FACT SHEET

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Deseret Test Center

Cliff Rose

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 (DTC) 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 test objective of Cliff Rose (DTC Test 68-52) was to evaluate three CS weapon systems in tropical and semi-tropical environments: the BLU-52A/B chemical bomb; the CS2, XM28 helicopter sling-mounted dispenser; and, the XM-920 E-2 fuze and burster-bomb system. These CS weapon systems were all bulk-CS-filled terrain-denial systems and were evaluated in forest, open water (paddy), jungle, high grass, and open terrain, in terms of periods of denial to unmasked, walking test subjects, pattern sizes, and contamination density.

For this test, ortho-chlorobenzylidene malontrile (CS2), a white crystalline powder riot-control agent, was dispersed by Air Force low and high speed tactical aircraft, burster devices, and a UH-1 type helicopter.

While the United States does not classify CS2 as a chemical warfare agent, Deseret Test Center managed Cliff Rose as a matter of convenience. Testing CS2 was not part of a chemical-biological warfare agent assessment.

Cliff Rose was conducted between September 22, 1967 – January 18, 1968 at Ft. Stewart, Georgia (Phase I) and at an unspecified location in the Panama Canal Zone (Phase II).

Test Name	Cliff Rose (DTC Test 68-52)
Testing Organization	US Army Deseret Test Center
Test Dates	September 22, 1967 – January 18, 1968
Test Location	Ft. Stewart Georgia and the Panama Canal Zone
Test Operations	To evaluate three CS weapon systems in tropical and semi-tropical environments: the BLU-52A/B chemical bomb; the CS2, XM28 helicopter sling-mounted dispenser; and, the XM-920 E-2 fuze and burster-bomb system. CS2 was dispersed by Air Force low and high speed tactical aircraft, burster devices, and a UH-1 type helicopter.
Participating Services	US Army, US Air Force, and Deseret Test Center personnel
Units and Ships Involved	Not identified
Dissemination Procedures	Three types of CS2 munitions, including the BLU-52A/B chemical bomb, the XM28 dispenser system, and the XM-920 E-2 fuze and burster system were tested.. The BLU-52A/B bombs were delivered by US Air Force low and high speed aircraft. The XM28 sling-mounted dispenser released CS2 from a UH-1 type helicopter.
Agents, Simulants, Tracers	Ortho-chlorobenzylidene malontrile (CS2)
Ancillary Testing	Not identified
Decontamination	Not identified
Potential Health Risks Associated with Agents, Simulants, Tracers	<u>CS2 Riot – Control Agent</u> CS2 is one of several chemicals commonly called "Tear Gas." CS2 is a white, crystalline powder and is dispersed into the air as either an aerosol or powder. The chemical name for CS2 is ortho chlorobenzylidene malononitrile. It is chemically

	identical to CS but differs in its physical characteristics. This chemical is an incapacitating/ riot-control agent that acts as a contact irritant on the exposed body surfaces (eyes and skin), and on the respiratory tract. Exposure to CS2 causes burning, irritation, tearing and pain in the eyes. Airway symptoms include burning, sneezing, coughing, shortness of breath and increased secretions, such as runny nose and increased salivation. High concentrations of CS2 can cause blistering of the skin. With commonly used concentrations, these effects are short-term and the potential for long-term health consequences is low. (Sources: Riot-Control Agents (chap. 6), in US Army Medical Research Institute of Chemical Defense, Medical Management of Chemical Casualties Handbook, 3rd edition, 1998; Sidell FR, Riot Control Agents (chap. 12), in Zajtchuk R (ed.), Textbook of Military Medicine (part 1, Medical Aspects of Chemical and Biological Warfare, 1997), Office of the Army Surgeon General, Washington DC, 1997, p. 310-6. http://www.metrokc.gov/health/hazard/ riotcontrol.htm#cs [as of September 26, 2002] Cornell University, http://msds.pdc.cornell.edu/msds/siri/files/chl/ chlfz.html [as of August 26, 2002]).