Operation Crossroads II

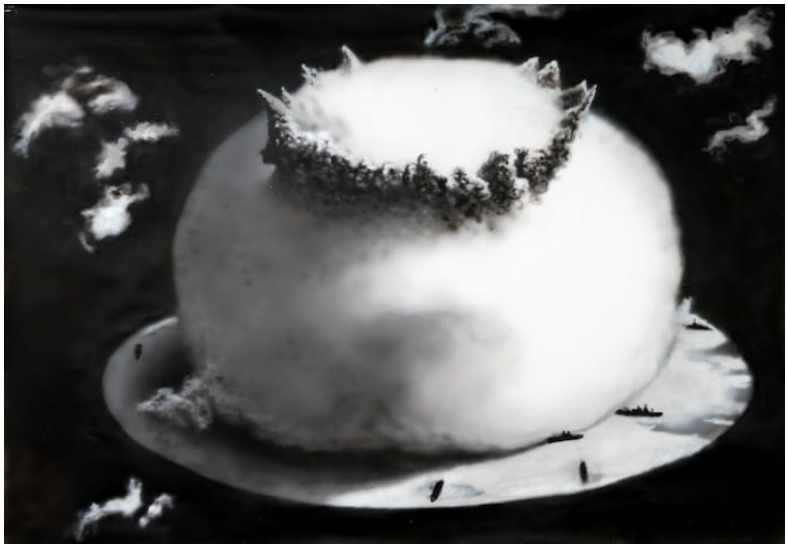
Sergio Frutos
2017

Ink and acrylic on paper
70 x 100 cm

Framed 90 x 120 x 3 cm

Unique
Signed

SF-P 17-2



About this artwork:

Operation Crossroads was a pair of nuclear weapon tests conducted by the United States at Bikini Atoll in mid-1946. The Crossroads tests were the first of many nuclear tests held in the Marshall Islands and the first to be publicly announced beforehand and observed by an invited audience, including a large press corps. They were the first nuclear weapon tests since Trinity on July 16, 1945, and the first detonations of nuclear devices since the atomic bombing of Nagasaki on August 9, 1945.

A fleet of 95 target ships was assembled in Bikini Lagoon and hit with two detonations of the kind dropped on Nagasaki to investigate the effect of nuclear weapons on warships.

Pressure to cancel Operation Crossroads altogether came from scientists and diplomats. Manhattan Project scientists argued that further testing was unnecessary and environmentally dangerous. When the scientists pointed out that the tests might demonstrate ship survivability while ignoring the effect of radiation on sailors[1], the organizers responded by adding test animals to some of the ships, thereby generating protests from animal rights advocates[2].

The second test was *Baker*. The bomb was known as *Helen of Bikini* and was detonated 27 m underwater on July 25, 1946. The *Baker* shot produced so many unusual phenomena that a conference was held two months later to standardize nomenclature and define new terms for use in descriptions and analysis[3]. The underwater fireball removed all the water within a 150 m radius and lifted two million tons of spray and seabed sand into the air, stretching into a cylinder 1.800 m tall and 600 m wide.

It was understood that if the water column fell back into the lagoon, which it did, any ships that were drenched by falling water might be contaminated beyond redemption. Nobody expected that to happen to almost the entire target fleet. No decontamination procedures had been tested to see if they would work and to measure the potential risk to personnel. In the absence of a decontamination protocol, the ships were cleaned using traditional deck-scrubbing methods: hoses, mops, and brushes, with water, soap, and lye. The sailors had no protective clothing[4].

Bikini's native residents were evacuated and relocated in a desert island where they starved until relocated again. Bikini remains uninhabited, though it is occasionally visited by sport divers, who must eat imported food.

The *Able* bomb was stenciled with the name *Gilda* and decorated with an *Esquire* magazine photograph of Rita Hayworth, star of the 1946 movie, *Gilda*[5]. The *Baker* bomb was *Helen of Bikini.* This femme-fatale theme for nuclear weapons, combining seduction and destruction, is epitomized by the use in all languages, starting in 1946, of "bikini" as the name for a woman's two-piece bathing suit.

During Operation Crossroads, Paris swimwear designer Louis Réard adopted the name Bikini for his minimalist swimsuit design which, revolutionary for the time, exposed the wearer's navel. He explained that “like the bomb, the bikini is small and devastating”[6]. Fashion writer Diana Vreeland described the bikini as the "atom bomb of fashion". While two-piece swimsuits have been used since antiquity, it was Réard's name of the *Bikini* that stuck for all of its modern incarnations.[7]

Crossroads has been described as one of the most photographed events in history, and this had had several practical effects

for moviemakers, even before the first weapon had been exploded. As more than half the world's available stock of film footage was bought up for cameras to record the tests, there were months of shortages in Hollywood and other major studios around the world.

The *Godzilla* movies use the *Baker* test footage or depict Operation Crossroads as the cause of Godzilla's mutation in the first place. The test *Baker* explosion archival footage is also used in the Stanley Kubrick film *Dr. Strangelove*.[8]

1. Rabinowitch, Eugene, and Hyman H. Goldsmith, eds. "Operation Crossroads: The Effect of the Atomic Bomb on Naval Power." *Bulletin of the Atomic Scientists* (Chicago) 1, no. 5 (February 1946): 1. ➞
2. Delgado, James P., and Daniel J. Lenihan. *The Archeology of the Atomic Bomb. A Submerged Cultural Resources Assessment of the Sunken Fleet of Operation Crossroads at Bikini and Kwajalein Atoll Lagoons*. No. 37. Santa Fe, New Mexico: National Park Service, 1991. ➞
3. W. A. Shureliff, *Bombs at Bikini. The Official Report of Operation Crossroads* (New York: W. H. Wise, Joint Task Force One, 1947). ➞
4. Jonathan M. Weisgall, *Operation Crossroads : The Atomic Tests at Bikini Atoll* (Annapolis: Naval Institute Press, 1994). ➞
5. Bill Geerhart, "Atomic Goddess Revisited: Rita Hayworth's Bomb Image Found," *CONELRAD Adjacent*, August 13, 2013. ➞
6. "1945-1950: The Very First Bikini." bikiniscience.com, 27 June 2012. ➞
7. Rose Eveleth. "The Bikini's Inventor Guessed How Much It Would Horrify the Public." *Smithsonian Magazine*, July 5, 2013. ➞
8. Timothy Noël Peacock, Josephine Lethbridge, and Paul Keaveny. "From Crossroads to Godzilla: The Cinematic Legacies of the First Postwar Nuclear Tests." *The Conversation*, July 22, 2021. ➞

About the project: Atom

[...]
"And so?" you ask your guide, *the nice one*.
"So, we learned to make stars," he answers.
"I thought you told me that this was already like a sun."
"Oh, yes, but it's not a real sun. Real suns don't work like that. They're much more powerful. So we made real stars."
"I can't believe it."
"And what do you think that white powder you've got there and this thermos I've got here are for?"
"The stuff that stars are made of?"
"Yes. And nightmares."

> Antonio Cantó, "Así funciona un arma termonuclear. (How a thermonuclear weapon works)" *La pizarra de Yuri: historias de ciencia al calor del fuego (Yuri's blackboard: science stories by the fire)*. Guadalajara ; Madrid: Silente, 2011. ➞

The project Atom is based on archival photographs from nuclear tests and revolves around how the 'atomic age' is a turning point[1] and to which extent human stupidity can destroy the world we live in. Is possible the survival of humanity and living beings with whom we share the planet as we know it under the current system?.

The phrase "atomic age" has been around since 1945 in reference to the world's reframing by the newfound human control over nuclear forces. Nuclear weapons prompted both apocalyptic visions of humanity's annihilation through mutually assured destruction and promises of abundance, progress, and modernity through the utilization of atomic energy.

On the one side, the atrocities of mass destruction in Japanese cities, on Pacific Atolls, and other "testing sites" across the globe forever stamped the self-image of the human as an engineer of death. On the other side, harnessing nuclear power and the emerging nuclear sector were hailed as instruments of national security, a hotbed of technological innovation, a wellspring for electric household energy, and a radically modern means of investigating the natural world and improving human bodies and diets. But soon the smiling side of this Janus face faded, and threat of radioactivity became the scare phenomenon of the second half of the twentieth-century. Radioactive contamination has changed the natural and the social environment to an extent that brings a whole new register into focus: the possibility that life on this planet could end as we know it.[2]

Our current development, predating the planet, following the dictates of capitalism will certainly drive us to mass extinction.[3]

Production of steel requires iron, coal, and an immense amount of air which passes through the mix. Today, all the air on Earth contains traces of radioactive residues from the nuclear tests realized since 1945. The so produced metals contain contamination by radionuclides, interfering with the function of sensitive medical and technical equipment. Until recently,[4] scientists involved in the production of those devices sought metals uncontaminated by background radiation, referred to as low-background steel, low-background lead, and so on.[5]

For many years, for certain sensitive scientific instruments, it wasn't possible to manufacture on Earth steel or other metals

without radionuclides, it had to be taken from shipwrecks sunken before 1945, as the German naval fleet that Admiral Ludwig von Reuter scuttled in 1919 to keep the ships from the British,[6] as lead has been frequently taken from roman archeological sites.[7]

Since the nuclear test race in 40s and 50s, the world has advanced in nuclear technology. Today, a nuclear bomb could target a large-scale attack, at a longer range, and with much greater destructive force. People are increasingly concerned about the potential destructive humanitarian outcomes. So long as nuclear weapons exist, it is inevitable that someday they will be used, whether by design, accident, or miscalculation. The danger of use of nuclear weapons is greater than ever before due to proliferation of nuclear weapons, terrorism, and political instabilities.[8]

1. Paul Crutzen and Christian Schwägerl, "Living in the Anthropocene: Toward a New Global Ethos." *Yale E360*, January 24, 2011. ➞
2. A. Cundy, et al., "Radioactive Fallout as a Marker for the Anthropocene." In: C. Rosol and G. Rispoli (eds) *Anthropogenic Markers: Stratigraphy and Context, Anthropocene Curriculum*. Berlin: Max Planck Institute for the History of Science, 2022. ➞
3. Troy Vettese, "A Marxist Theory of Extinction." *Salvage*, January 1, 2019. ➞
4. Sam Westreich, "Good News! Our Steel is No Longer Radioactive!" *Sharing Science* (blog), *medium.com*, December 25, 2021. ➞
5. Ed Conway, "The Eerie Story of Low Background Steel." Substack newsletter. *Material World*, June 10, 2023. ➞
6. Steven Brocklehurst, "Scapa Flow scuttling: The day the German navy sank its own ships." *BBC Scotland News*, June 21, 2019. ➞
7. Clara Moskowitz, "Ancient roman metal used for physics experiments ignites science feud." *Scientific American*, December 18, 2013. ➞
8. Shan Xu and Alicia Dodt, "Nuclear Bomb and Public Health." *Journal of Public Health Policy* 44, no. 3 (2023): 348–59. ➞