

# GEIST

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DRAWING OUT RUTU MODAN ▶  
FRANZLATIONS  
KODAKING THE BOMB  
FAILURE TO YIELD  
GREAT CANADIAN WHITE OUT



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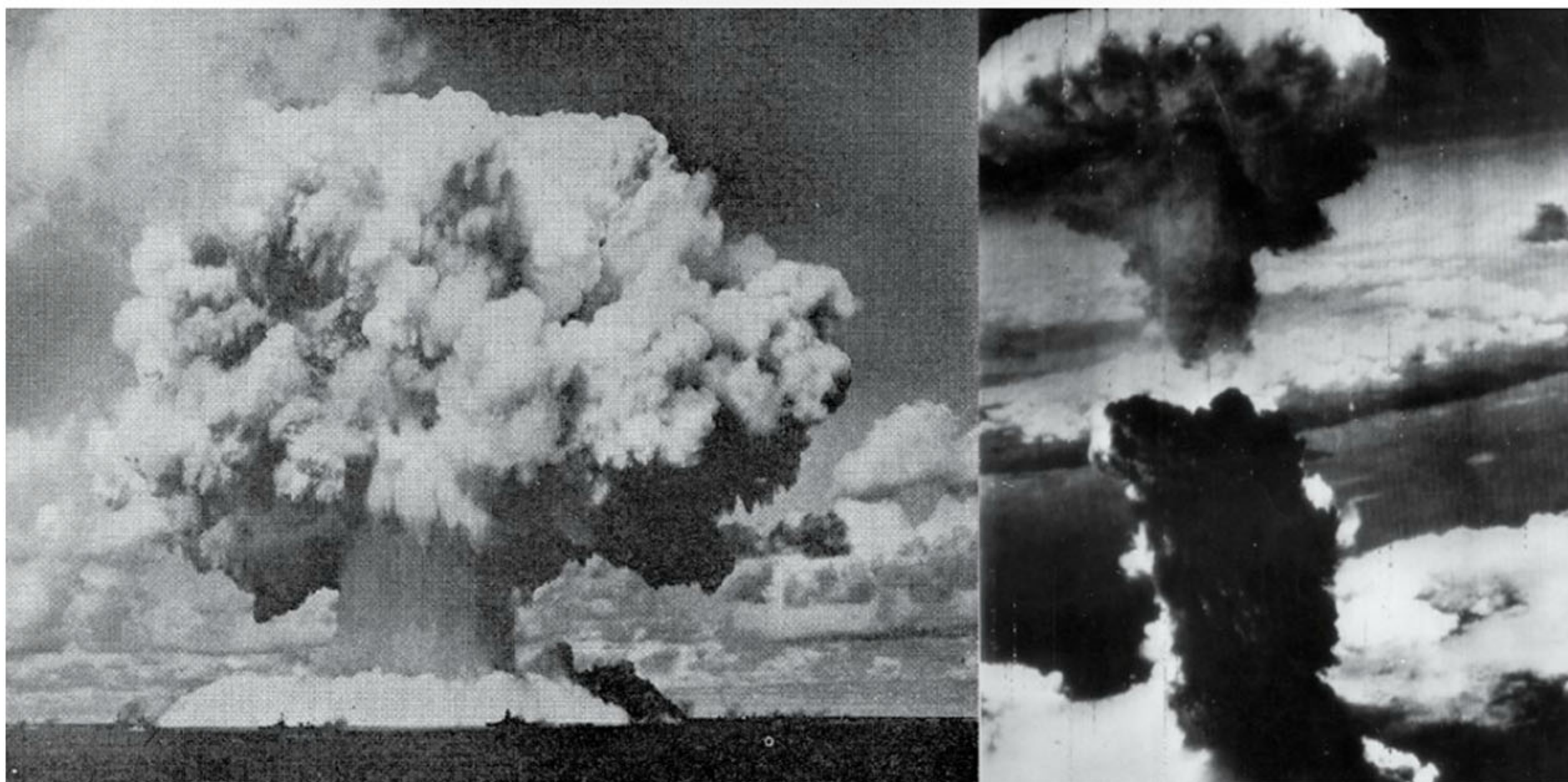
*W'ile de camp is warm an' de fire is bright*



# Blast Photography

JOHN O'BRIAN

*"Nuclear explosions are beautiful," she said. "At a distance."  
— Elizabeth Hay, Garbo Laughs*



Nuclear photography, like the nuclear era itself, is haunted by questions of excess. To understand how atomic representation has shaped public attitudes and memory, I want to consider the surplus production of mushroom cloud imagery since the end of World War II through two early images, one from the Nagasaki bombing in 1945 and the other from Test Baker at Bikini Atoll, then a Trust Territory of the United States, in 1946.

After the bombing of Hiroshima and Nagasaki in 1945, the mushroom cloud became the dominant icon of the atomic age, its most extravagant figurehead. Every part of the globe was stamped with its image through photographs and imprinted with a spectacle of mass destruction. Photographs taken during the attacks of 6 and 9 August made the mushroom cloud instantly recognizable, and the atomic tests conducted by the United States at Bikini Atoll and in Nevada following the end of World War II made it a staple of the mass media and popular culture.

The first mushroom cloud produced by an atomic bomb, which did not acquire its “mushroom cloud” moniker immediately, rose from

*Joint Task Force One  
A Tree Grows in Bikini,  
from the book Operation  
Crossroads: The Official  
Pictorial Record, 1946*

*AP Wirephoto  
Atomic Bomb Sends  
Smoke 20,000 Feet  
Above Nagasaki, August  
9, 1945*



the desert floor at the Trinity test site in Alamogordo, New Mexico, in the early hours of the morning on July 16, 1945. Upon witnessing the explosion, the theoretical physicist J. Robert Oppenheimer, sometimes called the father of the atomic bomb for his role in its development, famously (and pompously) declared, "I am become Death, the destroyer of worlds," while speaking in front of a motion-picture camera recording the event. A photograph of a statue of Oppenheimer, taken by Barbara Norfleet at the Bradbury Science Museum in Los Alamos, transmutes the scientist into



*Barbara Norfleet*  
Dr. J. Robert  
Oppenheimer, Bradbury  
Science Museum, Los  
Alamos, 1988

a metaphorical pillar of salt capped by his signature porkpie hat. Norfleet's camera freezes Oppenheimer against a black background, making it look as if he has just gazed upon the forbidden and paid a biblical price for his transgression.

The iconography of nuclear explosions began with the Trinity explosion, where photographers took at least 100,000 photographic exposures of the test. At laboratories in Los Alamos, Julian E. Mack and Berlyn Brixner designed specialized cameras for recording the detonation and scientifically measuring the blast yield of the weapon. Some of the photographs record the exact moment of their execution down to a fraction of a split second,

which is recorded on the prints. Nuclear testing and the development of increasingly sophisticated camera and film equipment to document what otherwise could not be recorded went hand in hand. A photograph taken during preparations for the first Bikini test, for example, shows the mounting of dual movie cameras in the nose of an observation aircraft. "The technologies of cinema and warfare have developed a fatal interdependence," observes Paul Virilio, the French theorist of speed, technology and warfare. An extreme version of this interdependence was produced by the atomic "flash" at Hiroshima, where the violent excess of light and heat from the explosion caused images of bodies to be imprinted on the steps and walls of the city. In her essay "Radical Contact Prints," Susan Schuppli writes that these radiographic prints—literally atomic shadows—"document life at the very moment of death." A survivor described the Hiroshima sky after the explosion as being "filled by a garish light which resembles the magnesium light used in photography."

The most immediately recognizable of all mushroom cloud photographs came from the "Fat Man" plutonium bomb dropped on Nagasaki. It exists in multiple versions and constitutes the first of my primary examples. The version released to the press was a two-tone, two-tier



*Kyungab Ham*  
Nagasaki and Hiroshi-  
ma Mushroom Clouds  
02, 2010, *Seoul Art*  
*Collection*



*Kenji Higuchi*  
A Beautiful Day at Crys-  
tal Beach, Mihama Bay,  
August 2004



image taken from the air minutes after the detonation, as the caption states, and then rapidly circulated around the globe as a wirephoto. The upper part of the cloud contrasts sharply with the dark column of smoke and debris that forms the lower part, and is separated from it by a slender gap. The gap is highly charged, like the gap in Michelangelo's ceiling fresco in the Sistine Chapel between God's forefinger and the hand of Adam, but whereas Michelangelo's fresco represents the creation of life the Nagasaki photograph represents the destruction of it. The relationship between generative and destructive power is also the

subject of a poem by William Carlos Williams. In "Asphodel, That Greeny Flower," Williams reflects on the correlation between the mushroom cloud as a blooming flower and the mushroom cloud as a bloom of death. "The bomb/also/ is a flower," he writes, aware that in classical times asphodels were associated with mourning and death. Asphodels were flowers of hell.

The gap separating the light and dark components of the Nagasaki image, referred to as a signature feature by those who make a specialty of studying mushroom cloud iconography, makes it unlike any other atomic image. But this has not prevented the photograph from being identified with the explosion that took place three days earlier at Hiroshima. Because Hiroshima and Nagasaki are often spoken of as a single event, and because the attack on Hiroshima preceded that on Nagasaki, the sibling cities are frequently conflated into one word. "Hiroshima" has become a sign for both. Soon after the war, the Kyoto publisher Awatani printed a postcard of the Nagasaki cloud with an inscription, "The Atomic Cloud," written across it in English and Japanese. The postcard alludes to both Hiroshima and Nagasaki without naming either. It also miniaturizes what is pictured. By encouraging audiences to view the explosion as a hold-in-the-hand spectacle, the postcard domesticates the bomb. The Atomic Cloud, like other postcard images of disastrous events, tames the catastrophe.

In addition to being sold for touristic purposes, a version of the Nagasaki mushroom cloud was used by the US Army Air Force to commemorate the event. A deluxe presentation album containing twenty three tipped-in photographs—one shy of the number found in a standard roll of film—includes the Nagasaki image. The image is horizontal in format and shows a section of the wing of the observation plane from which it was taken. Written across the top of the wing, which is represented in the lower right-hand corner, is the photograph's identification number, "AEC-51-40128 58381 A.C." The overlapping of text and wing is no doubt coincidental but serves to emphasize, as other photographs of the Nagasaki mushroom cloud do not, the connection between the interior of aircraft, where an anonymous photographer was aiming his camera out the window, and the exterior of the aircraft, where a megaton explosion had destroyed a city. Here the act of photographing the mushroom cloud and the act of detonating the bomb align. A military aircraft delivered the nuclear weapon, another military aircraft delivered the photograph.



*Awatani (Kyoto)*  
The Atomic Cloud,  
c 1945-1946



*U.S. Army Air Force*  
Presentation Album of  
Original Photographs  
of the Bombing Mis-  
sions on Hiroshima  
and Nagasaki [Naga-  
saki Mushroom Cloud],  
August 9, 1945



The first two atomic tests at Bikini Atoll, code-named Operation Crossroads, were conducted in July 1946. Test Baker, which followed soon after Test Able, provides my second example of a mushroom cloud photograph that has been persistently reproduced and circulated. Test Able and Test Baker were the fourth and fifth nuclear detonations ever to take place. In part, they were scientifically managed nuclear experiments designed to assess the impact of aerial (Able) and underwater (Baker) detonations on target ships and biological specimens; and, in part, they were political theatre, carefully staged media events with the world press in attendance, mounted to assert American nuclear superiority and dispel reports about the dangers of radiation. Photographers from Associated Press, International News Service, Acme and *Life* magazine were invited to attend on the condition they pooled their images for distribution under the supervision of the United States military. Seven hundred fifty cameras were employed by the news photographers and military cameraman to record the blasts, using up half the world's



*Berlyn Brixner*  
Trinity Test Explosion,  
0.006 Seconds, July 16,  
1945



*Berlyn Brixner*  
Trinity Test Explosion,  
0.016 Seconds, July 16,  
1945. From the collection  
of Mark Ruwedel

supply of motion picture film in the process. Among them were the largest still camera then in existence, with a 48-inch focal length telephoto lens, and an ultra high-speed motion camera capable of shooting 10,000 frames per second. "The multiplicity of cameras was necessary to insure full records of results," a pictorial book on the operation stated, "particularly damage results." The "damage results" from Bikini that entered into public memory were provided by photographs from Test Baker, detonated 15 metres below the surface of the water. The images exist in at least as many variations as there were cameras trained on the event, and represent a column of water rising from the blast to form a cloud of condensation that looks more like a cauliflower than a mushroom. (Some early reports of the explosion did, in fact, describe the cloud as having a cauliflower form.) The most widely known of the images goes by several titles, of which the most straightforward is Mushroom Cloud, Test Baker. A written description of a version of the image appearing in *Operation Crossroads: The Official Pictorial Record*, published a few months after the tests by the trade publisher William H. Wise in conjunction with the military, concentrates less on the shape of the cloud than on the damage effects of the explosion. The description comments on what is invisible to the camera as well as on what can be seen: "The wall of spray and steam at the base of the column rushes precipitantly out from the center, drenching the target ships with its thick poisonous wetness.... Small wonder that 90 percent of the target vessel array was affected by the deadly radioactivity. Although the amount of damage done to the hulls was not very different from predicted damage, the extent of radiological hazards went beyond what had

*Joint Task Force One*  
That Men May Live,  
from the book *Operation*  
*Crossroads: The Official*  
*Pictorial Record, 1946*



been expected.” This passage does not mince words. Ships were drenched in “thick poisonous wetness” and affected by “deadly radioactivity,” while the “radiological hazards went beyond what had been expected.” The phrases address the dangers of radiation with a clarity and openness that would not last in press communiqués issued by military authorities. After 1946, words such as “poisonous” and “deadly” were excised from the official nuclear lexicon and replaced with the anodyne language of bureaucratic obfuscation.

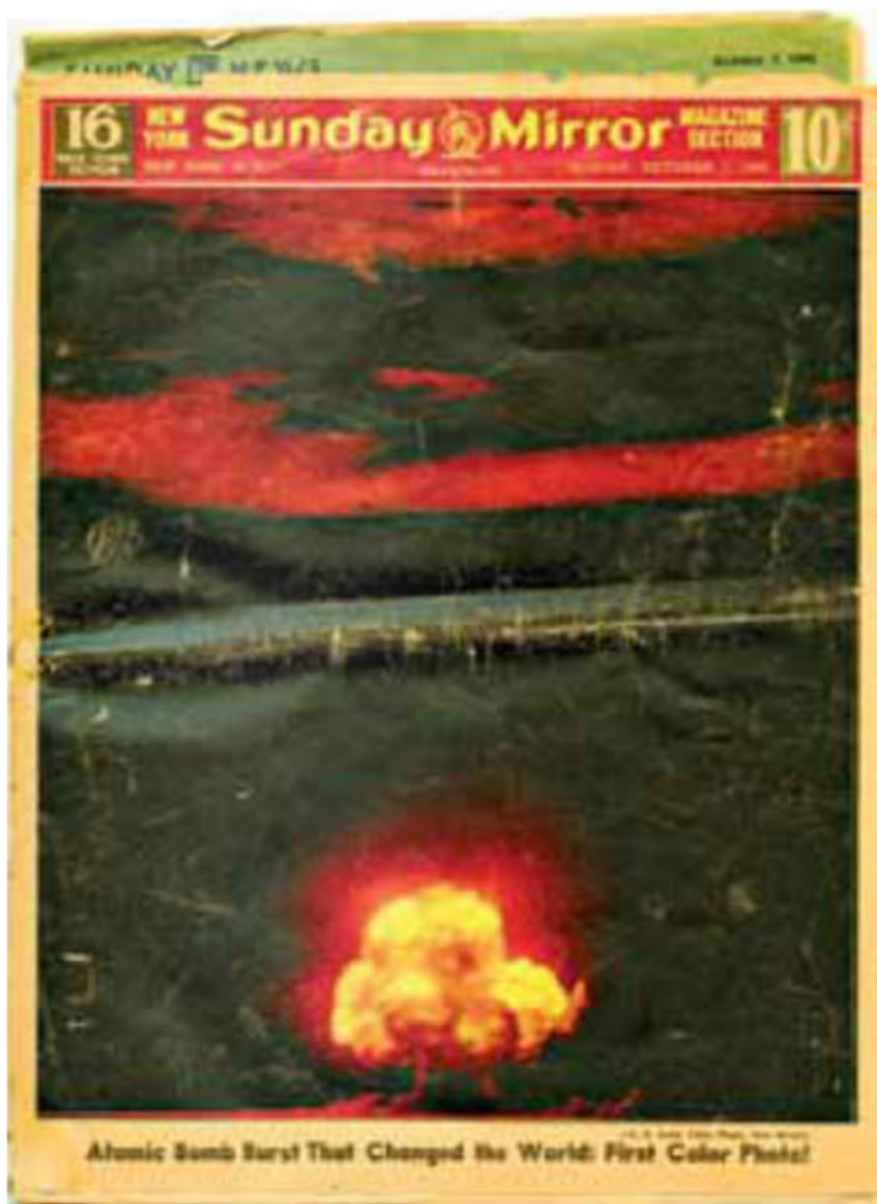
Among the biological specimens placed on the target ships and assessed for radiological and other kinds of harm were pigs, goats, rats, mice and guinea pigs. Pigs were used because of the compatibility of their skin and hair to that of humans, and goats because their weight and bodily fluids were similarly compatible. In *Operation Crossroads: The Official Pictorial Record*, there is a photograph of a goat laid out diagonally on an operating table, its hind feet bound with a cord of rope, surrounded by four doctors administering a blood transfusion for radiation sickness. The goat has wisps of hair encircling its face, making it look uncannily human, as if it were more conscious of its situation than the masked doctors around it. The caption beneath the photograph reports that 35 percent of the animals used in the tests died: 10 percent from the blasts; 15 percent from radiation; and another 10 percent from medical experimentation. The circulation of photographs of irradiated goats and pigs after Operations Crossroads, like the circulation of words and sentences describing radiological threat, was subsequently curtailed by military censors. In *Operation Sandstone: The Story of Joint Task Force Seven*, a book of photographs of tests conducted at Enewetak Atoll in 1948, there are no images of animals or masked doctors. The photographs selected for general release by authorities were less about radiation experiments and the effects on animals and people than about the technological sublime, the flash-and-bang spectacle of fireballs and mushroom clouds.

Two dozen photographs in *Operation Crossroads: The Official Pictorial Record* are of the Test Baker mushroom cloud, not to mention the gold embossed image of Mushroom Cloud, Test Baker on the front cover of the book or the photograph of an atomic cake baked in the shape of the cloud being cut by Vice Admiral “Spike” Blandy and his wife to celebrate the completion of the tests. Some of the photographs were taken by drones flying overhead, some by photographers in



*Joint Task Force One Mass Grouping of Cameras Used to Photograph First Bikini Tests, from the book Operation Crossroads: The Official Pictorial Record, 1946*

*Jack Aeby (U.S. Army) Atomic Bomb Burst That Changed the World: First Color Photo, 16 July 1945, October, 1945*



*International Nickel Company (Inco) advertisement Even this cloud has a silver lining, advertisement in Time magazine, March 22, 1954*





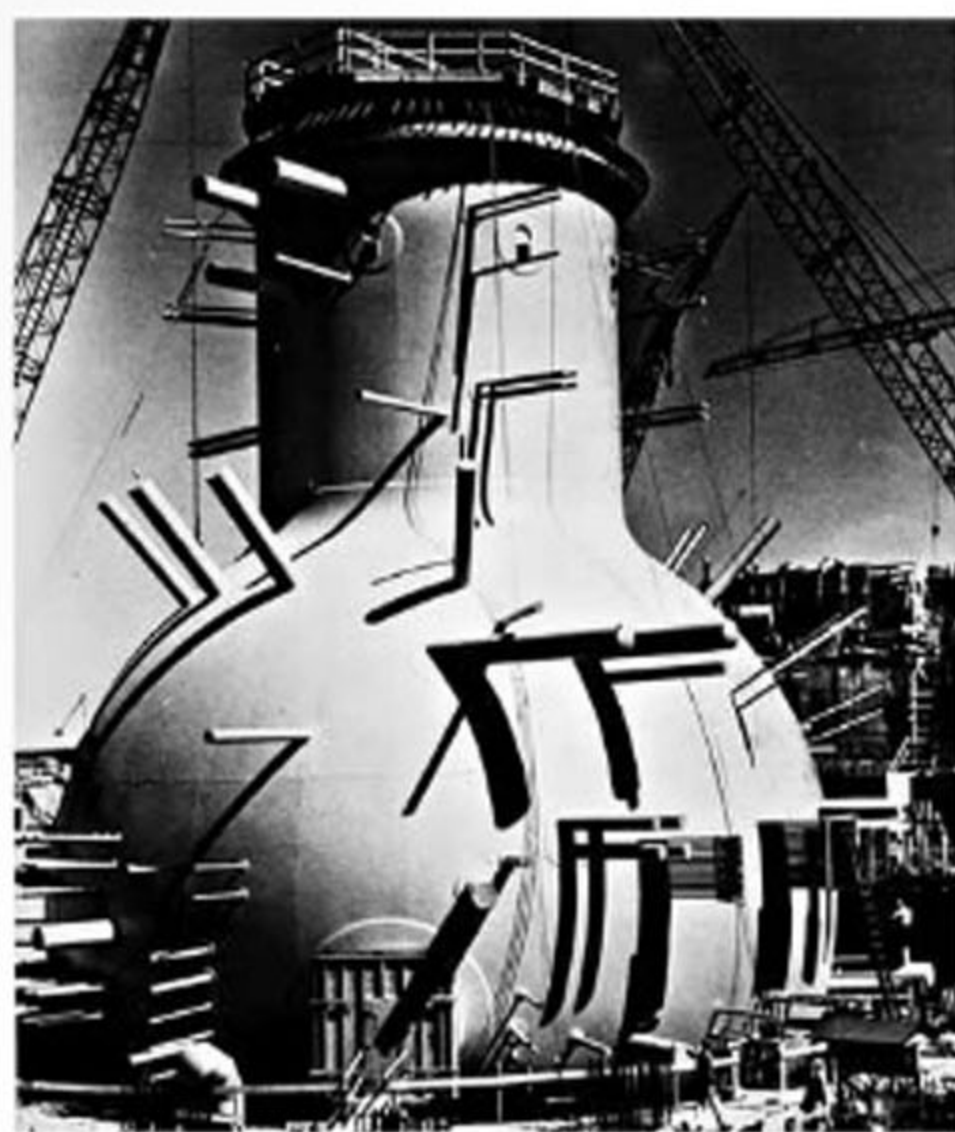
*U.S. Army Air Force  
Presentation Album of  
Original Photographs  
of the Bombing Mis-  
sions on Hiroshima and  
Nagasaki [Survivors  
Making Their Way  
through the Ruins of  
Hiroshima or Nagasaki],  
August 1945*

observation planes, some from a specially built tower, some from the surface of the water, and some from the atoll itself. Over time, *Mushroom Cloud, Test Baker* has supplanted most other images in constructing a public memory of the event. In addition, the photograph has served as the matrix for a new body of imagery ranging from advertisements to protest art.

The International Nickel Company (Inco) published a full-page advertisement in *Time* magazine in 1954, in which *Mushroom Cloud, Test Baker* was transformed from a black-and-white photograph into a grisaille watercolour. The illustration in the advertisement, which reverses the photograph, remains faithful to most of its characteristics, emphasising the extremes of dark and light in the cloud as

well as in the surrounding sky and water, but makes two notable alterations. It eliminates the target ships that were placed at ground zero by the military to test the force of the bomb, and it inserts a prominent group of thatched huts and palm trees into the lower right foreground. The changes soften the image, transforming a representation of the atomic sublime into what might be called the atomic picturesque. Whereas the force of the atomic sublime can seem disturbingly seductive, the orderliness of the atomic picturesque is merely pleasurable. Like postcards of nuclear explosions, the advertisement domesticates the deadly event. It strikes me that the bathing suit named by Louis Réard after the 1946 Bikini tests is a more compelling representation of the event than the advertisement; at least the two-piece "Bikini" acknowledges the sexual character of a nuclear discharge.

The reason for Inco's pictorial ledger-main is announced in the advertisement's message: "Even this cloud has a silver lining," the caption reads, invoking the beneficial side of the nuclear pharmakon. Nickel alloys are needed in reactors to produce radioisotopes for medical purposes, Inco states, because the alloys are non-corrosive, heat-resistant and strong. The company is ideally situated to help in the production of radioisotopes for peaceful purposes. The message of the advertisement is consistent with those of other Inco advertisements in American magazines in 1954. An ad placed in *Collier's* explains to readers "How Inco Nickel Is Helping to Produce Power from the Peace Atom." President Eisenhower's recently coined slogan "Atoms for Peace" was clearly finding an audience among military suppliers, just as the Atomic Energy Commission's promotion of nuclear power for civilian purposes was attracting commercial interest. "While the AEC's weaponeers are at work in the Pacific," an article in *Time* observed, "the AEC is also



*United States Information  
Service  
Reactor Container  
36 meters high being  
constructed for the  
Niagara Mohawk Power  
Corporation, Lake On-  
tario near Oswego, New  
York, c 1950s*



going after peaceful nuclear power in a big way.” In other words, the United States was turning swords into ploughshares while looking for ways to build even bigger bombs. The first thermonuclear test, Castle Bravo, took place at Bikini on March 1, 1954, just weeks before the Inco advertisement appeared. It was the most powerful nuclear device ever exploded by the United States and, after Hiroshima and Nagasaki, one of the most lethal. The contradictions in the “Atoms for Peace” movement are made explicit in Dennis Brack’s photograph of military officers watching a test explosion from deck chairs on the patio of their beach club while getting a sun tan.

From the tone and content of Inco’s advertisement, readers might be persuaded that a significant part of the company’s future lay in the medical uses of nickel. They would be wrong. In an era of near-permanent war—an era that still shows no sign of abating half a century later—it follows that all corporate and government activities must be performed in the name of peace. By 1950, and the outbreak of the Korean War, Inco had established a near monopoly in the production and distribution of nickel in North America—it was supplying close to 80 percent of the United States’ requirements—and Congress launched an investigation into the company’s market dominance and pricing practices. Nickel was a “true war material,” the United States Department of Defense declared, and it wanted the Canadian company to provide the metal to the United States at a competitive cost. The construction of nuclear reactors, whether for military or peaceful purposes, required a lot of aluminum, and the United States wanted to be sure of having secure supplies.

The Congressional investigation bruised Inco’s image. To repair the damage, the company increased production to bring down prices and initiated an aggressive advertising campaign to refashion itself as a concerned corporate citizen. Inco even managed to find a “silver lining” in the Baker mushroom cloud, or so its advertisement claimed, by converting a destructive force into a positive benefit to medicine. By 1954, the company was operating at full capacity and selling all the nickel it could mine. Only a very small part of its production, however, went for reactors that were making radioisotopes for medical purposes. Much more of its output went to feed the United States’ war machine. A month after the advertisement in *Time* appeared, the Inco Triangle, an in-house company publication, reported: “War or the preparation for war creates an immediate demand for all metals and destroys the usual balance between demand and supply.... We are now in such a period.” The nickel supplied to the United States by *Inco*, like the uranium supplied to the United States Department of Defense by another Canadian company, Eldorado Mining and Refining, was directed more towards making mushroom clouds than producing isotopes for medicine.

In 1981, Barbara Kruger used a photograph of the Test Baker

*Dennis Brack*  
Sitting on the Patio  
of the Officer’s Beach  
Club, Illuminated by  
an Atomic Explosion at  
Enewetak Atoll, April  
8, 1951



*Associated Press*  
Lieutenant T.H. Martin  
Mounting Dual Movie  
Camera in the Nose of  
a B-29 Bomber, Bikini  
Atomic Bomb Tests,  
1946



explosion to deliver a message about nuclear weapons that drew on the techniques of billboard advertising. She cropped the photograph tight at the edges to bring it closer to the viewer. "Your Manias Become Science," the work declares, if one reads the words sequentially, or "Manias

Become Your Science," if one reads the middle two words first. The message was directed at those nations in possession of nuclear weapons, members of the so-called Nuclear Club. When Kruger exhibited the work in Sydney and Mexico City, she altered the title to *Their Manias Become Science* in order to distinguish Australia and Mexico from countries that were engaged in the nuclear arms race. Kruger's appropriation of an iconic Bikini image, and her reanimation of it with an aggressive political slogan, is presented without irony. The kind of dark humour found in Stanley Kubrick's film, *Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb*, where Slim Pickens rides an atomic bomb to doomsday, is alien to Kruger's project.

In *Your Manias Become Science*, the spectacle of the mushroom cloud ceases to read as a cliché. Instead, it reads as threatening. It also reads as threatening in the work of Bruce Conner, who used images of the Test Baker explosion in three different works: A 36-minute film, *Operations Crossroads*,

1976, which was made from declassified footage of the Bikini explosion; a photomontage called *BOMBHEAD*, 1989, which was assembled from cut up photocopies and newspaper images; and a large-scale print, also called *BOMBHEAD*, 2002, that was based on the photomontage. The cranium-shaped mushroom cloud in *BOMBHEAD* is attached to a male figure's uniformed body by a columnar neck of water produced by the detonation, and refers back to Conner's early work as a Beat artist in the late 1950s and early 1960s, a time of intensifying fear in the United States about the risks of nuclear catastrophe. In Conner's 1959 sculpture, *Child*, a deformed body seated in a wooden highchair resembles a charred corpse. *BOMBHEAD*, like *Child*, functions within an ongoing economy of fear precipitated by the Cold War.

*From "Nuclear Flowers in Hell" in Camera Atomica, edited by John O'Brian and published by Black Dog Press. John O'Brian is a writer, curator and art historian. He has written and edited books on modern art history and on nuclear narratives, including Atomic Postcard: Radioactive Messages from the Cold War. He teaches at the University of British Columbia and lives in Vancouver.*



Bruce Conner  
BOMBHEAD,  
2002/1989



Barbara Kruger  
Untitled (Your Manias  
Become Science), 1981.  
Courtesy Mary Boone  
Gallery, New York