



2021 Secretary of Defense

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 Air Force's oldest continuously serving Numbered Air Force, and home of the 374th Airlift Wing. The 374th Airlift Wing executes rapid global mobility through agile airlift operations across the Indo-Asia-Pacific region. It is responsible to the 5th Air Force commander for C-130J, UH-1N, and C-12J operations, including tactical air-land, airdrop, aeromedical and distinguished visitor airlift. As the primary Western Pacific airlift hub for peacetime and contingency operations, the 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 comprises 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, supporting 32 tenant units and a base populace of 12,000+. The Wing includes the 36th Airlift Squadron, which flies the C-130J Hercules, and the 459th Airlift Squadron, which flies UH-1N helicopters and the C-12J Huron.

Yokota AB is also home to US Forces Japan, a joint service headquarters coordinating matters affecting the 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 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. Except for 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 Yokota AB environmental stewardship and 16 Geographically Separated Units (GSU) within Japan and five GSUs in Australia. The Environmental Element manages 13 Wing environmental programs with a \$2 million budget and is responsible for 4,000 acres, supports 132 varied organizations, and \$9.0 billion in infrastructure.

The Environmental Element is comprised of the US and Japanese civilians who work in 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. Three Hazardous Waste Storage Area contractors, bio-environmental flight personnel, and 25 Unit Environmental Coordinators provide base-wide support for the Environmental Element.

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's key successes.

- *Fuels Management.* As an Airlift Wing, over 25 million gallons of jet fuel are stored daily. 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.
- *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. Complicating compliance with these more restrictive standards, the US banned most uses of asbestos in 1989, while Japan did not ban asbestos use until 2004.

- *Waste Water Management.* Japan 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 the responsibility to inspect and maintain an inventory of over 100 OWSs. If not maintained properly, the OWS provides a false sense of security that it is keeping pollutants out of water systems. Though not directly specified by Japan Environmental Governing Standards, stormwater sampling is conducted to ensure the protection of local community waterways and demonstrate Yokota's determination to be good guests to the beautiful Host Nation.



Stormwater Sampling

As part of a JEGS' annual requirement, Naito Environmental contractors are sampling to make sure the stormwater on YAB does not contain any harmful chemicals that could drain into the Tama River.

- *Solid Waste Management.* Space is an extremely valuable commodity in Japan; therefore, all solid waste is segregated for reuse, recycling, and incineration. The Solid Waste manager continually evaluates local needs and conditions to ensure the most appropriate waste management activity is executed.

The high turnover and high operations tempo environment of an overseas location provides its challenges. That, in addition to the challenges

of more rigorous environmental criteria for some program areas, 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 (all media areas)

During the accomplishment period, Yokota AB managed 13 programs with nine members and a \$2M budget. Yokota AB supported 32 units and 21 geographically separate units (GSUs) within a \$9B infrastructure. Yokota employed an environmental inspection process that reduced the need for one-time shop ramp up for inspection requirements. The team performed more frequent inspections spread out throughout the year which resulted in a smooth, balanced work load throughout the year. The continual inspections are completed in-house by environmental program managers and saves the Air Force \$98,000 per year in contract support. Using the 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 FY20, Yokota AB conducted 174 environmental inspections and identified/corrected 17 out of 19 significant discrepancies, which increased environmental compliance by 90%. The Hazardous Waste program managers used bilingual expertise to train 378 U.S. and Japanese personnel on the Hazardous Materials/Hazardous Waste (HM/HW) program. The environmental team conducted 113 self-inspections, and identified 12 minor Unit External Inspection deficiencies that were all closed within six months.

After learning of a fire at a sister installation in Japan where calcium hypochlorite spontaneously ignited while being moved, destroying the HM storage facility and releasing toxic gasses, the HW and HM program managers proactively began to reduce the inventory of the material. The large inventory was a centralized procurement by AFCEC due to regional tension and was distributed to the Readiness Flights in Japan to be used as a neutralizing agent if needed. The program managers carefully planned, safely re-packed as directed by Defense Logistics Agency (DLA) Disposition Services (DS), and removed over 18K pounds of unstable calcium hypochlorite, also known as High Test Hypochlorite (HTH) material from combustible and chemically degraded cardboard boxes into plastic drums.



Re-packing HTH for Environmental, Health & Safety

This re-packing of HTH was initiated due to a fire at a sister installation that was caused by deteriorated HTH containers. The containers at the installation were expired and also deteriorating, which created a, now known, fire hazard. All expired containers have been removed from the base and disposed of properly.

Expert coordination with the Civil Engineer's Fire Department and Readiness flight and Bioenvironmental Engineering were key to the successful execution of the plan. The extremely volatile material required repackaging for safe transportation and proper disposal via the DLA.

As high temperatures affected volatility, environmental staff worked with Civil Engineer Operations to create an air-conditioned warehouse space to decrease the chance of spontaneous combustion while waiting for disposal. These efforts eliminated the threat of toxic fire, which would have resulted in significant loss of infrastructure and potential loss of life.

The Solid Waste team partnered with the United States Fleet Activities Yokosuka's Qualified Recycling Program (QRP) and reclaimed 8.9 tons of scrap metal, 53 tons of batteries, and avoided \$50K in disposal costs. Furthermore, the Solid Waste team established a pet waste receptacle program, using a \$10K service contract, and installed 19 receptacle cans along family housing residences to prevent exposure



Earth Day Community Clean up

This annual joint venture between YAB and JASDF consisted of picking up litter along the streets bordering YAB. This group of volunteers contained US civilians, US military, and JASDF. This event is held each year to raise awareness, show the local nationals that YAB cares about the local community, and to help do our part.

to disease and bacteria. This initiative also improved the quality of life for the entire installation population by ensuring pet waste were not left in parks, resident yards or disposed of improperly in neighborhood household trash bins. Lastly, during Earth Day 2019, the Environmental team led 437 joint personnel to

clean the east and west side annexes of the installation. This led to the proper collection and disposal of over 1,000 pounds of solid waste material.

Environmental Management

Yokota AB hosted quarterly Environmental Management System (EMS) Cross-Functional Team meetings (chaired by the Mission Support Group Deputy Commander), coordinated with 33 squadrons, and educated wing leadership, resulting in the installation being in full conformance with ISO 14001 requirements. Also, Yokota AB fostered a steadfast community outreach program and executed 86 environmental bi-lingual awareness briefings, which resulted in the education of 2.6K Yokota AB military/civilian personnel. Furthermore, 80% of the flight attended advanced training, attained ten new environmental certifications, and had zero significant unit effectiveness inspection (UEI) findings. Yokota AB Environmental Element also authored an inaugural quarterly Yokota AB bilingual HAZMAT newsletter, which educated 11K civilian/military personnel and contributed to zero reportable mishaps in CY19. Lastly, the Storage Tanks Manager created a presentation/manual for the STAR (Storage Tank Accounting and Reporting) system that significantly simplified training on the STAR system. Ultimately, Air Force Environmental leaders adopted and distributed this STAR manual throughout the United States Air Force for use by all installations.

In another effort to communicate environmental requirements base-wide, the Environmental Element presented EMS programs weekly at newcomer orientation, which reaches 1,000 new personnel each year. Environmental Element personnel presented and communicated applicable environmental requirements to all base-personnel, including waste segregation,

fuel spill prevention and management, and natural and cultural resource concerns.

Effective Use of Funds

Yokota AB Environmental program managers participated in collaboration with the Energy Manager, the Secretary of the Air Force and the Government of Japan to launch a \$167M Energy Savings Performance Contract (ESPC) and leveraged 22-year cost shares. This ESPC resulted in a decrease in energy/utility costs of \$15M per year. A revamped floodlighting project upgraded 27 light poles with 196 LED ramp lights. This \$665K project significantly increased visibility and slashed energy costs by \$65K a year. Also, HVAC and light usage is being regulated, which is on track to save \$30M and 11K BTUs, respectively, a year. These efforts powered an \$871K LED conversion, saved the Army & Air Force Exchange Service facility \$150K in energy/maintenance costs/Savings to Investment Ratio in less than three years. Yokota AB utilized solar along with no heating or cooling to reduce base consumption and saved 6M kWh and \$2M per year. With integral support of the environmental team, these energy saving efforts helped improve the local environment by reducing the local carbon footprint by 7.2M kg CO2 per annum. Lastly, environmental program managers successfully secured \$3.2M for an emergent requirement request project to modernize the sole incinerator for the installation. If the incinerator became inoperable, there would have been a build-up of trash around the base which would have posed serious health risks. This mission critical asset increased the life cycle of the facility and provided security for Yokota's key waste management solution.

Community Relations

Yokota AB championed a joint Earth Day event that consisted of planting a Memorial Weeping Cherry with the Japan Air Self-Defense Force (JASDF) while promoting a bilateral alliance and the green initiative. Yokota AB hosted six ecological tours at Tama Hills, a geographically separated recreation area in Inagi City, Japan (10 miles from Yokota AB) which serves Yokota and nearby installations. The ecological tours showcased the Air Force's conservation policy and efforts to 150 Japanese nationals along with installation leadership and members.



Natural/Cultural Resources Tour at Tama Hills

This picture depicts one of six ecological tours that were held at Tama Hills to demonstrate the Air Force's conservation policy and the USFJ's environmental engagement strategy. These tours allow local nationals to visit a resident natural and historical site that they would normally not have access to.

This was lauded by the Inagi City Mayor. Yokota AB also facilitated five biological excursions that educated Girl Scouts, spouses groups, and city officials on Yokota AB's Japan wildlife protection. Yokota AB donated a recently unearthed Imperial Japanese Army machine gun to the Fussa City Museum in a ceremony that celebrated 75 years of peace.

Yokota AB partnered with a Japanese biologist and presented Air Force threatened and endangered species information at the Inagi City Festival. Yokota AB also lobbied for a modification to a road construction project. This

modification protected a 350-year-old Zelkova tree and preserved the heritage/partnership with Fussa City. Yokota AB collaborated with the Government of Japan to turn in PCB transformers locally, which eliminated five years of storage and obtaining EPA waivers for CONUS disposal. Lastly, Yokota AB provided bi-lateral coordination with the Tokyo Metropolitan Government to share geospatial data to support the refurbishment of the conduit tunnel for stormwater diversion and detention to prevent and/or deter flooding of multiple Tokyo wards in the event of typhoons, sudden large rainfall, etc. The efforts assured "zero" US Government impacts to Host Nation infrastructure upgrades.



WWII Imperial Japanese Army Aircraft Autocannon (Machine Gun) donation to local Library

This unique historical artifact was unearthed at a construction site on YAB. It was subsequently donated to the Fussa City Board of Education as a symbol celebrating 75 year of peace. The machine gun was put on display at the Fussa City Library Museum for a short period of time to allow local nationals to view a part of their history. This joint effort between YAB and Fussa City helped to both strengthen our working relationship and reinforce our bonds of friendship.

Planning, Analysis, and Implementation

The majority of Yokota AB Natural Resources management occurs at the 483 acre Tama Hill Recreation Area. The Environmental Element is responsible for managing a 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. The Yokota AB Natural Resources team worked with the North Kanto Defense Bureau (NKDB) to survey a flying squirrel sighting near the Tama service annex and completed the Japan threatened and endangered species surveillance project.

A superb in-house stormwater re-engineering solution was executed to clear a 128-mile drainage system. This action eliminated flooding and prevented pollutants from reaching the local community waterways.



In-house Incinerator Stormwater Project

During an inspection of this incinerator wash rack, it was discovered that wash water with debris was by-passing and overflowing the OWS leading to the stormwater drainage (top). A concrete curb was constructed to ensure wash water flowed to the OWS before entering the stormwater drainage (bottom).

Yokota AB validated the Integrated Natural Resources Management Plan (INRMP) renewal on time in 2020 while upholding the protection of 114 wildlife species. The INRMP provided a comprehensive approach to ecosystem management and the team supported execution points of a 3-decade Natural Resource Management program. In addition, the team led post-typhoon recovery efforts and contracted erosion repairs of a historical road at Tama Hills Recreation Area before the collapse, consequently safeguarding key infrastructure. Yokota AB also hosted headquarters cultural resources training and synchronized best practices across three nations.

Yokota AB initiated a host nation archeological investigation at Itazuke airfield, which halted scheduled construction and salvaged Japan's natural artifacts. Furthermore, Yokota AB installed a night vision system to monitor nocturnal mammals and constructed an alternate nursery that resulted in "zero" losses of loach fish to predators in 2019. Yokota AB updated all-natural resource Geographic Information System data allowing the base to demonstrate wetland biodiversity/local ecosystem sustainability to the Host Nation to effectively resolve their concerns.

Yokota AB created bilingual natural and cultural resources brochures for both children and the elderly, along with educating Yokota AB newcomers and inspiring 11K personnel to preserve nature, protect the natural environment and influence multiple generations. Environmental staff conducted a biological survey, which led to protecting/relocating 81 plants in less than a week. This survey propelled the \$13M North Runway Overrun construction project which eliminated a 50 year airfield violation waiver where installation traffic had to traverse the flight line to reach the East side of the base. In addition, program managers sheltered a northern goshawk nest site, released four fledglings, and in doing so, boosted the population to more than 36 birds in 20 years. This upgraded the Ministry of Education's rarity rank, thus illustrating the effectiveness of the natural resources program efforts to protect and strengthen the endangered species numbers. Lastly, Yokota AB Environmental staff recognized and responded to the Lefua echigonia (Loach) fish crisis by dredging 15 years of sediment from a stormwater pond. This critical action cleared harmful sediment that had reduced the water flow needed to support the Loach fish viability.