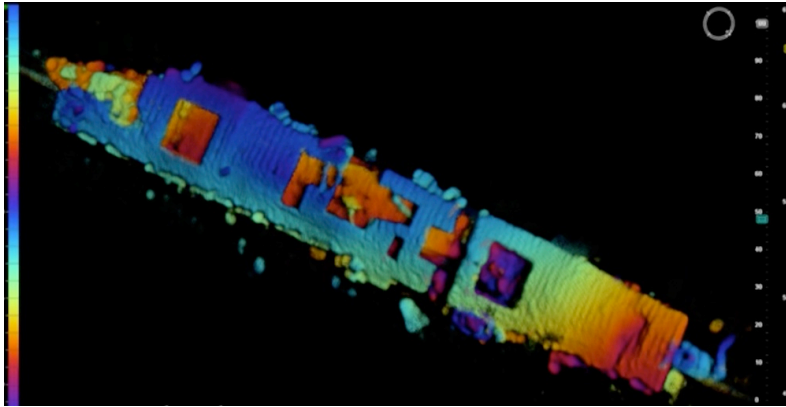


A Blast from the Past



The sunken USS Independence, image by NOAA and Coda

The *USS Independence*, a light aircraft carrier, survived World War II and two A-bomb blasts before it was scuttled off San Francisco, near the Farallon Islands, in 1951.

In 1946, the joint army/navy [Operation Crossroads](#) had assembled more than ninety vessels at Bikini Atoll in the Marshall Islands, ostensibly to test the effects of atomic

weapons on ships. Another motive—likely the real one—was to scare the Soviets, who had been invited to observe. There was nothing novel about the bombs; they were of the same kind that had destroyed Nagasaki less than a year earlier, the plutonium-fueled Fat Man. The Crossroads bombs came straight from the US nuclear arsenal—a very small arsenal, but the Soviets didn't know that.

In Crossroads Able, the army air force dropped the first Fat Man and missed the target by almost half a mile. On the second try, Crossroads Baker, the navy made sure they'd hit something by hanging their bomb from a landing craft in the middle of the flotilla. The result was the most poisonous fountain of water in history, accompanied by a radioactive fog that engulfed the surviving ships and a tsunami that washed over the surrounding islands. The third test had to be canceled. Except for one failed attempt at resettlement, no one has been allowed to live on the atoll since.

As for the propaganda effect on the Soviet scientists, it was nil, and, in fact, possibly a stimulant; the Soviets exploded their first A-bomb, closely based on the stolen Fat Man design, three years later.



Crossroads Baker. The dark object on the right side of the column of water is an upended battleship.

After Crossroads came to an end, the damaged, radioactive *Independence* was among ten ships towed back to San Francisco. Clean-up experiments failed, and it was scuttled four years later, thirty miles west of Half Moon Bay in what's now the northern part of the Monterey Bay National Marine Sanctuary. The sunken ship was [revisited in April of 2015](#) by NOAA scientists headed by James Delgado, using the Boeing autonomous

underwater vehicle *Echo Ranger* to image the ship with sonar—but not before UC Berkeley and Lawrence Berkeley Lab radiation expert Kai Vetter calculated the risks to equipment and personnel. In a press release titled “[Radiation Safety for Sunken-Ship Archaeology](#),” Berkeley Lab’s Kate Greene gave the details.

The rusty wreck, lying 2,600 feet underwater for seven decades, poses no significant risk of radiation poisoning. Even a significant risk of that kind would be a small part of the much greater risk posed by countries who refuse to draw down their nuclear arsenals, or who secure them sloppily, or are trying to build their own bombs, or who lie about trying to build their own bombs, or who lie about the hidden arsenals they already possess.

Have I left anybody out?

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