FACT SHEET

Special Assistant to the Under Secretary of Defense
(Personnel and Readiness)for Gulf War Illnesses,
Medical Readiness and Military Deployments

For more information,
(703) 578-8500

Version 01-17-2002

Project Shipboard Hazard and Defense (SHAD)

Eager Belle, Phase I

Project Shipboard Hazard and Defense (SHAD) was part of the joint service chemical and biological warfare test program conducted during the 1960s. Project SHAD encompassed tests designed to identify US warships' vulnerabilities to attacks with chemical or biological warfare agents and to develop procedures to respond to such attacks while maintaining a war-fighting capability.

The primary purpose of the Eager Belle, Phase I test was to evaluate the effectiveness of selected protective devices in preventing penetration of a naval ship by a biological aerosol. An additional objective was to compare the efficiency of the M-17 and the Mark V protective masks against a biological aerosol. The USS *George Eastman* (YAG-39) was exposed to a biological tracer disseminated from a point source installed on a tugboat.

The biological tracer was Bacillus subtilis var. niger (often referred to as *Bacillus globigii* [BG]). For each trial, BG was aerosolized from an E-2 biological disseminator mounted on the stern of a tugboat. The BG was disseminated over a 10-minute period, during which 16 to 18 liters of agent were aerosolized. The USS *George Eastman* (YAG-39) maintained a distance of approximately 500 yards astern the tugboat. Fog oil was disseminated from an M3A3 pulse-jet mechanical smoke generator, prior to and concurrently with the BG, to provide a visible tracer to assist the captain of YAG-39 in remaining within the aerosol cloud.

Eager Belle, Phase I tests were conducted in an area of the Pacific Ocean west of Oahu, Hawaii within 40 miles of latitude 21^0 30´ N, 158^0 40´ W during the months of January and March 1963.

Test Name	Eager Belle, Phase I (Test 63-1)
Testing Organization	US Army Deseret Test Center
Test Dates	January, March 1963
Test Location	Testing was conducted in the Pacific Ocean, west of Oahu, Hawaii.
Test Operations	To evaluate the effectiveness of selected protective devices in preventing penetration of a naval ship by a biological aerosol.
Participating Services	US Navy, Deseret Test Center personnel
Units and Ships Involved	USS *George Eastman* (YAG-39)
Dissemination Procedures	Biological tracer released from an E-2 biological disseminator
Agents, Simulants, Tracers	Bacillus subtilis var. niger (Bacillus globigii [BG]).
Ancillary Testing	Mk V and M17 protective masks
Decontamination	Not identified.
Potential Health Risks Associated with Agents, Simulants, Tracers	Bacillus subtilis var. niger (Bacillus globigii [BG]) The American Type Culture Center characterizes Bacillus subtilis var. niger as a BioSafety Level-1 (BSL-1) bacterium. The Centers for Disease Control and Prevention define BSL-1 as suitable for work involving well-characterized agents not known to consistently cause disease in healthy adult humans. (Sources: American Type Culture Collection data sheet, *http://phage.atcc.org* [as of January 11, 2002] and *Biosafety in Microbiological and Biomedical Laboratories*, U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention and National Institutes of Health, 4th ed., p. 17, April 1999, U.S. Government Printing Office, Washington)