USS *Independence* as a Relic of Both World War II and the Cold War

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The articles within this journal present archaeological research that reminds us of a shared past that is perhaps too recent, as we still deal with the implications of nuclear warfare. They also trail blaze research that transcends boundaries in historical and underwater archaeology and into the complexity of the Cold War and its artifacts. The material culture studied here, including the remains of the scuttled warship USS *Independence*, are in a broader view the physical remains of the evolution of our modern era, the aftermath of World War II, and the tightrope that the US, USSR, and other nations walked during the Cold War. James Delgado and the authors use the NOAA-led rediscovery of the USS *Independence* and the other atomic-blasted ships of Operation Crossroads to interpret the early phase of the Cold War when the United States was preparing for nuclear war.

USS *Independence*'s (CVL-22) career afloat spans the period from World War II into the Cold War. The fourth ship of that name and the prototype for light aircraft carriers, *Independence* is important as a battle-tested example of its class. She also exemplifies the decisive use of naval aircraft used to win the war at sea in the Pacific theater. Her career highlights included raids on Marcus Island and Rabaul, missions in the Gilbert Islands, Palau, Philippines, and Okinawa, and service as a fleet combatant in the pivotal battle of Leyte Gulf. Additionally, she was the point of the spear in the development of night carrier operations. By the end of World War II, *Independence* had earned a total of eight battle stars. She would continue to serve her country at the dawn of the new era. If a ship can make an ultimate sacrifice for her country, USS *Independence* did just that.

The views or opinions expressed herein, are those of the author and do not necessarily reflect the views of Naval History and Heritage Command or the Department of the Navy.

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The consequences of World War II included the economic and political decline of the old European powers and the loss and restructuring of their former colonies throughout the Pacific region, Africa, and the Middle East, the displacement of millions of people, the ascent of the two superpowers, the United States and the Soviet Union, and the rise of what was termed the “Atomic Age” by Lawrence L. William, official historian of the Manhattan Project. The USA and USSR, reluctant Allies during the World War II, were transformed into adversaries in this reordered world. The question was not will, but when the USA and USSR would be drawn into a nuclear war. Only the US held the technological capabilities to create nuclear weapons for a brief time until the Soviet Union tested its first nuclear weapon in 1949. The USSR successfully discovered the secret weaponry through espionage and rapidly developed their capability to construct these new superweapons, thus shocking the US military. In the late 1940s and 1950s, it seemed certain that the next World War would be an atomic war.

Independence was called into action in preparation for an atomic war. Her survivability under nuclear attack, and that of a fleet of other surplus WWII warships and small craft, was tested in July 1946 at Bikini Atoll in the Marshall Islands. Codenamed “Operation Crossroads,” this was accomplished through the detonation of two bombs, one dropped and exploded from above the fleet and one detonated from below the water. *Independence* remained afloat, although badly damaged and contaminated with radiation.

Ultimately, as documented by James Delgado and his co-authors, *Independence* returned to the United States after decontamination to serve as a floating lab near San Francisco. She became a repository for radioactive artifacts from the other Operation Crossroads targets and radiation laboratory waste. *Independence* then met the fate of many other post-World War II ships, and was sunk to evade Soviet espionage during torpedo warhead tests off the coast of California. Nearly forgotten until rediscovered by a survey in the 1990s, NOAA National Marine Sanctuaries and Boeing Company survey confirmed her identity in 2015.

Archaeology often confirms, complements, and contradicts the historical record. It also reminds us of our past and how it relates to today’s problems. The sonar images of *Independence* confirm the destruction and distortion to the hull that resulted from the atomic blasts, which compares favorably with the drawings and photographs taken of the vessel at that time. The authors extoll that future surveys might add complementary information to the historical record. If aircraft, ordnance, and blast monitoring equipment are part of the wreck site, we may learn more about *Independence* than previously known. New information about the testing and waste disposal might also be revealed by other artifacts related to the Crossroads tests and the use of the ship as a floating lab. The authors also astutely observe that archaeological research can lead to new discoveries in the material culture while also bringing light to new interpretations of previously studied historical documents.

Independence is a relic of both World War II and the Cold War and her wreck site serves as a reminder that twentieth century events can still impact the twenty-first century, especially considering the oceans’ potential for holding hazardous cultural materials. As the authors in this journal note, there is a negative public perception concerning this shipwreck and its potential adverse effect on the environment, although at the time of the sinking, *Independence*’s hull emitted radiation below that of present day background radiation.

Now over 60 years have passed and the residual radioactive isotopes from the Bikini Atoll bomb detonations, which have a half-life of 30 years, have converted to stable elements. At most, as stated by Kai Vetter of the Lawrence Berkeley National Laboratory,

only a quarter of the radioactive isotopes present in 1951 will still be present on the sunken warship today. Containerized waste was disposed of in the wreck, but situated in 2600 ft of water; it poses no significant hazard to humans or marine life since a few inches of water effectively shield radiation (Greene 2015). This explanation is not to diminish the genuine concerns regarding radioactive hazards throughout the world's oceans that have originated from sunken ships. Thirteen countries are reported to have used ocean dumping as the disposal method for radioactive waste between 1946 and 1993, at which time it was banned by several international treaties, though some sources believe illegal dumping continues (BBC News 2005). According to a 2012 article by Charles Digges, published by the Bellona Foundation, the Soviets alone deposited as many as 19 radioactive ships, 14 nuclear reactors (5 of which contain fissile nuclear fuel material), 735 pieces of radioactive heavy machinery, 17,000 containers of waste, and the nuclear submarine *K-27* (possessing its two reactors filled with nuclear fuel), in the Barents Sea (Digges 2012). The US lost two nuclear submarines, *USS Scorpion* and *Thresher*, albeit in deeper waters. Archaeologists pioneering the study of the Cold War, led by James Delgado and his fellow scientists, will have some unusual challenges and research questions as their studies progress. *USS Independence* may help to define such questions in a field of Cold War Naval Archaeology.

Compliance with Ethical Standards

Conflict of interest The author declares that there is no conflict of interest.

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