



Environmental Awards

Environmental Quality – Overseas Installation
Yokota Air Base

Introduction

Yokota Air Base (AB) is the headquarters for the 5th Air Force, the United States (US) Air Force's oldest continuously serving Numbered Air Force, and home of the 374th Airlift Wing. The Air Base is responsible for tactical air-land, airdrop, aeromedical, and distinguished visitor airlift. As the primary Western Pacific airlift hub for peacetime and contingency operations, the 374th Airlift Wing provides airlift for the movement of passengers, cargo, and mail to all Department of Defense (DoD) agencies in the Pacific area

of responsibility and provides transport for people and equipment throughout the Kanto Plain and the Tokyo metropolitan area.

The 374th Airlift Wing is composed of four groups, each of which manages several of the installation's 17 squadrons. More than 3,500 military members and American and Japanese civilian employees make up the workforce, which supports 32 tenant units and a base populace of 14,400. The Wing includes the 36th Airlift Squadron, which flies the C-130H Hercules, and the 459th Airlift Squadron, which flies UH-1N

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helicopters and the C-12J Huron. In total, the Wing has more than 20 aircraft.

Yokota AB is also home to US Forces Japan, a joint service headquarters coordinating matters affecting US and Japanese defense relations, and the 5th Air Force, whose mission is to enhance the US deterrent posture and, if necessary, provide fighter and military airlift support for offensive air operations. Yokota AB hosts several tenant units, including the 515th Air Mobility Group, which manages air mobility operations throughout the Western Pacific, and the Japanese Air Defense Command.

Yokota AB is located on the island of Honshu, Japan, approximately 28 miles northwest of Tokyo. The base is surrounded by densely populated urban areas. It occupies 1,750 acres of land and lies within the political boundaries of five municipalities. With the exception of approximately 15 acres of natural habitat at the extreme southern boundary of the installation, the entirety of Yokota AB has been urbanized.

Background

The 374th Civil Engineer Squadron's Environmental Element is responsible for environmental stewardship at Yokota AB as well as 17 Geographically Separated Units within Japan. The Environmental Element manages 13 Wing environmental programs with a \$2 million budget, is responsible for 4,000 acres, and supports 32 units and \$4.3 billion in infrastructure.

The Environmental Element comprised of US and Japanese civilians works multiple environmental programs. As an overseas installation, manpower is often a challenge with civilian turnover rates between three to five years, extensive in- and out-processing procedures, and delays in hiring and

placement. Other challenges include sensitivity to the political atmosphere and compliance with Japan Environmental Governing Standards. The Team is supported by three full time contractors in the Hazardous Waste Storage area, bio-environmental personnel, and 25 Unit Environmental Coordinators dispersed base-wide.



Environmental Element Staff

Yokota's Environmental Element staff consists of the Element Chief, Hazardous Waste Manager, Hazardous Materials/Solid Waste Manager, Natural/Cultural Resources and EIAP Manager, Administrative Specialist, and three full-time Hazardous Waste Storage Area Contractors. Vacant positions include the Environmental Management System/Inspections Manager, Toxics Manager, and Water Quality Manager.

Significant environmental aspects and mission challenges identified during the accomplishment period are summarized below. The accomplishments section expands upon these topics and demonstrates Yokota AB key successes.

- *Fuels Management.* As an Airlift Wing, over 25 million gallons of jet fuel are stored on a daily basis. This quantity alone justifies fuels management as a significant environmental aspect. Combined with high-turnover staffing, the Environmental Element is faced with

the challenge of ensuring all fuels personnel stay trained and all infrastructure remains properly maintained. Even with these challenges, Yokota continues to meet mission requirements without any significant spills.



Bulk Fuel Storage

Because of the 374th Airlift Wing mission, Yokota Air Base is required to keep large amounts of fuel stored on a constant basis. Although managed very well, the pure bulk of fuel stored requires the Petroleum, Oil, and Lubricants program to be a significant aspect with a high level of scrutiny each year.

- *Toxic Materials Management.* For both polychlorinated biphenyls (PCBs) and asbestos, the Japan Environmental Governing Standards are more strict than US environmental laws. The legal threshold for PCBs in Japan is 0.5 ppm, compared to 500 ppm in the US. Asbestos-Containing Material (ACM) in Japan is defined as any material containing more than 0.1% asbestos by weight, while in the US, ACM is defined as any material containing more than 1% asbestos by weight. Additionally, the US banned most uses of asbestos in 1989, while Japan did not ban asbestos use until 2004.

- *Waste Water Management.* Japanese building codes require that an Oil Water Separator (OWS) be installed with each tank secondary containment, parking lot, and maintenance shop. Yokota AB, therefore, has an inventory of over 100 OWSs that it has to pay to maintain. If not maintained properly, the OWS provides a false sense of security that it is keeping pollutants out of waterways.
- *Solid Waste Management.* Space is an extremely valuable commodity in Japan. Therefore, all solid waste is segregated for reuse, recycling, and incineration.

The high turnover and high operations tempo of an overseas location provides its own challenges. That, in addition to the challenges of more stringent environmental regulation by the host nation, creates the need for a team that is capable of continuously educating new personnel and meeting unique environmental regulatory requirements. Yokota AB continues to meet that challenge and ensure the base mission continues without impact.

Summary of Accomplishments

Waste Reduction Efforts

The Yokota AB Environmental Element tackled PCB waste disposal, solving a seven-year DoD issue. 300,000 pounds of PCB waste was shipped to the US for disposal during the accomplishment period. This complicated effort included support from the 374th Civil Engineer Squadron, 374th Logistics Readiness Squadron, 374th Contracting Squadron, 730th Air Mobility Squadron, Defense Logistics Agency, and Yokohama Navy Port. Yokota AB's efforts were lauded as a best practice by the Defense Logistics Agency and have been used as a

reference for other DoD bases facing similar issues.



In-house Transformer Draining

Prior to shipping contaminant-containing transformers overseas for disposal, any transformer that was leaking had to be drained. The Environmental Element was able to drain five transformers in-house, saving \$10,000 in potential contracting costs.

During the accomplishment period, the Hazardous Waste program sponsored two eight-hour overseas hazardous waste courses, attended by 70 base personnel representing 11 base organizations. Training course participation helps to reduce both safety and environmental risks. The Hazardous Waste program also inspected 34 initial accumulation points, and disposed of 41,000 pounds of waste, ensuring base-wide compliance. The Hazardous Waste program also removed over 6,000 pounds of hazardous material from the Chitose Communication Site. This closed a forty-

year discrepancy, allowing the DoD to hand the site back over to the Japanese government free of contamination and ready for productive re-uses.



Containment Shipment

Yokota AB shipped 300,000 pounds of polychlorinated biphenyls to the US for disposal during the accomplishment period. This was a highly critical, highly coordinated effort, bringing together the joint engagement of three service agencies. Yokota successfully removed the largest hazardous waste inventory in the Pacific Air Force, all without incident, and has been lauded for its best practices and identified as an example facility by Defense Logistics Agency officials.

Environmental Compliance

During the accomplishment period, Yokota AB revamped its environmental inspection process from a one-time, week-long event to a more frequent, less time-demanding schedule to smooth out the workload across the year. Continual inspections are completed in-house by environmental program managers saving the Air Force \$98,000 per year in contract support. Using an in-house team also allows program managers to work with the base Inspector General (IG) office to coordinate inspections in concert with other base-wide programs, resulting in fewer shop interruptions. In total, Yokota AB performed 71 compliance assessments and inspected 128 work centers during the accomplishment period.

Environmental Management System

Yokota AB hosted quarterly Environmental Management System (EMS) Cross Functional Team meetings, chaired by the Mission Support Group Deputy Commander, and advised 45 base representatives on best practices, changes in regulations, and new database tools. By reviewing trends in spill reports and discussing best management practices used to avoid these trends, the Cross Functional Team helped reduce spills by 64%. One CFT meeting included a demonstration from one of Yokota AB's maintenance shops. Presenters shared their Hazardous Materials storage, Hazardous Waste initial accumulation point, and fuel tank management efforts, allowing Unit Environmental Coordinators to see how their counterparts across the base met environmental requirements.

In another effort to communicate environmental requirements base-wide, EMS efforts were presented weekly at newcomer orientation, which reaches 1,000 new personnel each year. Applicable requirements, such as waste segregation, spills and fuels management, and natural and cultural resource concerns, were communicated to all base-personnel.

Effective Use of Funds

Yokota AB has championed switching to compressed natural gas as a primary alternative fuel source for 90 vehicles. Compressed natural gas emits 90% less carbon monoxide and 40% less nitrous oxide than its gasoline counterpart. Additionally, after receiving \$125 million, Yokota AB was able to switch heating fuel from diesel to natural gas. The switch to natural gas has resulted in a savings of \$2.6 million annually, and air pollution has been reduced by 5%. The energy program also authored a weekly *Turn Stuff Off* campaign, increasing Wing

reduction awareness. The program resulted in a 5.2% natural gas reduction compared to the FY15 baseline.

Yokota AB partnered with the nearby US Naval Base at Yokosuka to recycle eight tons of batteries and 12 tons of scrap metal, saving \$12,000 in contractor disposal costs. The Solid Waste program also changed how toner cartridges are recycled, recycling them locally versus mailing them back to their manufacturer, saving both fuel use and reducing carbon dioxide emissions.

A study was completed to weigh the pros and cons of the Yokota AB incinerator dilemma. Results of the study will allow for an educated decision on whether to pursue off-base disposal of waste in the future or to rebuild the incinerator facility. The base is also exploring options to either rebuild an on-base segregation facility or require base personnel to segregate waste at the source.



On-base Segregation Facility

Japanese workers at the recycling center sift through trash thrown out by the Yokota community. The workers do this to ensure recyclable material is separated from any items considered unrecyclable. The recycling program is just one of many proactive environmental efforts underway at Yokota AB to ensure compliance with environmental laws.

Community Relations

A key to the success of the Yokota AB environmental program is the Environmental Element's strong community relations. Being cognizant of the sensitive position of an overseas base while balancing compliance, readiness, and political sensitivity, the Environmental Element consistently extends a hand to neighboring communities, remaining transparent and openly sharing programmatic information. Yokota AB hosted twelve tours at the Tama Hills Recreation Area, showcasing cultural history and biodiversity. Tours have fostered lasting relationships with over 250 visitors. A recurring tour program for Inagi City residents was so impressive that their neighboring Tama City is now coordinating with Yokota AB public affairs to schedule regular tours for their city as well.

During the accomplishment period, the Cultural Resources Manager translated 70 years of Yokota AB history from English to Japanese. The resulting product was printed as a weekly series in the *Fuji Flyer*, an on-base newspaper. Numerous notes of thanks and appreciation were sent to the public affairs office in response to this effort.

Annual Earth Day events allow for community outreach opportunities as well. Celebrations have included ten eco-tours, three tree plantings, student tours of the base incinerator and recycling center, a recycled art contest, and a bike and walk to work day, promoting physical fitness and reducing the carbon footprint of the already crowded Yokota AB streets and parking lots. A base clean-up was also held, resulting in the collection of over 500 pounds of waste.

In addition to providing tours and educational events, Yokota AB also reaches out to

support local city informational needs. Yokota AB shared endangered species data with Inagi City in advance of a \$110 million highway project. The base also shared Northern Goshawk survey data with the Tokyo Government, forging bilateral partnerships while protecting endangered species.

Environmental Planning and Analysis



Golden Orchid Relocation Project

Yoshitaka Yamaguchi, an Environmental Engineer with the 374th Civil Engineer Squadron, finishes planting a Golden Orchid at the Tama Hills Recreation Area. The plants had to be relocated from Fussa City in order to preserve them, due to their shade requirement.

The majority of Yokota AB Natural Resources management occurs at the 483 acre Tama Hill Recreation Area. The Environmental Element is responsible for managing habitat that is home to 90 endangered species, including 25 birds, five mammals, 25 insects, three amphibians, ten reptiles, one fish, and 21 plants. Management has been successful largely as a result of erosion mitigation and species monitoring. By executing a \$60,000 species management contract, Yokota AB was able to install vegetative stabilization, decreasing erosion and sedimentation into the Shrine Pond. Yokota AB was also able to dredge the

pond annually and relocate a small portion of the fish population to an alternate location, the “Hill Top Pond.” Fish in this pond flourished, increasing the population of the endangered Loach Fish by 243% since 2013. In order to protect the endangered Northern Goshawk, breeding hazards were identified and construction projects were modified to eliminate hazards. Proper planning with environmental inputs avoided project delays while protecting endangered species. Tama Hill Recreation Area is also opened to local nationals annually to collect leaf debris for their own mulch collections. This allows for a necessary maintenance effort to occur at no cost to the Air Force.

When a base has \$195M in construction in one year, the possibility of impacting a monument or culturally significant site is high. To avoid such impacts, the Cultural Resources Program Manager worked in conjunction with the base historian to create a Memorial Park. Seven monuments were relocated to the Memorial Park, protecting them from future harm while providing a centralized location for base personnel to visit and educate themselves on the rich history of Yokota AB.