003-2004, GeoBase was the mantra at MAB. Base personnel made tremendous improvements in environmental performance through in-house development and implementation of geographic information systems (GIS) technologies. Misawa personnel populated GeoBase layers with more than 40,000 points, data lines, and other pieces of information. A key piece of MAB's GeoBase initiative surrounds the environmental-related data. Specifically, all location and attribute information for the base's 296 underground and aboveground storage tanks, 53 HazWaste accumulation points, 96 oil/water separators, and 72 hazardous material points have been loaded into GeoBase, as well as data pertaining to cultural resources inventories and on-base vegetation.

### **ACCOMPLISHMENTS – EMS IMPLEMENTATION (PROGRESS TO DATE) POLLUTION PREVENTION AND WASTE REDUCTION EFFORTS (ALL MEDIA AREAS)**

Misawa is leading the way in implementing pollution prevention initiatives. In 2004 the base completed construction of a \$5.7 million fire training facility. The facility was designed with numerous environmental aspects in mind. One major improvement was the construction of a water containment and reuse system, which protects precious groundwater resources, and eliminates contaminated stormwater runoff. Another enhancement included conversion to liquid petroleum gas as a flame initiator, which eliminated harmful kerosene and water residues and saved valuable funds from annual oil/water separator maintenance. Construction of the facility allowed the base to conduct joint training exercises that strengthened base/community alliances. The first joint training event included 74 firefighters from 5 local communities and led to significant improvements in northern Japan's response



capabilities for handling aircraft structural fires. The training event received positive international media coverage and highlighted the base's determination to build strong community ties.

Misawa solved a four-decades-old problem of lead deposition into the environment with the construction of a new indoor Combat Arms Training and Maintenance (CATM) facility. The \$1.9 million state-of-the-art CATM facility captures spent lead bullets from M-9, M-16, M-240, and M-249 weapons proficiency training and automatically deposits them into a drum for safe storage. Once full, the drum is turned into the Misawa Defense Reutilization and Marketing Office (DRMO) under the Qualified Recycling Program (QRP), which reduces HazWaste disposal charges. This also allows the base to capture revenue when the scrap metal is eventually sold.

The ventilation and exhaust system at the facility filters out harmful airborne lead particles. The filters are disposed of as HazWaste ensuring the toxic lead compounds do not enter the environment. By preventing lead from entering the environment, improvements are made in stormwater quality.

MAB's environmental professionals achieved impressive results in a multitude of program areas. Personnel established an American lead-acid battery recycling procedure, eliminating an 82,000 lb hazardous wastestream and saving \$48,000 in the process. The resourceful HMMP Team reutilized 57,428 lbs of runway deicer, avoided HazWaste disposal, and saved \$49,000. Petroleum, Oil and Lubricant (POL) wastestreams were driven to zero through the implementation of an aggressive Energy Recovery Program that captured 197,000 lbs of waste fuel and saved \$102,000 in disposal charges. An incinerator responsible for dioxin emissions was eliminated by installing 11 classified shredders. The new shredders sustained mission security and preserved community health. Industrial processes were modified and \$870,000 executed to remove 58 oil/water separators that were no longer necessary; this led to a savings of \$86,000 in annual Operation & Maintenance costs.



Flight staff completed research, and secured earth-friendly herbicide equipment that targeted and destroyed weeds, reducing pollutant loading to the installation's potable water supply lake. Misawa personnel staged a full-scale multi-media assault to battle a series of solid waste violations; broadcast commercials, an informative environmental webpage, signs, and base flyers were used to promote the solid waste message and encourage recycling. MAB personnel recycled 320 propane cylinders which were turned into DRMO as scrap metal and saved \$6,000 in disposal charges.

In 2004, MAB took the next step in environmental management by combining the EPC with the Integrated Safety Council (ISC). The new joint EPC/ISC meeting format realized the efficiencies of the ESOHCAMP assessment approach by eliminating redundant meetings and providing leadership with a better focus on environmental, safety, and occupational health programs. The combined format supports the base's initiative to implement an EMS that includes safety and occupational health protocols.

### **EFFECTIVE USE OF FUNDS**

MAB's Environmental Flight strives to carefully manage the use of public funds when developing and implementing environmental programs. More than 80 highly hazardous chemicals, in various stages of degradation, were identified in a local high school chemistry lab, posing varying degrees of danger to students and faculty. Flight personnel removed, packaged, and disposed of the chemicals; eliminating the hazard with in-house resources saved an estimated \$100,000 over hiring contract support.

Proactive program leadership led to a cost effective solution for managing Bird Aircraft Strike Hazards (BASH). Plagued by a marked increase in bird activity around the flightline, CEV staff partnered with U.S. Department of Agriculture (USDA) for answers. For a minimal cost, a two-person team visited MAB for a week-long site visit and assessed the entire BASH program. Consideration was given to the type and characteristics of the bird species presenting the hazard, the environmental

factors, and the physical and political constraints. USDA staff then created a report of recommended courses of action that the base now utilizes to successfully reduce potential BASH hazards. Employing services of agencies outside DoD was a first for Misawa, and the result was a top-notch product at nominal cost.

### **COMMUNITY RELATIONS**

MAB strengthens community relations through a wide spectrum of Earth Day events. Earth Day at Misawa culminates a series of events conducted throughout the year that promote earth-friendly principles and increase awareness of Japanese culture. MAB Earth Day activities kick off each March with the annual release of 200,000 baby salmon into a local river. Farmers, school children, community leaders, MAB personnel, and JASDF personnel all participate in the yearly event. The release regularly garners constructive Japanese television and newspaper coverage that details the international collaboration.

Each April, the base partners with Misawa City and the Misawa Fish Port Association to cleanup a local fish port and public beach. The 2004 event drew more than 500 Japanese and American participants who successfully removed 10 tons of



trash. April also hosts the annual Earth Day Picture Contest. During this creative event, children draw pictures displaying what Earth Day means to them. In 2004, the Base Exchange prominently showcased the 350+ entries and placed the winning drawing on reusable canvas grocery bags. The Navy sponsored Oirase Gorge Clean-Up kicks off each year in May. Flight staff collaborates with Navy coordinators to participate in the event and enhance community relations. This spring event involves several hundred volunteers cleaning and preparing the 14,826 acre national park for the heavy tourist season—a million plus tourist visits. A rice planting and harvesting event is coordinated during June and October with the local community to give MAB personnel the opportunity to participate in a subsistence method vital to the Japanese way of life. In July, the base partnered with the Misawa City Board of Education



Archeologist for the public display of artifacts recovered on MAB, some of which were more than 9,000 years old. The artifacts were put on exhibition in a local museum and viewed by more than 15,000 multi-national observers. The exhibit and bilingual storyboards received great praise from the curator and visitors.



Additionally, MAB helps to build a solid environmental foundation with the children in the local area. Bilingual briefings and base-wide beach clean-ups are coordinated to teach students of the surrounding area about the importance of protecting the

environment and conserving natural and cultural resources. With the help of a local Japanese archeologist, an educational tutorial was developed introducing students to the intricacies of crafting Jomon period pottery. Each of the programs promotes environmental stewardship and fosters strong relationships among installation personnel, surrounding community residents, and neighboring military branch offices.

### ENVIRONMENTAL PLANNING AND ANALYSIS

Long range planning was the key to MAB's outstanding Environmental Impact Analysis Process (EIAP) program. Utilizing the visions of the 2004 AF Outstanding Civil Engineer Senior Military Manager and the 2004 AF Outstanding Community Planner, personnel prepared a Base Comprehensive Plan (BCP) to meet AF, Navy, Army, Marines, and JASDF current and projected mission requirements. Misawa environmental personnel then completed a full review and evaluation of every project in the BCP, prepared the appropriate level of documentation, and successfully eliminated costly project delays. The developed EIAP documentation provided a detailed analysis of the environmental consequences of the proposed action, reasonable alternatives, and the necessary mitigation for any environmental impacts to be insignificant. The outcome was informed and effective decision making.

Significant EIAP documentation prepared included a \$40 million AF military construction project package for an aircraft parking apron expansion combined with a Type III Hydrant Fuel System installation/expansion. Careful environmental evaluation, a cultural resources investigation and recovery effort, and mitigation to replace lost habitat allowed base leadership to approve the project with the environmental consequences considered insignificant.

The majority of MAB's facilities are plagued by the presence of lead based paint (LPB) and asbestos, driving the need for an increased level of environmental analysis prior to completing any projects affecting those facilities. Recognizing the base has excellent LBP and asbestos management plans and procedures for handling these hazards during the project execution process, personnel sought a way to reduce the EIAP requirements. A solution was identified and programmatic environmental assessments were prepared so that these types of projects can be categorically excluded from detailed environmental planning, saving valuable workforce hours.

### SUMMARY

The MAB Environmental Quality program distinguished itself through superior program management and by employing innovative and cost effective solutions to address environmental challenges. A prime example is illustrated by the industrial wastewater treatment project that converted 400,000 lbs of HazWaste into non-HazWaste and saved the government \$200,000 in disposal costs. The partnerships between the 4 military services operating on Misawa are impeccable. Specifically, the AF and Navy partnerships at the Joint Hazardous Waste Storage Facility, the Joint HAZMART Pharmacy, and the Joint Base Spill Response Team are a benchmark for DoD. Misawa's Cultural Resources program is the pride of the Pacific, successfully recovering more than 7,000 artifacts and returning them to the government of Japan for public display. Misawa Air Base excelled in all areas of environmental stewardship inclusive of natural and cultural resources conservation, pollution prevention, facilitating solid relations with the surrounding community, and the implementation of numerous environmental programs.