



# A Success Story

## Johnston Atoll Chemical Agent Disposal System



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# Mission Complete

The numbers speak volumes: more than 412,000 obsolete chemical weapons—*bombs, land mines, rockets and projectiles—all destroyed. More than four million pounds of nerve and blister agents destroyed. Only one recorded incident for each 200,000 man-hours worked, or what one could compare to work in a typical business office.*



### ***Numbers aren't the whole story.***

Completion of the mission at Johnston Atoll Chemical Agent Disposal System, or JACADS, is a proud accomplishment for the U.S. Army Chemical Materials Agency (CMA). First and foremost it means a safer world. Aged chemical munitions from as far back as World War II, along with their potential risks, were eliminated for good. Further, JACADS represents technology and processes that have been proven safe and effective without harmful impacts on the environment, the work force or communities.

1796



*Discovered by Capt. Joseph Pierpont, Boston, when his brig Sally ran aground.*

1807



*Johnston Island, one of four in the atoll, named after Capt. James Johnston who claimed official discovery.*

1858



*Annexed by both the United States and the Kingdom of Hawaii.*

1898



*Officially annexed by the U.S.*

## Success: The Work Force



*"The nine years of experience I got on Johnston*

*Atoll helped prepare me for my experience at Pine Bluff Chemical Agent Disposal Facility. I got to learn a lot of things so that I can help make the processes at Pine Bluff a little bit shorter because we were the prototype at Johnston Atoll. There were things that we tried at the island, and sometimes they didn't succeed, but we learned lessons from those. And that's what we've brought to the program, experience to help Pine Bluff run smoother and more quickly."*

— Rebecca Ann Long,  
Quality Control,  
Pine Bluff Chemical Agent  
Disposal Facility,  
Pine Bluff, Arkansas

Thousands of highly dedicated and skilled workers were vital to bringing the JACADS project to successful completion. Leaving home and family far behind, workers lived on Johnston Island for months at a time—*always within sight of the disposal facility*—immersed in the project.

After completion of the JACADS mission, many of these dedicated workers—*technicians, operators, scientists, engineers, mechanics, clerks, team leads, supervisors, managers, and other government and contractor personnel*—chose to work at other sites in Alabama, Arkansas, Indiana, Maryland, Oregon and Utah. JACADS provided millions of man-hours of hands-on experience for these personnel, expertise that is now used to destroy remaining stockpiles at other sites.

*A portion of the work force stands on the crushed coral cap at the site of the former chemical weapons disposal facility on Johnston Atoll.*



1926



President Coolidge established Johnston Atoll as a federal bird refuge.

1934



Executive Order 6935 transferred control to U.S. Navy.

1942



Shelled by Japan shortly after attack on Pearl Harbor.

1942-1945



Submarine supply point during World War II.

# Success: The Environment

Protecting the environment is a key value to CMA and its program of chemical munitions disposal.

Environmental concerns were a major priority throughout the project at JACADS, especially because of the area's sensitive ecological systems.

In 1926 Johnston Atoll was added to the U.S. National Wildlife Refuge

system in order to protect its tropical ecosystem and wildlife. The atoll's ecosystem includes extensive coral reefs and tropical terrestrial habitats on its four islands. Hundreds of thousands of seabirds inhabit and raise their young on the atoll, with migrating shorebirds spending winters there. Myriads of tropical fish and invertebrates such as



1948



*U.S. Air Force assumed control.*

1950s-1960s



*Used for high altitude nuclear tests.*

1971



*U.S. Army shipped chemical weapons from Okinawa.*

1971-2000



*Chemical weapons stored.*

sponges, jellyfish and mollusks dwell within the atoll's living coral reefs.

Dedicated to environmental protection and safety of the atoll's teeming marine and wildlife, the Army arranged for scientists to monitor the atoll's bird and marine populations, beginning six years before the project started and running throughout the life of the project—20 years of extensive, continuous research and monitoring.

During the two decades of research, scientists did not observe any adverse effects from the project upon the wildlife and marine life on the atoll. Valuable experience gained at JACADS ensures success at other CMA chemical weapons disposal sites.



*"The JACADS project is without a question a complete success. The reason the Army had so much success was because they spared no expense throughout the whole project. The Army facilities were all top-of-the-line and the Army followed every possible safety precaution to ensure the continued growth of the National Wildlife Refuge."*

— Dr. Philip Lobel,  
Professor of Biology, Ichthyology,  
Marine Biological Laboratory,  
Boston University

*"The wildlife refuge is in excellent shape. We monitored bird population, nest success, survival of adults from year to year, chicks up until breeding age, egg size and adult weight. We also did a comparison of birds within the vicinity of smoke stacks or birds that could be exposed to any possible agent leaks, with birds outside that area and found no difference in health or behavior."*

— Dr. Elizabeth A. Schreiber,  
Ornithologist, National  
Museum of Natural History,  
Smithsonian Institution



1985

JACADS construction began.



1990

U.S. shipped its chemical weapons from former West Germany/JACADS began destruction of stockpile.



1991

Range-recovered chemical munitions received from the Solomon Islands.



1998

JACADS completed nerve agent GB campaign.



# Success: The Public



## JACADS

*JACADS was the first full-scale chemical weapons disposal facility. Construction for the extensively automated facility began in 1985 and was completed five years later. It proved the safety of the incineration disposal process—a process that did not harm or endanger the public, the work force or the environment. JACADS eliminated its original stockpile of more than 412,000 chemical munitions and more than four million pounds of VX and GB nerve agents and HD blister agent in December 2000 while protecting the workers and the environment at the Johnston Atoll.*

Public involvement is an integral component to CMA’s destruction of chemical munitions at each storage site. One of the unique aspects of JACADS was its isolated location—about 800 miles from Hawaii. Since the population of the island was comprised solely of workers for the project, public outreach and involvement for JACADS was focused in Hawaii.



In order to achieve its goal of obtaining public input regarding all of its operations in general, and

JACADS specifically, CMA used surveys, its Web site, public availability sessions, environmental forums and agency meetings with local government officials from the Pacific region. Throughout the JACADS project, information repositories were maintained at Johnston

1999



*JACADS completed blister agent HD campaign.*

2000



*JACADS completed nerve agent VX campaign, the first site to complete its mission by destroying more than 412,000 chemical weapons.*

2001



*JACADS closure began.*

Atoll, and in Hawaii, California, Guam and the Republic of Palau, as well as at CMA headquarters in Maryland.

Public meetings are part of the closure process for JACADS and input from these meetings are used to improve the closure process for other chemical agent disposal sites. Since JACADS was the first facility to begin and complete the weapons disposal mission, lessons learned through public participation have been invaluable to other CMA disposal facilities.



## How did chemical munitions get to this isolated island group?

*In 1971 U.S. munitions from Okinawa, Japan, were transferred to the Johnston Atoll, followed nearly 20 years later by the chemical munitions stockpile from West Germany and a small number of recovered World War II-era chemical munitions from the Solomon Islands. These shipments were comprised of rockets, bulk containers, projectiles, bombs and mines that were filled with nerve agents GB or VX and blister agent HD, or mustard. These shipments from outside the continental United States accounted for more than 6 percent of the nation's stockpile. The military mission for Johnston Atoll was secure storage of these obsolete munitions.*

2002



JACADS destroyed all charcoal used in its filtration systems.

2003



JACADS completed destruction of stored secondary waste. Last of four JACADS disposal furnaces/incinerators shut down. JACADS closure ceremonies held in Hawaii and Johnston Island.

2005



JACADS anticipates EPA approval of Resource Conservation and Recovery Act closure modification.



*During operations, JACADS destroyed more than 412,000 chemical weapons.*

*Once chemical weapons destruction was completed, JACADS was torn down and the site covered in crushed coral to help maintain the protected environment of the Johnston Atoll National Wildlife Refuge.*



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