



FACT SHEET

Office of the
Assistant Secretary of Defense (Health Affairs)
Deployment Health Support Directorate

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Deseret Test Center

Big Jack, Phase A

Shortly after President Kennedy's inauguration in 1961, the Secretary of Defense, Robert McNamara, directed that a total review of the U.S. military be undertaken. The study consisted of 150 separate projects. The chemical and biological warfare review was known as Project 112. As part of the Project 112 review, the Joint Chiefs of Staff convened a working committee that recommended a research, testing, and development program for chemical and biological weapons. To oversee this program, the Deseret Test Center was established at Fort Douglas, Utah, in 1962. Both land-based and ship-based tests were conducted during the period 1962 – 1973. The Deseret Test Center closed in 1973.

The purpose of the Big Jack, Phase A test was to measure penetration of a jungle canopy by biological and chemical agent simulants disseminated from an operational weapon system.

The Big Jack program was divided into two phases. In Phase A trials, *Bacillus globigii*, a simulant for biological warfare agents, was released and sampled. The dissemination systems used were the US Air Force A/B45Y-1 and the US Navy Aero 14B spray tanks. The tanks were mounted on Marine A-4 aircraft.

A meteorological study using zinc cadmium sulfide (FP) was conducted during Big Jack, Phase A, to compare penetration of the jungle canopy by FP and the biological tracer.

The Big Jack, Phase A test area was located near the Fort Sherman Military Reservation, Panama Canal Zone. Big Jack, Phase A tests were conducted from February 15 – March 15, 1963.

The Department of Defense (DoD) is providing this information, at the request of the Department of Veterans Affairs (VA), to assist the VA in providing healthcare services to qualified veterans and to assist veterans in establishing service connection for disability claims. The Deployment Health Support Directorate (DHSD) collected this information from multiple sources and requested that the military services declassify it to allow its public distribution. The VA accepts this information provided on location, dates, units and/or ships, and substances involved in this exercise, which DHSD extracted from classified DoD records, and will provide it to individual veterans as necessary, but the VA cannot verify its accuracy.

Test Name	Big Jack, Phase A (DTC Test 63-4)
Testing Organization	US Army Deseret Test Center
Test Dates	February 15 – March 15, 1963
Test Location	Near Fort Sherman Military Reservation, Panama Canal Zone
Test Operations	To study the penetration of a jungle canopy by a biological aerosol generated by crosswind dissemination of a biological simulant from an elevated line source.
Participating Services	US Army, US Navy, US Air Force, Deseret Test Center personnel
Units and Ships Involved	VMA 225, Marine Aircraft Group 14
Dissemination Procedures	Sprayed from US Air Force A/B45Y-1 and US Navy Aero 14B spray tanks center mounted on Marine A-4 aircraft.
Agents	Not used
Simulants and Tracers	<i>Bacillus globigii</i> Zinc cadmium sulfide (FP)
Ancillary Testing	Not identified
Decontamination	Not identified
Potential Health Risks Associated with Agents, Simulants, Tracers	<u><i>Bacillus globigii</i></u> (BG) Now considered to be <i>Bacillus subtilis</i> var. <i>niger</i> , a close relative of <i>Bacillus subtilis</i> , this bacterial species was used as a simulant and considered harmless to healthy individuals. <i>Bacillus subtilis</i> and similar <i>Bacillus</i> species are common in the environment, and are uncommon causes of disease. They have been associated with acute infections of the ear, meninges (brain lining), urinary tract, lung,

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heart valve, bloodstream, and other body sites, but always or nearly always in individuals whose health has already been compromised. Long-term or late-developing health effects would be very unlikely (except perhaps as a complication of the acute infection).

(Sources: Tuazon CU, *Other Bacillus Species* (chap. 197), in *Principles and Practice of Infectious Diseases*, 5th edition (vol. 2), ed., Mandell GL, Bennett JE, Dolin R, Churchill Livingstone, Philadelphia, 2000, p. 2220-6; US Environmental Protection Agency, *Bacillus subtilis* Final Risk Assessment, February 1997, available at <http://www.epa.gov> as of October 4, 2002.)

Zinc cadmium sulfide (ZCdS)

This compound was aerosolized as a tracer material for the dispersion of biological warfare agents because it had similar properties. There has been little scientific study on the toxicity of this compound when inhaled. A National Research Council (NRC) committee focused on the cadmium component as potentially most toxic. While higher concentrations and more prolonged exposures to cadmium are associated with the development of lung cancer, the concentrations and durations of exposure in the Army's tests were substantially lower. The NRC committee concluded that the risk of adverse health effects to populations in the area was low.

(Sources: National Research Council (National Academies), *Toxicologic Assessment of the Army's Zinc Cadmium Sulfide Dispersion Tests*, and *Toxicologic Assessment of the Army's Zinc Cadmium Sulfide Dispersion Tests: Answers to Commonly Asked Questions*, National Academy Press, Washington DC, 1997, both available at <http://www.nap.edu> as of October 1, 2002.)

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