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From: CAPTAlMateczun<mateczuna@nmrc.navy.mil>
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Sailors Sprayed With Nerve Gas in Cold War Test, Pentagon Says

By THOM SHANKER with WILLIAM J. BROAD

ASHINGTON, May 23 — The Defense Department sprayed live nerve and biological agents on ships and sailors in cold war-era experiments to test the Navy's vulnerability to toxic warfare, the Pentagon revealed today.

The Pentagon documents made public today showed that six tests were carried out in the Pacific Ocean from 1964 to 1968. In the experiments, nerve or chemical agents were sprayed on a variety of ships and their crews to gauge how quickly the poisons could be detected and how rapidly they would disperse, as well as to test the effectiveness of protective gear and decontamination procedures in use at the time.

Hundreds of sailors exposed to the poisons in tests conducted in the 1960's could be eligible for health care benefits, and the Department of Veterans Affairs has already begun contacting those who participated in some of the experiments, known as Project Shipboard Hazard and Defense, or SHAD.

"We are committed to helping every veteran who took part in these tests," said Anthony J. Principi, the secretary of veterans affairs. "If we find any medical problems or disabilities we can attribute to Project SHAD, we'll ensure these veterans receive the benefits they deserve."

Of the six tests, three used sarin, a nerve agent, or VX, a nerve gas; one used staphylococcal enterotoxin B, known as SEB, a biological toxin; one used a simulant believed to be harmless but subsequently found to be dangerous; and one used a nonpoisonous simulant.

Michael Kilpatrick, a medical official in the office of the assistant secretary of defense for health affairs, said it was unclear whether sailors had been intentionally exposed to the germ and chemical agents without the benefit of protective masks and gear. Also uncertain, he said, was whether any had given their permission to become human guinea pigs in medical experiments with the deadly substances.

"When you read the overarching plans for the testing, people were to be protected," he said in an interview. "But when we get to individual reports, we do not see things like informed consent or individual protection. We don't have the records for what, if any, protection was given to people."

The implication, he said, is that in some cases sailors may have been exposed to the chemical and germ dangers.

"To me," Dr. Kilpatrick added, "the important thing now is that the Defense Department and veterans affairs are cooperating for the benefit of the veteran."

The Department of Veterans Affairs has notified 622 of about 4,300 military personnel, mostly from the

Navy, identified as participants in Project SHAD. The process of identifying the veterans who participated in the program began in September 2000 under pressure from Representative Mike Thompson, Democrat of California, who was responding to claims by veterans that they had suffered health damage from the tests.

"This information is significant since we now know that our military personnel were exposed to sarin gas and VX nerve agent, which are both highly lethal, and other agents that are known carcinogens," Mr. Thompson said.

While noting that the documents made public today by the Pentagon were the third installment of fact sheets on Project SHAD, bringing to 12 the number of tests that had been declassified, he demanded that the Defense Department release additional information on the 113 secret SHAD tests believed to have been planned.

"It is only fair to inform service members, some of whom may not even know of their exposure, of the specific harmful agents used in SHAD tests," Mr. Thompson said.

Leonard A. Cole, an expert on biological weapons at Rutgers University who wrote "Clouds of Secrecy," a book on the government's germ testing program, said the new disclosures were troubling but grimly logical.

"They're important because they add to a whole pool of knowledge about what the military was doing," he said. "But they don't shock me. We've known that the Army had exposed human subjects to biological agents," though always with permission.

"If there was no informed consent," Dr. Cole added, "that would be a big deal. I know of no large-scale testing on human subjects with chemical or biological weapons that was performed without some level of informed consent."

A number of the SHAD tests used harmless simulants that were meant to mimic and trace the dissemination of real agents. But others used deadly chemicals and germs.

One test, named "Fearless Johnny," was carried out southwest of Honolulu during August and September of 1965. The George Eastman, a Navy cargo ship, was sprayed with VX nerve agent and a simulant to "evaluate the magnitude of exterior and interior contamination levels" under various conditions of readiness, as well as study "the shipboard wash-down system," according to the new documents.

VX gas, like all nerve agents, penetrates the skin or lungs to disrupt the body's nervous system and stop breathing. In small quantities, exposure causes death.

A 1964 test named Flower Drum Phase I, conducted off the coast of Hawaii, sprayed sarin and a chemical simulant onto the same ship and into its ventilation system while the crew wore various levels of protective gear. In phase 2 of the test, VX gas was sprayed onto a barge to examine the ship's water wash-down system and other decontamination measures, according to the documents.

Another experiment, Deseret Test Center Test 68-50, was intended to determine the casualty levels from an F-4 Phantom jet spraying SEB, a crippling germ toxin. The test was done in the Marshall Islands in September and October of 1968. The jet sprayed the deadly mist over part of Eniwetok Atoll and five

Army light tugs, the documents said.

SEB, a report added, "is not generally thought of as a lethal agent" but instead as an incapacitating agent that can knock out people for one or two weeks with fever, chills, headache and coughing. The SEB came from a bacteria that causes a common type of food poisoning.

Deseret Test Center Test 69-32, done southwest of Hawaii from April to June 1969, used two germs that were thought to be harmless, *Serratia marcescens* and *Escherichia coli*, the germ of the human gut. But *Serratia marcescens* in time turned out to be dangerous.

"It is an opportunistic pathogen," the report said today, "causing infections of the endocardium, blood, wounds, and urinary and respiratory tracts."

The documents said the Pacific test of the two germs, which were meant to simulate dangerous biological agents, was meant to see how sunlight influenced their survival. A military aircraft sprayed the germs on five tugs, "each converted to serve as an oceangoing sampling platform and laboratory," the documents said.