

# How Japanese scientists confronted the U.S. and Japanese governments to reveal the effects of Bikini H-bomb tests

Okuaki Satoru<sup>1</sup>

Introduction and translation by Steve Rabson

The original Japanese text can be found [here](#).

## Introduction

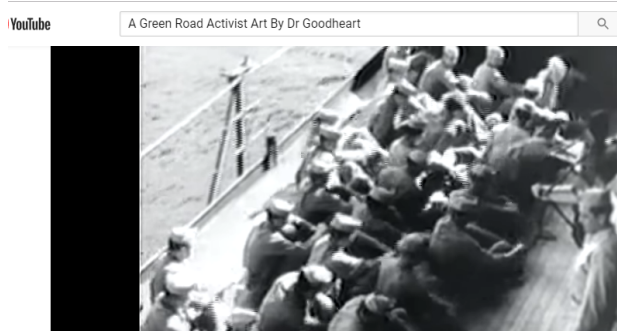
The March, 1954 “Bravo Shot” H-bomb test in the Pacific dumped radioactive debris on the Marshall Islands, U.S. servicemen, and the crew of a Japanese fishing boat. The multi-megaton blast infected Marshall Islanders with radiation sickness and caused cancers in the years that followed. Their contaminated home on Bikini Atoll remains uninhabitable to this day. U.S. servicemen who had been purposely transported by the Navy into the blast zone have suffered from multiple cancers from radiation exposure. For years their claims denied were denied by the Veterans Administration. It took an act of Congress in 1990 to provide compensation for them and their children with birth defects. The crew of the Japanese fishing boat, Lucky Dragon No. 5, suffered from acute radiation poisoning. One crew member, Kuboyama Aikichi (age 40), died while in treatment for exposure.



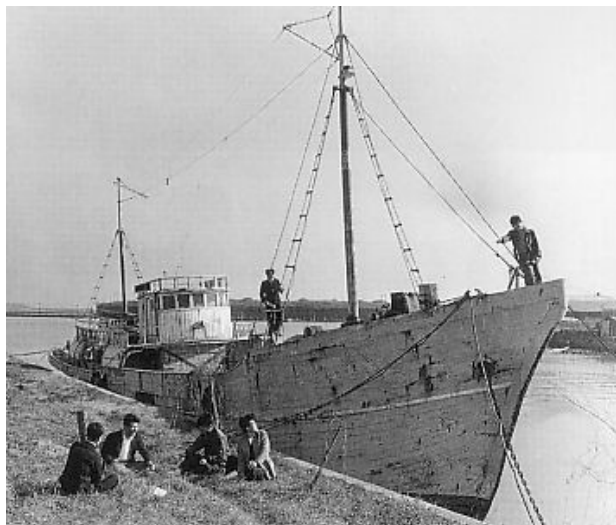
**“Bravo Shot” H-bomb test, Bikini, March 1, 1954**



**U.S. military forcibly evacuating Marshall Islanders from Bikini Atoll**



### **U.S. servicemen transported under orders into the Bikini blast zone**



### **Japanese scientists examine the hull of contaminated Lucky Dragon at Yaizu City port**

Okuaki Satoru tells below how Japanese scientists confronted, and eventually overcame, roadblocks thrown up by both the U.S. and Japanese governments to obtain urgently needed information for the treatment of radiation poisoning and to determine the extent of environmental contamination. As Jacob Darwin Hamblin and Linda M. Richards explain in the journal *Historia Scientiarum*, “Japanese perspectives influenced several American

scientists to think differently about the implications of nuclear tests for humans and the natural environment . . . despite stiff resistance from offices of the U.S. government.”<sup>2</sup>

### ***The U.S. government withholds information on lethal fallout***

On March 16, 1954, the newspaper *Yomiuri Shimbun* first reported victims of a U.S. nuclear test in the Pacific among Japanese crew members of the fishing boat Lucky Dragon. The U.S. government acknowledged that tests had been carried out, but, insisting on secrecy, refused to provide information about them to Japanese scientists. Today it is known that they were hydrogen bomb tests, but even that wasn’t disclosed at the time. The only information Japanese scientists could obtain was from radioactive contamination of the Lucky Dragon’s hull.

Several scientists visited the fishing port at Yaizu City in Shizuoka Prefecture and recorded high levels of radioactive contamination from fallout on the boat’s hull. Okano Masaharu, a specialist in measuring radioactivity, was twenty-eight at the time and on the faculty of the Institute for Scientific Research (now known as RIKEN).

After World War II when Japan was under Allied Occupation (1945-1952), research on atomic energy was strictly prohibited. However, in 1950 permission was granted for research on radioactive isotopes. Okano traveled throughout the country giving lectures to inform Japanese about isotopes, and became skilled in handling radioactive materials. On April 16, 1954, he traveled with his supervisor, Dr. Yamazaki Fumio, to examine the hull of the Lucky Dragon. A full month had passed since fallout had contaminated the boat, but both men were astonished to see the needle of their radiation meter swing wildly up into the danger

zone. This was the first time they had detected significant radiation outside their laboratories, and it exceeded one hundred times the level occurring in nature. With the discovery that radioactive fallout had contaminated the Lucky Dragon, scientists at universities in Tokyo, Kyoto, Shizuoka, Osaka and Kanazawa began their own studies, communicating their findings by telephone.

Ikeda Nobutaka conducted research on radioactive fallout in Professor Kimura Kenjirō's research laboratory in the Chemistry Department of Tokyo University. He also visited the Lucky Dragon at Yaizu, and collected samples of fallout-contaminated material. Returning with them to the laboratory, he and about a dozen other researchers spent the next several days and nights frantically analyzing the material out of acute concern for the Lucky Dragon's crew.

"We needed the results as soon as possible," said Ikeda, now eighty-eight. "Without knowing the characteristics of the fallout, there would be no way to find a treatment for the crew. We were also aware that the reputation of Japanese scientists was at stake. If our results turned out to be wrong, it would be a disgrace for Japan's scientific methods."

Over the next month Ikeda and his colleagues found twenty-seven types of atomic radiation including Strontium (Sr) 89, Yttrium (Y) 90, and Cerium (Ce) 141. "We were overjoyed because knowing the radiation characteristics meant that it could be located in patients' bodies and a way might be found to eliminate it. I can still remember how lovely the sunset looked the evening we finally finished the analyses."

### ***U.S. Atomic Energy Commission declares "no risk" from radioactive contamination***

The U.S. carried out many nuclear weapons tests in the Pacific; however, the one named

"Castle Bravo" on March 1, 1954, which showered fallout on the Lucky Dragon, was the most powerful conducted to that time, 1,000 times the fifteen megatons of the Hiroshima bomb. On March 31, Lewis Strauss, Chairman of the U.S. Atomic Energy Commission, issued a statement denying that there had been any contamination of fish or seawater.

With respect to the stories concerning widespread contamination of tuna and other fish as a result of the tests, the facts do not confirm them. The only contaminated fish discovered were in the open hold of a Japanese trawler [that had been] well within the danger zone. The Federal Drug Administration has informed us that their thorough survey found no radioactive contamination of boats or fish. The fallout dissipated rapidly in the ocean current and has posed no risk. No radioactivity has been detected in an area between five and five hundred miles of the test site.

There was a rumor last week of a danger from radioactivity falling in the United States. As with Soviet nuclear tests, there might be a small increase in natural background radiation in some local areas. However, it is only infinitesimally higher than what has been observed after previous tests in the continental United States and overseas, far too small to pose any risk to persons, animals or plants. Radioactivity dissipates rapidly after tests, and soon returns to normal levels of natural background radiation.

Did American officials deny that radioactivity had contaminated the ocean because they wanted to conceal the possibility that it had, or because they didn't believe it would spread over a wide area beyond the test site?

Professor Higuchi Toshihiro at the Institute for the Study of Diplomacy of Georgetown University cites radioactive contamination from the Bikini tests as having initiated world-wide concern over the problem of environmental pollution; and he has studied how the governments and societies in Japan and in the United States took opposing positions over the issue of radioactive pollution.

It was known among scientists at the time that, at least in theory, radioactive contamination of the ocean from nuclear tests could be detected in seawater, plants, and animals. So when the U.S. conducted the first hydrogen bomb test in 1953, the Atomic Energy Commission began surveying seawater, tuna, and other ocean life for radioactivity. The Bikini test that contaminated the Lucky Dragon occurred the following year, but the data collected by the survey was still insufficient. Nevertheless, the Atomic Energy Commission sought first and foremost to quiet the furor over the tests at home and abroad, and issued a series of announcements for political reasons. Lacking reliable scientific data, the Commission surveyed a large area of seawater in which any trace of radiation would have been much diluted, and then claimed no contamination had been detected. Thus, it wasn't that the Commission was trying to conceal findings of contamination, or that

it was ignorant of the possibility. For strictly political reasons, it quickly declared the ocean safe.<sup>3</sup>

***Contradicting its own denials of radioactive contamination, the U.S. government banned imports of Japanese tuna***

The U.S. government was greatly alarmed by news that radiation had contaminated tuna in Japan. At the time of the Bikini tests the U.S. was importing large quantities of canned tuna from Japan. Cheap and plentiful, long-finned tuna was canned in vegetable oil.

The development of Japan's canning industry had begun before World War II in the fresh waters of Shizuoka Prefecture. In the 1950's before Japan's heavy industry recovered from the war, the government strongly encouraged the production of goods for export of which canned tuna was a key enterprise. Sold under the brand names "Fujiyama" and "Geisha," high-quality and inexpensive Japanese canned tuna became so popular it dominated the American market.

Now the U.S. government became deeply concerned that contaminated tuna was being imported and distributed in America. Located by Professor Higuchi in the U.S. National Archives, an official U.S. government memo entitled "fish exports" was sent to Washington from the American Embassy in Tokyo on March 21, 1954, five days after the *Yomiuri Shimbun* reported contamination of the fishing boat Lucky Dragon. Higuchi described the memo:

The memo explained that embassy officials and representatives of the American fishing industry had warned the Japanese government to stop exports of contaminated

fish. The government agreed that no fish would be exported to the United States in which radiation was detected.<sup>4</sup>

Subsequently, a member of the Atomic Energy Commission came to Japan and went to Yokohama Port. There, he ordered thorough monitoring tests for the fins and bellies of frozen tuna scheduled for export to the United States. People in Japan were outraged because, on the one hand, the U.S. government was denying that radiation from nuclear tests had contaminated the ocean or fish, yet it was suspiciously monitoring fish being exported to America.

***The Japanese government refuses to pursue U.S. responsibility for contamination and supports continuation of nuclear tests***

How, then, in the wake of radiation injuries to the Lucky Dragon's crew and nuclear contamination of tuna, did the Japanese government deal with the U.S. government that had carried out the tests?

On March 17, with the Diet in an uproar over the Bikini tests, Foreign Minister Okazaki Katsuo came under persistent questioning in a session of the Lower House Budget Committee. Representative Imazumi Isamu, a member of the Socialist Party, severely criticized the Japanese government for failing to request crucial information from the U.S. about the nuclear tests. "America has inflicted radiation injuries on our country's innocent fishermen. The treatment varies depending on what kind of bomb was detonated. A Japanese government that fails to seek this information for treating the victims is in no way worthy of representing our citizens. It is truly unforgivable."<sup>5</sup>

Representative Kawasaki Hideji of the Progressive Party insisted that the Japanese government confront the U.S. government.

We have learned that the test was of either a hydrogen or a cobalt bomb. Should Japan bring the case to the International Court of Justice, world opinion would be deeply sympathetic to a nation that has been victimized three times by nuclear explosions. Our foreign policy must be courageous enough to petition the court. Does the Foreign Minister agree? Please answer the question directly.<sup>6</sup>

"We know from the information they already provided us that the Americans are very sympathetic," replied Foreign Minister Okazaki. "They have said they will send doctors specializing in atomic bomb injuries and pay compensation no matter the cost. I am confident we can resolve the issue without going to the International Court of Justice."<sup>7</sup>

Foreign Minister Okazaki reiterated the decision not to pursue America's legal responsibility at a party given by the America-Japan Society in Tokyo on April 9, 1954. A tape recording of his speech before guests that included the American ambassador is available at the Society's office in Akasaka.

Although it goes without saying that the fishing industry Japan's economy relies on has suffered major losses as a result of the ban in the area of the ocean affected by the atomic tests, we have no intention of asking the U.S. government to stop them. We recognize that they are indispensable to the security, not only of America, but of Japan and

other democratic nations. Thus, we join the other democratic nations in helping to make sure the atomic tests are successful.<sup>8</sup>

Radioactive contamination from the Bikini test occurred two years after Japan regained its independence in 1952 under the San Francisco Peace Treaty. Yet, despite the damage the test inflicted on the nation, the Japanese government supported their continuation. This attitude provoked outrage among the citizenry.

### ***Japanese scientists respond***

Japanese government leaders refused to pursue U.S. responsibility for the damages inflicted by the Bikini test. However, among all government departments, the Fisheries Agency was most acutely aware of the danger. It alone planned a survey of radiation contamination in the ocean area around the Bikini atoll where the test was conducted. “The U.S. government was entirely downplaying the test’s effects,” explained Miyake Yasuo who joined the scientific advisory group organized to carry out the survey. “The Japanese government was seeking compensation for injuries to the Lucky Dragon’s crew and the major damage to our fishing industry, but conducting a survey at the site for crucial information about the radioactive contamination was absolutely essential.”

With daily reporting in the newspapers on their expedition aboard the ship *Shunkotsu Maru*,

the scientists were given a heroes’ welcome when they returned to Tokyo on July 4, 1954 from their fifty-one day voyage. It was their survey that first determined the extent of ocean contamination and damage to the environment from atomic tests. Though conducted for the Fisheries Agency, the results advanced knowledge in several scientific fields including radiology, oceanography, meteorology and medicine.

### **Related articles:**

Ōishi Matashichi and Richard Falk, “The Day the Sun Rose in the West. Bikini, the Lucky Dragon and I (<https://apjff.org/2011/9/29/Richard-Falk/3566/article.html>),” *Asia-Pacific Journal*, June 19, 2011, Vol. 9, No. 3

Steve Rabson, “Okinawa was a ‘storage location’ for nuclear weapons: Published accounts (<https://apjff.org/2013/11/1/Steve-Rabson/3884/article.html>),” *Asia-Pacific Journal*, January 7, 2013, Volume 11 | Issue 1 | Number 6

“Nuclear Hawks in Tokyo Call for Stronger US Nuclear Posture in Japan and Okinawa (<https://apjff.org/2018/11/Kulacki.html>),” Gregory Kulacki (<https://apjff.org/authors/view/14846>) with a comment by Steve Rabson (<https://apjff.org/-Steve-Rabson>), *Asia-Pacific Journal*, June 1, 2018, Volume 16 | Issue 11 | Number 1

**Okuaki Satoru** is a program director at NHK. Born in Kanagawa Prefecture, he graduated with a Masters Degree from the Life Sciences Division of Tokyo University, joining NHK in 1999. He has directed television documentaries on the work of novelist Inoue Yasushi and the massacres of Koreans following the 1923 Tokyo earthquake. He was awarded the Media Ambitious Prize in 2013 for the documentary “Radioactive Contamination of the Ocean

Revealed by Japanese Scientists: the Bikini Test Nuclear Fallout and the Ship Shunkotsu Maru,” which is the subject of the excerpts below from his book.

**Steve Rabson** is Professor Emeritus of East Asian Studies, Brown University, and a contributing editor to the *Asia-Pacific Journal*. He is the author of *Righteous Cause or Tragic Folly: Changing View of War in Modern Japanese Poetry* (Center For Japanese Studies, University of Michigan, 1998) and *The Okinawan Diaspora in Japan: Crossing the Borders Within* (University of Hawaii Press, 2012). His recent articles include “Okinawa was a ‘storage location’ for nuclear weapons: published accounts (<https://apjif.org/2013/11/1/Steve-Rabson/3884/article.html>),” *Asia-Pacific Journal*, January 7, 2013, Volume 11 | Issue 1 | Number 6 and “Nuclear Hawks in Tokyo Call for Stronger US Nuclear Posture in Japan and Okinawa,” Gregory Kulacki (<https://apjif.org/authors/view/14846>) with a comment by Steve Rabson (<https://apjif.org/-Steve-Rabson>), *Asia-Pacific Journal*, June 1, 2018, Volume 16 | Issue 11 | Number 1 (<https://apjif.org/2018/11/Kulacki.html>). He was stationed as a U.S. Army draftee at a nuclear weapons storage base in Henoko, Okinawa, 1967-68.

## Notes

<sup>1</sup> From Okuaki Satoru, 海の放射能に立ち向かった日本人：ビキニからフクシマへの伝言 *Radioactive Contamination of the Ocean Revealed by Japanese Scientists: From Bikini to Fukushima*, Junpō-sha, Tokyo, 2017.

<sup>2</sup> Jacob Darwin Hamblin and Linda M. Richards, “Beyond the Lucky Dragon: Japanese Scientists and Fallout Discourse in the 1950s,” *Historia Scientiarum*, Vol. 25, No. 1 (2015), pp. 36-56.

<sup>3</sup> Okuaki, pp. 44-45.

<sup>4</sup> Ibid., p. 46.

<sup>5</sup> Ibid., p. 47.

<sup>6</sup> Ibid., pp. 47-48.

<sup>7</sup> Ibid., p. 48.

<sup>8</sup> Ibid., pp. 48-49.