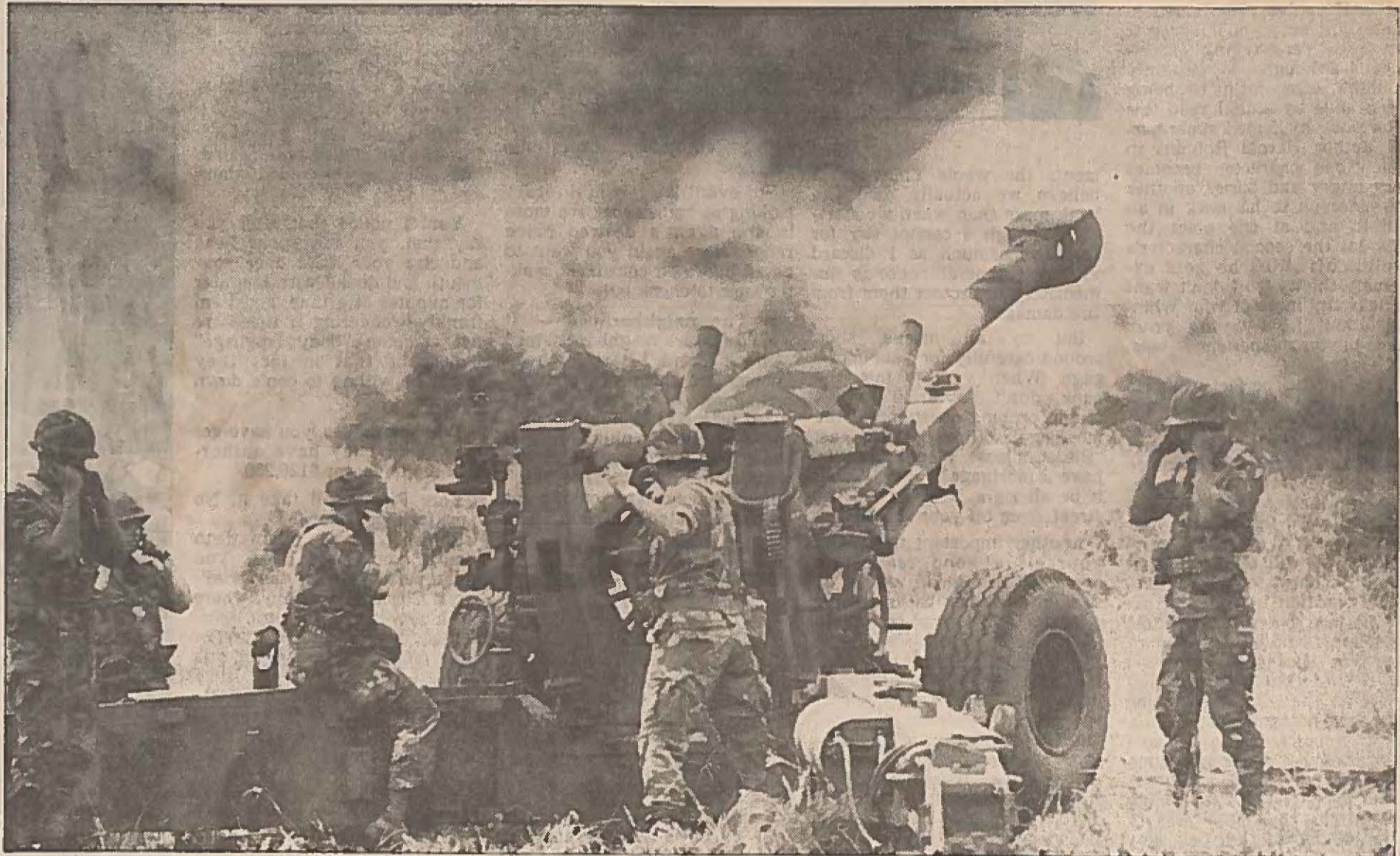


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Advertiser photo by Charles Okamura

An artillery crew prepares to fire one of 18 nuclear-capable M-198 howitzers in the 25th Infantry Division at Schofield Barracks.

The Islands' nuclear arsenal

body together, hatching a bomb. The casing hits the water and sinks to a predetermined depth, where pressure detonates a low-yield nuclear warhead.

This anti-submarine rocket, a flying depth charge, is one of the nuclear weapons available to Pearl Harbor's surface warships.

Under longstanding policy, the military won't confirm or deny the presence of nuclear weapons anywhere. But it will say which ships, aircraft and cannons are capable of nuclear firepower, and the list is long.

Some information on the warhead types can be gleaned from declassified sources — trade magazines, scholarly articles and congressional hearings and reports.

A 340-page "Nuclear Weapons Databook" compiled from these and other sources by the private Natural Resources Defense Council Inc. was published in 1984 in Cambridge, Mass. Its authors are Thomas B. Cochran, the council's senior staff scientist; William M. Arkin, of the Institute for Policy Studies in Washington; and Milton M. Hoenig, a former staffer with the Arms Control and Disarmament Agency.

Here's how the book outlines what's available to Hawaii-based military units:

● **Anti-submarine rockets.** Pearl Harbor's frigates, destroyers and its single cruiser can fire nuclear-tipped anti-submarine rockets from box launchers. The trajectory is determined by raising and rotating the launcher. The warhead has an explosive force of 1 kiloton (compared with 12.5 kilotons for Hiroshima and 23 for Nagasaki). These weapons will probably be replaced by a vertical-launch guided missile on modern surface warships beginning in the late 1980s.

● **Submarine-launched rockets.** Pearl Harbor's Los Angeles-class and Sturgeon-class nuclear-powered subs can carry their own version of the anti-submarine weapon, called a SUB-ROC or submarine-launched rocket, sort of a flying torpedo. Using a booster, these break the surface of the water, the engine ignites, the rocket accelerates to supersonic speeds and re-enters the water to attack submarines. The range is 25 to 35 miles. In the nuclear version, the warhead is in the 1- to 5-kiloton range.

al or nuclear warhead for attacks against ships or territory. The battleship USS Missouri, which may be assigned here, also will have Tomahawks. The warhead has a maximum yield of 250 kilotons (20 Hiroshimas). Launched from a torpedo tube, the missile has a range of 1,500 miles in its land-attack version. The warhead itself weighs 270 pounds and is about 3 feet long.

● **Standards.** The cruiser USS Worden is armed with Standard II missiles designed to destroy aircraft, incoming nuclear-tipped cruise missiles or ships. The Standards are 26 feet, 7 inches long, have a top speed of about 1,850 mph and a range of 65 miles. The ship has two launchers, fore and aft.

● **Depth charges.** P-3 Orion patrol planes based at Barbers Point Naval Air Station can be equipped with lightweight nuclear depth charges with variable yields of up to 20 kilotons (nearly two Hiroshimas). The bomb measures less than 10 feet in length and 15 inches in diameter and weighs less than 710 pounds.

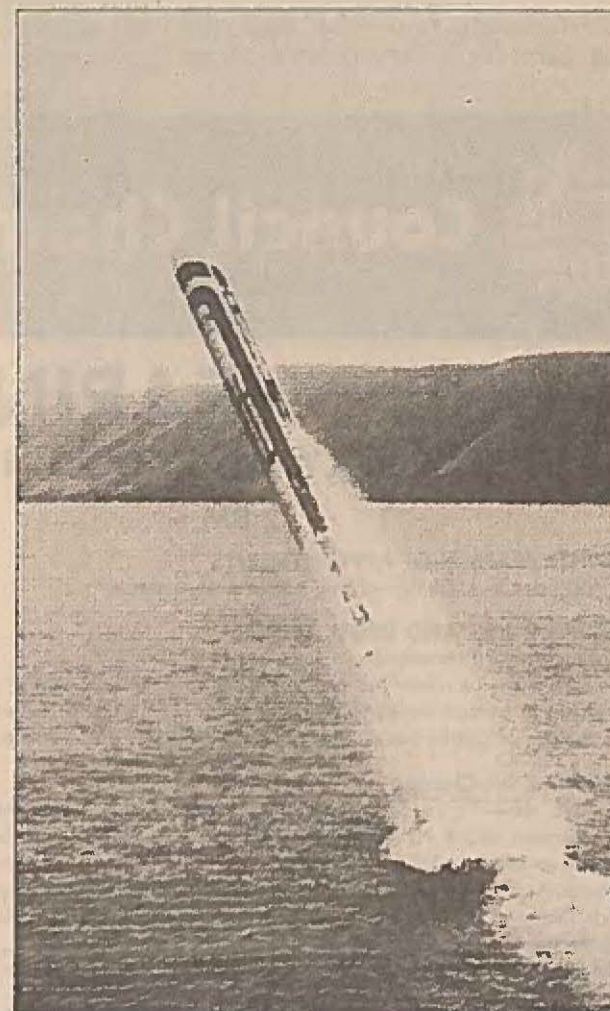
The only fighter-bombers in Hawaii — Navy and Marine A-4 Skyhawks and Marine F-4 Phantoms — are not nuclear-capable. The Phantoms are largely for close air support of ground troops. The Hawaii Air National Guard's Phantoms are interceptors carrying non-nuclear, air-to-air missiles.

● **Artillery.** The 25th Infantry Division's M-198 howitzers can fire 155mm nuclear rounds with a yield of 0.1 kiloton, the equivalent of 100 tons of TNT. It has a more limited range (less than 9 miles) and less accuracy than conventional rounds. A new warhead due for use beginning next year has a yield of just under 2 kilotons.

The 1st Brigade at Kaneohe Marine Corps Air Station has nuclear-capable M-198 and M-114 cannons, both firing 155mm shells. The Hawaii Army National Guard's artillery uses conventional rounds.

By law, the four-star admiral at Camp Smith, who holds the title of commander in chief, Pacific, has sole authority in the Pacific to release nuclear weapons from their storage sites for use in combat, and only then with the approval of the president or his successor.

nuclear shadow



Tomahawk underwater launch: Pearl Harbor's nuclear-powered submarines are being fitted with these cruise missiles, which can carry a nuclear warhead.

Oahu CD has evacuation plan on file

The military won't admit it has nuclear weapons in Hawaii, but the Oahu Civil Defense Agency has on file an evacuation plan in case an explosion at Pearl Harbor or Hickam Air Force Base releases radioactivity.

The accident could involve the storage or transporting of nuclear weapons or the reactors on submarines or visiting ships, according to the 1981 final draft. Ken Yanamura, Oahu Civil Defense plans and operations officer, said the plan was written by a state Civil Defense radiological expert for the Oahu agency.

"Although the likelihood of a reactor accident aboard one of these ships while in Pearl Harbor is highly unlikely, prudence dictates that provisions be made to deal with such an occurrence," the plan says.

While it is "physically impossible" for a nuclear reactor to explode like a bomb, the plan

says, "a nuclear reactor accident could result in damage to the reactor core and release of (radioactive) fission products to the atmosphere and surrounding environment."

The plan says the explosion of a nuclear warhead in storage or transit "is sufficiently unlikely as to not be considered as a possibility for planning purposes.

"Nuclear accidents, should they occur, would most likely involve a conventional explosion which would in turn scatter nuclear material around the point of detonation and downwind or a fire which would result in contaminated smoke drifting downwind. Any explosion would probably scatter nuclear material into the waters of Pearl Harbor as well as the surrounding land."

A chart indicates how often surrounding communities would be downwind of any radioactive emission. There is some overlap, so the

figures don't add up to 100 percent. Ewa Beach, 58 percent of the time, Ewa-Makakilo, 45 percent; airport and environs, 7 percent; Kalihi to Ward Avenue, 5 percent; Ward to St. Louis Heights, 5 percent; central Oahu, 5 percent; Pearl Ridge-Aiea-Halawa Heights, 3 percent; Salt Lake-Moanalua, 2 percent.

The plan details evacuation routes to the Windward and Leeward Coasts and central Oahu. Decontamination centers would be set up at Wheeler Air Force Base, Schofield Barracks, Kaneohe Marine Corps Air Station, and at Nanakuli, Castle, King, Kailua, Kalaheo, Kalani, Kaiser and Waimanalo schools.

The evacuation would be coordinated by the Oahu Civil Defense Agency, with other tasks falling to the police, fire department, public works department, and other government offices.

— Jim Borg