FACT SHEET

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Deseret Test Center

Night Train

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 primary purpose of Night Train was to study the penetration of an arctic inversion by a biological aerosol cloud. A secondary purpose was to study the downwind travel and diffusion of this cloud when disseminated into different arctic meteorological regimes.

A total of 14 trials were conducted in which the biological simulant *Bacillus globigii* was released from an A/B45Y-1 spray tank carried on an F-105 or F-100 aircraft. Four trials were surface trials in which dry *Bacillus globigii* was disseminated from the rear of a moving, M116 Personnel Carrier. In addition, biological release was accompanied by the release of two colors (yellow and green) of fluorescent particles of zinc cadmium sulfide. The fluorescent particles were released from contractor-flown aircraft. The yellow fluorescent particles were disseminated from an Aero Commander aircraft; the green fluorescent particles from a Cessna 180.

Night Train was conducted in the vicinity of Fort Greely, Alaska during the period November 30, 1963 to January 8, 1964.

Test Name	Night Train (DTC Test 64-5)
Testing Organization	US Army Deseret Test Center
Test Dates	November 30, 1963 – January 8, 1964
Test Location	Near Fort Greely, Alaska
Test Operations	To obtain data on the downwind travel of a biological agent simulant under arctic conditions, when disseminated from the A/B 45Y-1 wet biological spray tank mounted on an operational aircraft and when sprayed from a tracked vehicle mounted dissemination device.
Participating Services	US Army, US Air Force, Deseret Test Center personnel
Units and Ships Involved	Not identified
Dissemination Procedures	Biological simulant *Bacillus globigii* was released from an A/B45Y-1 spray tank carried on an F-105 or F-100 aircraft. In surface trials, *Bacillus globigii* was disseminated from the rear of a moving, tracked vehicle. Fluorescent particles were released from contractor-flown aircraft (Aero Commander - yellow particles and Cessna 180 - green particles).
Agents, Simulants, Tracers	*Bacillus globigii,* Zinc Cadmium Sulfide
Ancillary Testing	Not identified
Decontamination	Not identified
Potential Health Risks Associated with Agents, Simulants, Tracers	<u>*Bacillus globigii*</u> <u>(BG)</u> Now considered to be *Bacillus subtilis var. niger,* a close relative of *Bacillus subtilis*, this bacterial species was used as a simulant and considered harmless to healthy individuals. *Bacillus subtilis* and similar *Bacillus* 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, 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.)