This PDF file is a digital version of a chapter in the 2005 GWS Conference Proceedings. Please cite as follows:

Harmon, David, ed. 2006. *People, Places, and Parks: Proceedings of the 2005 George Wright Society Conference on Parks, Protected Areas, and Cultural Sites.* Hancock, Michigan: The George Wright Society.

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Lake Mead's Cold War Legacy: The Overton B-29

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Introduction

On July 21, 1948, a B-29 bomber crashed into Lake Mead while engaged in top-secret research. It was not until summer 2002 that the park learned that the plane had been found by local divers after unpermitted side-scan sonar searches. The discovery of the wreck set in motion a storm of legal, archaeological, and management issues that pulled the Park Service in many different directions. This paper discusses some of the historical, legal, archaeological, and management issues that came to bear on this unique cultural property.

History

In 1940, as Nazi troops blitzkrieged their way across Europe in a seemingly invincible rush, American strategic planners began to face the possibility that all of Europe would eventually fall. If Europe fell, America would stand largely alone against German and Italian fascism and would have to develop the weapons necessary to pursue a transatlantic war. One of these weapons was a four-engine heavy bomber known as the Boeing B-29 Superfortress.

The B-29 was conceived as early as 1938, designed in 1940, and first flew in September 1942 (Figure 1). Pushed by wartime imperatives, the Army ordered the construction of factories to build the plane before the design was finalized and initiated production before flight testing was finished.

The design of the B-29 benefited greatly from Boeing's experience building other large four-engine planes, including the Model 299 (B-17), the 307 Stratoliner, and the 314 Clipper. The B-29 was the heaviest airplane of its day and had numerous technological innovations. It incorporated a pressurized crew cabin that allowed the plane to fly higher than any other bomber, thus staying above enemy fighters and anti-aircraft weapons. The B-29's computer-aided defensive

Figure 1. The Boeing B-29—the largest, most sophisticated bomber of WWII. Photo courtesy United States Air Force.

armament system, remotely operated from crew stations, controlled twelve .50-caliber machine guns and a 20-mm cannon. The Norden bombsite, a top-secret instrument throughout the war, was an integral part of the plane's offensive capabilities.

The B-29 was made primarily out of aluminum alloys that gave the plane its great strength and low weight. The combination of a specially designed airfoil and the power of four super-charged, 18-cylinder Wright R-3350 Cyclone engines allowed the B-29 to fly 3,250 miles, carrying 10,000 pounds of bombs, at 358 miles per hour.

The effort necessary to develop the B-29 was rivaled only by the effort to develop the weapon to which it would be forever linked—the atomic bomb. The size and weight of the first atomic bombs meant that the B-29 was the only aircraft in the Allied arsenal able to carry this weapon from bases in the Pacific to targets in Japan.

Even before the B-29 entered combat service in mid-1944, work began to prepare a squadron to drop the atomic bomb. Seventeen planes were taken directly from the Martin/Omaha assembly line and modified for their ultimate mission. These modified planes formed the 509th Composite Bomb Group.

The 509th was officially formed on December 17, 1944, and was the first unit ever organized and trained to use atomic weapons. On August 6, 1945, Colonel Paul Tibbets, Jr., flew *Enola Gay* to Hiroshima, Japan. and dropped "Little Boy," a 9,000-pound atomic bomb, which exploded and vaporized an estimated 70,000 people. Three days later, on August 9, Major Charles Sweeney flew *Bock's Car* to the city of Nagasaki and dropped "Fat Man," a 10,000-pound atomic bomb, which killed an estimated 40,000 people. Many more Japanese would die in the weeks and months that followed from burns, infections, and radiation poisoning. The world was shocked and horrified at the power of these weapons. The war in the Pacific ended on August 14, 1945, and Japan formally surrendered on September 2.

The Cold War and the missile race

Following the cessation of hostilities in the Second World War, the uneasy alliance between the U.S., Britain, France, and the Soviet Union collapsed. With German fascism swept aside, the world realigned itself along the competing axes of communism and capitalistic democracy. This new geopolitical drama stretched for almost 50 years in a tense stalemate based on the deterrent value of mutually assured destruction. We think of it now as the Cold War.

The Cold War primarily took the form of a massive arms race, the occupation of Eastern Europe by the Soviet Union, and proxy power struggles which devastated developing countries in Asia, Africa, and Latin America. These struggles crushed aspirations for independence and democracy for the majority of the Third World throughout the 1950s, '60s, and '70s. Brinkmanship, the desire to hang on to old colonies, and arrogance often fanned proxy struggles into armed conflict, most notably in Korea, French Indochina, British Malaya, French Algeria, and various other places in Africa, South America, and the Middle East. Both the Western powers and the Soviet Union sought a strategic advantage in weaponry. Foremost in this race was the manufacture and delivery of nuclear weapons, objectives heavily dependent on scientific capability.

In the forefront of this arms race were the scientists and scientific institutions of the world's leading powers. Building on Nazi Germany's technological achievements in rocketry, both the Soviets and Western powers sought to develop long-range missiles that could strike each other's nations across the vast expanses of ocean that separated them.

The Upper Atmospheric Air Research Program, the V-2 rocket, and ballistic missiles

In America, leading academic institutions, including the Massachusetts Institute of Technology (MIT), Harvard, Princeton, and Johns Hopkins, joined with the Department of Defense's research laboratories to solve the technical problems associated with inter-continental ballistic missile (ICBM) use. Captured German V-2 rockets became test vehicles for a research program that investigated the physical properties of the upper atmosphere and sought to solve problems associated with guidance, range, payload separation, and re-entry of missile warheads from space.

Most rocket flights investigated the physical properties of the upper air and tested the reliability of rocket designs. Among the variables investigated were solar radiation, magnetic fields, and radio wave propagation. Many of these experiments were conducted under the rubric of the Upper Atmospheric Air Research Program. Extensive efforts were also made to develop guidance systems that would ensure missile accuracy over long distances. Experiments were conducted that aimed to determine altitude by measuring cosmic rays in the atmosphere. Among these was a system that aligned instrumentation at the sun and used this as a reference for determining the position of a missile in relation to the earth's surface. An early form of this "Sun Follower" system was tested on V-2 and Aerobee rockets. Johns Hopkins University's Applied Physics Laboratory also built a version called "Sun Tracker." While engaged in experiments with a Johns Hopkins Sun Tracker, the B-29 (serial #45-21847) that currently sits on the bottom of Lake Mead crashed on July 21, 1948.

B-29 serial #45-21847

B-29 serial #45-21847 was constructed at the Boeing plant in Wichita, Kansas, under the last production order issued by the U.S. Army to build B-29s. The plane was delivered to the U.S. Army Air Force on September 13, 1945, eleven days after Japan surrendered. Following its delivery to the Army Air Force, 45-21847 was modified several times for reconnaissance roles and later for participation in the Upper Atmospheric Air Research Program.

On the morning of July 21, 1948, under the command of Pilot Robert Madison, 45-21847 took off from Armitage Field, China Lake, California, to test the Johns Hopkins Sun Tracker. On board were Co-Pilot Paul Hessler, Flight Engineer David Burns, Scanner Frank Rico as well as Scientist (and Johns Hopkins graduate student) John Simeroth. The modified B-29 covered the 200-mile distance to the test area just east of Lake Mead in less than an hour.

The mission profile called for the plane to ascend to 35,000 feet then descend "as low as possible" while Simeroth took readings using the Sun Tracker. As the plane descended over Lake Mead, Madison apparently lost depth perception above the smooth water. With an indicated airspeed of 230 miles per hour, the huge bomber hit the water with a glancing blow. The contact with the lake was catastrophic for the B-29 and three of the four engines

were torn off by the impact. The pilot managed to wrestle 45-21847 back into the air and then ditch the plane in the lake in a controlled crash; all members of the crew managed to get out alive before the B-29 sank. The five-man crew scrambled into the plane's emergency life raft and was rescued approximately five hours later by a speedboat from Boulder City, Nevada.

NPS involvement and the searches for 45-21847

National Park Service (NPS) involvement with the B-29 began on the day of the crash when Lake Mead staff coordinated the rescue of the downed aircrew. With the active hostilities of World War II ended, there were thousands of surplus B-29s available for research and the plane was not a unique or even particularly valuable item at the time of its loss. NPS researchers have not yet found any historical documents to indicate the extent to which the Army Air Force attempted to find and recover the crashed and sunken plane. The general location of the plane remained known, however, and as years passed the aircraft grew in value as a historically rare remnant of World War II and the Cold War.

Informal and unauthorized searches are documented as early as 1986 when Co-Pilot Paul Hessler assisted a team searching for the plane with a robotic submarine. Beginning in 1994, Lake Mead National Recreation Area fielded numerous formal requests on the part of private "warbird" collectors to search for and recover the wreck of 45-21847. The NPS position has consistently been that the plane is in Park Service jurisdiction, belongs to the government, and will not be ceded to an individual or group that finds the wreck. This position has been received with varying degrees of grace by interested collectors. In 1994, for example, collector Bill Warren sued the park over the rights to find and salvage the aircraft. Although Warren lost his case in court, the suit derailed NPS efforts to find the wreck using a partnership with Department of Defense technology contractor Bechtel. Another NPS initiative, listing 45-21874 on the National Register of Historic Places, was partially successful and the plane was determined eligible for listing. Full listing necessitated actually providing the location of the plane.

In 1997, the park launched a second search for the B-29 in partnership with Bechtel. The park was concerned that a resource of great national importance to the American people within the administrative boundaries of the park was as yet unlocated and undocumented. The 1997 search was unsuccessful.

The aircraft was eventually located in 2000 by an individual who had been searching for the wreck using side-scan sonar without a permit, a violation of 36 CFR 2.1(7). NPS was never notified of the find. The individual who did the illegal side-scan search organized a dive group and in September 2001 commenced diving and filming activities. The team removed artifacts from the aircraft and crash site for almost a year until park staff was notified by a media contact on August 6, 2002, that a press conference was planned at the end of the week to announce the discovery of the B-29.

After the press conference the individual who had located the aircraft informed NPS that he had been advised by his attorney not to give NPS the coordinates of the aircraft. This set in motion a chain of events that would create another legal battle. The park immediately placed a diving restriction on the Overton Arm of the lake—the general location of the air-

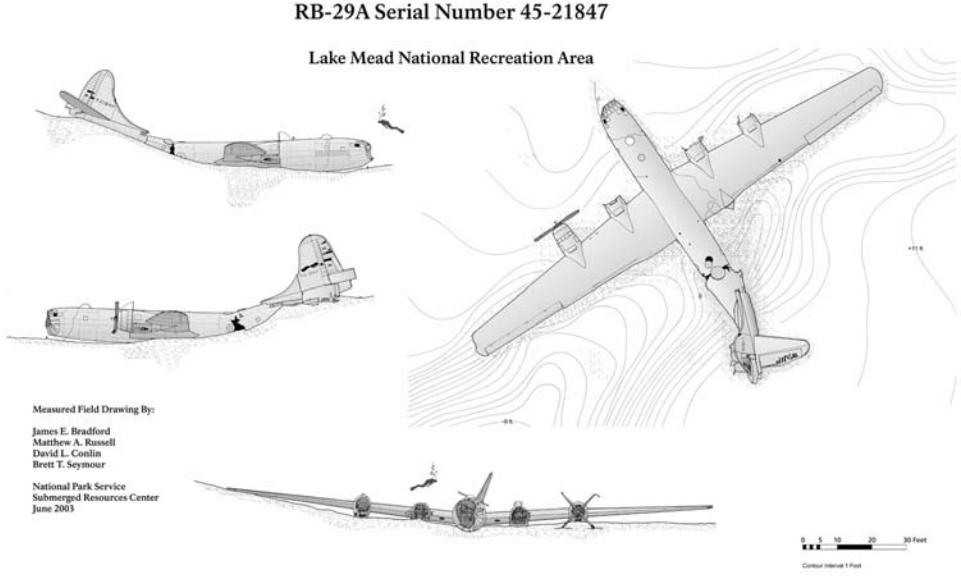
craft—to prevent further unauthorized diving on the site. In addition, NPS turned to the Bureau of Reclamation (BOR), which had just used multi-beam sonar to map sedimentation in the lake, for the development of new capacity tables for the reservoir. BOR reprocessed the data that allowed park staff to locate the aircraft. Barred from diving on the plane, the individual who first located it turned to federal court and filed a motion for a temporary restraining order prohibiting any NPS dives. He also filed an admiralty salvage claim to gain possession of the aircraft.

Prior to the discovery of the plane, the park had been in contact with the NPS Submerged Resources Center (SRC), which was willing to assist with technical diving, systematic mapping, and baseline documentation of the aircraft. Once the plane was located by the park, operations were conducted in fall 2002 and spring 2003. Since the plane was located in very deep water, the team needed specialized diving and documentation equipment. SRC recorded evidence of impacts to the aircraft resulting from uncontrolled diving activities, gathered baseline data on corrosion and preservation of the plane, created information that could be used in public outreach and education, and provided the park with information used to create several options for the future management of the aircraft (Figure 2–5).

Legal and management status as of April 2005

When the individual who found the plane filed an admiralty salvage claim in Federal District Court in Las Vegas, he created a number of logistical as well as legal problems for NPS. Fundamentally, NPS does not deal with issues of admiralty law so turned to the U.S. Department of Justice for legal assistance. A second aspect of the admiralty claim was that the federal judge was unfamiliar with the arcane aspects of admiralty salvage law. The federal government case revolves around five main issues:

Figure 2. Site plan of B-29 lost in the Overton Arm of Lake Mead, created by NPS Submerged Resources Center.



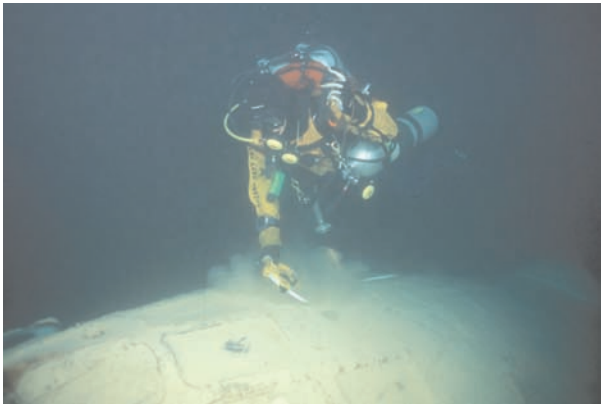


Figure 3. Matt Russell, NPS Submerged Resources Center archaeologist, mapping the Overton B-29. Photo courtesy NPS (Brett Seymour).

Figure 4. Jim Bradford, NPS archaeologist, documenting the Overton B-29. Photo courtesy NPS (Brett Seymour).

Figure 5. Matt Russell, NPS Submerged Resources Center archaeologist, documenting the single remaining engine on the Overton B-29. Photo courtesy NPS (Brett Seymour).

1. The mission of NPS is to preserve and protect natural and cultural resources under its stewardship and to provide for public use in such a way as to leave them unimpaired future generations. It is the NPS responsibility to ensure the protection of the B-29.
2. The Overton B-29 was located 160 feet above the bed of the Virgin River on federal property managed by NPS.
3. While the Air Force in 1962 issued a memorandum stating that it abandoned crashed aircraft, the federal government as a whole did not. The B-29 was actively searched for by the NPS over several decades. When its location was determined, NPS took measures to ensure its protection, including restricting access and completing the first phase of a condition assessment.
4. The individual who found the plane had located the B-29 by illegally using a side-scan sonar. The dives they conducted resulted in severe damage to the plane and to the artifacts they removed.
5. The Overton B-29, located in a cold lake environment, was stable, and measures could be taken to further stabilize the cultural resource. NPS would look at a variety of strategies to ensure public understanding and enjoyment of the site.

As of April 2005, the salvage claim is on-going and unresolved. The temporary restraining order to prevent NPS from diving on and managing the site was denied and NPS has been declared the temporary custodian of the plane. NPS is moving forward with plans to manage the resource in a manner consistent with its larger mandate to preserve resources "unimpaired for future generations," while at the same time working with the American people to maximize our access to, and enjoyment of, this unique artifact of the Cold War.