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## *The President*—John F. Kennedy



Harold Macmillan (left) meets US President John F. Kennedy at Key West in Florida to plan US nuclear tests on Christmas Island

Source: US Government.

As he stood before the United Nations General Assembly in September 1961, US President John F. Kennedy said that ‘general and complete disarmament must no longer be a slogan’:

Today, every inhabitant of this planet must contemplate the day when this planet may no longer be habitable. Every man, woman and child lives under a nuclear sword of Damocles, hanging by the slenderest of threads, capable of being cut at any moment by accident or miscalculation or by madness. The weapons of war must be abolished before they abolish us ...

To halt the spread of these terrible weapons, to halt the contamination of the air, to halt the spiralling nuclear arms race, we remain ready to seek new avenues of agreement. Our new Disarmament Program thus includes the following proposals: first, signing the test-ban treaty by all nations. This can be done now. Test ban negotiations need not and should not await general disarmament.<sup>1</sup>

Just three months later, Kennedy was negotiating with British Prime Minister Harold Macmillan to use Christmas Island for a new series of US nuclear tests.

In the early 1960s, renewed diplomatic tensions between the United States and Soviet Union meant the 1958 nuclear testing moratorium could not hold. In March 1961, Harold Macmillan had diverted from a Caribbean tour, flying from Trinidad to Key West in Florida to meet with John F. Kennedy. The two leaders debated strategic cooperation, including the possibility of joint action in the brewing political crisis in Laos—the precursor to the Vietnam War.<sup>2</sup>

Viewing Britain as a declining imperial power, the Kennedy administration saw the United States as the leader of the Western alliance and ‘the free world’—attitudes that sparked US interventions in the Congo (with the murder of independence leader Patrice Lumumba), the Bay of Pigs fiasco in Cuba and deployment of US Special Forces in Indochina.<sup>3</sup> Macmillan in turn hoped for an Anglo-American partnership, where Washington would recognise the United Kingdom’s role on the UN Security Council.

With France losing the Algerian War, it tried to improve its crumbling imperial power by commencing a nuclear testing program in its North African colony. The Gerboise Bleue test was held at Reggane in the Sahara

1 President John F. Kennedy: *Address before the General Assembly of the United Nations*, New York City, 25 September 1961.

2 Nick White: ‘Macmillan, Kennedy and the Key West meeting: Its significance for the Laotian Civil War and Anglo-American relations’, *Civil Wars*, Vol. 2 No. 2, 1999.

3 For critical discussion of JFK’s role in the Indochinese wars, see Noam Chomsky: *Rethinking Camelot—JFK, the Vietnam War and US political culture* (Verso, London, 1993).

desert on 13 February 1960.<sup>4</sup> Trying to maintain its status as the key European nuclear power, Macmillan hoped to encourage the United States to quickly negotiate a total ban on atmospheric testing, but believed that US nuclear superiority over Russia would best be maintained by another round of US nuclear weapons tests before any ban.<sup>5</sup>

In the folly that would lead to the Cuban Missile Crisis in 1962—10 days that almost destroyed the planet—the Kennedy administration had encouraged nuclear scientists and strategists to ‘think the unthinkable’ and develop policies to fight and win a nuclear war.<sup>6</sup> Despite his disarmament rhetoric, Kennedy had won the presidency with talk of a fictitious missile gap with the Soviet Union, and the new administration sought to bolster its nuclear forces.

For this reason, the United States offered the United Kingdom use of the Nevada test site for further British nuclear experimentation, but sought something in return. In December 1961, the two Western leaders held a meeting in Bermuda, this time to discuss the use of Britain’s Christmas Island facilities for US nuclear testing. At the Bermuda conference, the architect of Britain’s hydrogen bomb Sir William Penney chipped in to the discussion with musings on how many nuclear weapons it would take to destroy a country:

If you’re talking about Australia, it would take twelve. If you’re talking about Britain, it would take five or six, but to be on the safe side, let’s say seven or eight and I’ll have another gin and tonic, if you would be so kind.<sup>7</sup>

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4 For a comprehensive overview of French nuclear testing, see Bruno Barrillot: *Les essais nucléaires français 1960–1996* (CDRPC, Lyon, 1996) and *L’héritage de la bombe: Polynésie–Sahara 1960–2002* (CDRPC, Lyon, 2002).

5 Nigel Ashton: *Kennedy, Macmillan and the Cold War: The irony of interdependence* (Palgrave Macmillan, London, 2002), p. 154.

6 Kennedy-era strategic analyst Herman Kahn became notorious for his book *Thinking about the unthinkable* (Horizon Press, 1962), which promoted fantasies about the survivability of nuclear warfare. In earlier work at RAND Corporation, Kahn had critiqued the notion of Mutually Assured Destruction (MAD) and advocated first strike attacks to decapitate the Soviet leadership. See Herman Kahn: *The Nature and Feasibility of War and Deterrence* (RAND Corporation, Santa Monica, 1960). Combined with traits from Nazi rocket scientist Werner Von Braun and ‘father of the hydrogen bomb’ Edward Teller, Kahn’s personality was used as a model for Doctor Strangelove, the scientist at the heart of Stanley Kubrick’s astounding satire of the nuclear era.

7 Arthur M. Schlesinger Jr: *A Thousand Days: John F. Kennedy in the White House* (Houghton-Mifflin, Boston, 2002 reprint), p. 491.

After the completion of the 1957–58 Grapple atmospheric tests, most British troops were redeployed back to England—but some British and Fijian military forces were maintained on the island. As leaders debated the test moratorium, the airstrip and infrastructure on Christmas Island were maintained, under a joint arrangement between London and Washington.

Despite a long personal letter to Kennedy and similar missives to the Russian leader Nikita Khrushchev in early 1962, Macmillan could not revive the stalled talks for a Partial Test Ban Treaty in Geneva. He then acceded to proposals from the US military for the United States to conduct the further series of nuclear tests at Christmas Island and Johnston Atoll, codenamed Operation Dominic.

On 8 February, Macmillan announced that ‘the facilities at Christmas Island’ would be made available to the United States:

It is the joint view of the US and UK governments that the existing state of nuclear development would justify the West in making such further series of nuclear tests as may be necessary for purely military reasons.<sup>8</sup>

The agreement between the UK and US governments allowed the US military to carry out nuclear weapons testing no more than 25 miles and no less than 5 miles from Christmas Island.<sup>9</sup> Britain traded the use of facilities at the Christmas Island base in return for access to the US testing ground in the Nevada desert in order to test British nuclear weapons underground. The UK also negotiated access to data from the Dominic test series.

Under a program known as Operation Brigadoon, the British Government also agreed to provide 300 personnel to support the US operation on Christmas Island, including British army troops and Royal Air Force (RAF) aircrew.<sup>10</sup>

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8 Quoted in Adam Roberts: *Nuclear Testing and the Arms Race* (Peace News, Oxford, March 1962), p. 4.

9 ‘Nuclear Test Veterans’, Mr Llew Smith MP, UK House of Commons, Hansard official report, 4 February 1998, col. 1006.

10 ‘Atomic tests on Christmas Island: Brigadoon 1961–1962’, DEF 37/15/6 Part A, UK National Archives, Dominion Office file DO 164/20. See also UK National Archives, Ministry of Defence Registered Files (General Series) prior to 1964: files DEFE 7/2364–2370.

The first phase of the US program (Operation Dominic I) was conducted in a rush. Between 25 April to 11 July, 24 atmospheric nuclear tests were conducted at Christmas Island, with weapons dropped from US aircraft. The tests ranged in yield from the appropriately named ‘Petit’ at 2.2 kilotons to the massive ‘Pamlico’ at 3.8 megatons.<sup>11</sup>

During Operation Dominic, the US Navy also tested submarine-launched missiles armed with nuclear warheads in the ocean east of Christmas Island as well as off the West Coast USA.

On 4 May 1958 under Operation Frigate Bird—the symbol of Christmas Island—the ballistic missile submarine USS *Ethan Allen* (SSBN 608) launched a Polaris missile towards Christmas Island from 806 kilometres east of the island: ‘The warhead exploded as planned 500 miles short of the island but within the Christmas Island danger zone.’<sup>12</sup>

The successful test provided significant proof of the capacity for a missile-launched airburst, and opened the way for Britain to purchase Polaris missiles from the United States.<sup>13</sup> A week later, in Operation Swordfish, the submarine fired a rocket-launched antisubmarine ASROC nuclear depth charge.

In October, five more airdrops were detonated in the vicinity of Johnston Island, a US possession located between the Marshall Islands and Hawai‘i. Johnston (known to the indigenous Kanaka Maoli people as Kalama) was claimed for the Kingdom of Hawai‘i in July 1858, with the support of King Kamehameha. With the US takeover of Hawai‘i in 1898, Johnston effectively became a US possession, even though the Territory of Hawai‘i continued to claim jurisdiction over both Kalama Island and neighbouring Sand Island well into the 20th century.

Johnston Atoll had first been used for two US nuclear tests during Operation Hardtack in 1958. This testing program involved nuclear tests on Bikini and Enewetak atolls in the Marshall Islands, but from 22 April

11 Full details of all 24 tests are available in ‘Operation Dominic I’, US Defense Threat Reduction Agency (USDTRA) Fact Sheet, May 2015. ‘Petit’ means ‘small’ in French.

12 Barton C. Hacker: *Elements of Controversy* (University of California Press, Berkeley, 1994), p. 216.

13 Under the December 1962 Nassau Agreement, the United Kingdom purchased US Polaris A-3 ballistic missiles for its four Resolution-class submarines, which served as Britain’s nuclear strike force between 1968 and 1996. Today, the Royal Navy (RN) relies on US Trident missiles aboard its ballistic missile submarines.

to 19 August 1958, administration of Johnston Atoll was assigned to the Commander of Joint Task Force 7 for the duration of the test series. Two rocket launches from Johnston codenamed Teak (31 July) and Orange (11 August) both involved 3.8-megaton explosions from nuclear warheads on rockets launched from Johnston Atoll. After the tests were completed, the island reverted back to the command of the US Air Force.

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During the later Dominic series in 1962, there were five successful attempts to loft rockets into the atmosphere from Johnston Island to create high-altitude air bursts: Starfish Prime (8 July), Checkmate (19 October), Bluegill Triple Prime (25 October), Kingfish (1 November) and Tighrope (3 November).

These rocket-launched tests, collectively designated Operation Fishbowl, were designed to study the effects of nuclear detonations as defensive weapons against incoming ballistic missiles. The 1.4-megaton high-level explosion from Starfish Prime lit the sky from Australia to Hawai'i, causing an enormous electromagnetic pulse that put out streetlights in Honolulu, 1,300 kilometres away. The blast pumped radiation into the Van Allen belts, capable of destroying or seriously degrading the orbit of seven satellites.

But not all tests were achieved without error. These operations were preceded by a number of aborted nuclear missile launches from Johnston, including three that caused plutonium contamination on the island that still lingers today.

The first failed test 'Bluegill' on 2 June 1962 was aborted when radar lost track of the Thor missile carrying the nuclear warhead. Range safety officers ordered the missile and warhead to be destroyed.

The next 'Starfish' test on 19 June led to massive contamination of Johnston Atoll. The launch of a Thor missile carrying a nuclear warhead was aborted a minute into its flight, and a self-destruct order blew the missile apart at about 30,000 feet. Large pieces of radioactive debris (including pieces of the booster rocket, engine, re-entry vehicle and missile parts) fell back to the island.

In 2000, the impact of this test was assessed by the US Defense Threat Reduction Agency (USDTRA), which conducted the *Johnston Atoll Radiological Survey* (JARS):

More debris landed in the surrounding waters and on adjacent Sand Island, where residual plutonium from the test device was found. A large collection of alpha contaminated scrap was isolated during the initial clean-up ... It is likely that some portion of the plutonium was pulverised and consequently dispersed in the winds occurring between the destruct altitude and the ground and thus did not contribute to contamination at JA. It is however also likely that residual plutonium, in addition to that recovered from Sand Island, fell into the waters of JA.<sup>14</sup>

The test codenamed Bluegill Prime in July caused the most serious contamination. After a malfunction on the launch pad, officials destroyed the rocket by remote control after ignition but before the rocket had lifted off. The explosion of the Thor missile scattered debris in all directions:

Plutonium material, mixed with the flaming fuel, drained into trench cables and was carried away in the smoke from several fires. This resulted in a deposition of alpha contamination on the launch pad complex that represented a major contamination problem. Contaminated debris was scattered throughout the wire-enclosed pad area and neighbouring areas. Metal revetment buildings were highly contaminated with alpha activity.

Burning fuel flowing through cable trenches caused contamination on the interior of the revetments and all equipment contained therein. Fuel, which spilled and flowed over the compacted coral surrounding the launch mount and revetments, resulted in highly contaminated areas. Prevailing winds at the time of the destruction caused general contamination of all areas downwind of the launch mount.<sup>15</sup>

In an effort to continue with the testing program, US troops were sent in to do a rapid clean-up. The troops scrubbed down the revetments and launch pad, carted away debris and removed the top layer of coral around the contaminated launch pad. The plutonium-contaminated rubbish was dumped in the lagoon, polluting the surrounding marine environment. The JARS study politely notes:

14 USDTRA: *Johnston Atoll Radiological Survey* (JARS), 6 January 2000, pp. 1–18.

15 *Ibid.*, pp. 1-119–1-121.

Sea-disposal of radioactive waste for control of the radiological hazard was then considered expedient and proper ... there was no effort made to analyse the magnitude and extent of the radiological hazard resulting from the destruction of a nuclear device on a launch complex.<sup>16</sup>

At the time of the Bluegill Prime disaster, the top-fill around the launch pad was scraped by a bulldozer and grader. It was then dumped into the lagoon to make a ramp, so the rest of the debris could be loaded onto landing craft to be dumped out into the ocean. An estimated 10 per cent of the plutonium from the test device was in the fill used to make the ramp. Then the ramp was covered during later dredging to extend the island (the lagoon was dredged in 1963–64 and used to expand Johnston Island from 220 acres to 625 acres).

The JARS study notes that:

Much of these [contaminated] sediments may have been incorporated back into the islands in the 1964 dredging and filling work, and thus much of the plutonium contamination from Bluegill Prime may have been redeposited on the island. Any contamination not redeposited on the island through dredge and fill still contaminates the lagoon.<sup>17</sup>

The major Bluegill Prime disaster seriously affected the health of US Naval Air Force personnel who were present at Johnston Island. Crewmember Michael Thomas notes that the flight crew and ground support staff were trapped on the island following the destruction of the nuclear warhead.<sup>18</sup> In later years, the Squadron members of 'VP-6' present during that episode suffered an 85 per cent casualty rate of illness and cancers: non-Hodgkin's lymphoma was the biggest killer followed by thyroid cancer, throat cancer, oesophageal cancer, kidney cancer, multiple myeloma, and various skin cancers. Nearly 30 per cent of the crew experienced reproductive problems, with their wives suffering stillbirth and deformities in babies.<sup>19</sup>

On 15 October the same year, another test misfired. In the Bluegill Double Prime test, the rocket was destroyed at a height of 109,000 feet after it malfunctioned 90 seconds into the flight. US Defence Department officials confirm that when the rocket was destroyed, it contributed to the radioactive pollution on the island.

16 Ibid., p. 1-121.

17 Ibid., pp. 1-122–1-123.

18 Letter to the author from Michael Thomas, 28 November 2000. Thomas served at Johnston Atoll in 1962 as a member of US Naval Air Force, Navy Patrol Squadron Six, Flight Crew One.

19 Ibid.

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With the completion of Operation Dominic at Christmas Island and two series of atmospheric and underground tests at the Nevada test site (Operation Storax and Operation Dominic II), the United States revived negotiations with the Soviet Union for a test ban treaty. On 5 August 1963, the United States, United Kingdom and Soviet Union signed the *Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Underwater*—with underground testing still permitted, the agreement became known as the Partial Test Ban Treaty.

As with all Pacific nuclear test sites, the end of nuclear testing has not ended the nuclear hazard for the peoples of the Pacific. From 1963 to 1970, Johnston Atoll was maintained as a testing site in a state of ‘readiness to test’, in case the US President decided to breach the Partial Test Ban Treaty.

More than 550 drums of contaminated material were dumped in the ocean off Johnston in 1964–65. Since then, US defence authorities have surveyed the island in a series of studies, and collected 45,000 tonnes of soil contaminated with radioactive isotopes. Plutonium pollution was heaviest near the old rocket launching site, in the lagoon offshore the launch pad and near Sand Island. The contaminated soil was dug up and collected on the north of the island, in a fenced area covering 24 acres.

In the aftermath of the Partial Test Ban Treaty, Christmas Island lost its value for the US and British military. Plans for a permanent US satellite tracking base on the island failed to materialise and, in September 1963, the last US forces left the island. British forces did an initial clean-up, dumped unwanted material into the ocean and packed their bags. Tons of rusting vehicles, batteries, drums of unused asphalt and other toxic wastes were simply abandoned on the island.

On 29 June 1964, the Royal Navy (RN) lowered its flag at the HMS *Resolution* base at Port London. Britain’s military presence on Christmas Island was ended.

Johnston was used by the US military until 2000 and the island was expanded many times in size through dredging and reconstruction. Beyond the 1962 nuclear tests, Johnston Atoll was used to store chemical weapons from Okinawa after 1970 and drums of Agent Orange defoliant from the Vietnam War in 1972. Throughout the 1990s, the island was

also the site for the Johnston Atoll Chemical Agents Disposal System, an incineration plant for chemical weapons removed from Okinawa and Germany following the end of the Cold War.<sup>20</sup>

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As the British Gilbert and Ellice Islands Colony (GEIC) moved towards independence in 1978–79, researchers around the Pacific were concerned that an independent Kiribati would inherit environmental problems from the UK and US nuclear testing programs.

An unpublished research study from the University of South Pacific in 1978 found that ‘there appears to be cause for concern about risk and radiological hazard on Christmas Island’.<sup>21</sup> Fifteen years later, the South Pacific Regional Environment Program (SPREP) called for further studies on possible radiological hazards on Kiritimati:

i-Kiribati continue to work farm, fish and reside there, despite the fact that any ill effects of their stay on Kiritimati will probably not show up for years or generations. It is thus seen as critical to have Kiritimati Island reassessed for radioactive contamination in light of the increasing evidence based on the cancer levels in the Marshall Islands.<sup>22</sup>

Funded by a £9.1-million contract from the UK Ministry of Defence (MoD), a team from Safety and Ecology Corporation Ltd (SEC) was deployed in 2005 for a clean-up operation on Christmas Island.<sup>23</sup> SEC sought to remove more than 23,000 cubic metres of military material, but this focused on rusting equipment, oil drums, waste asphalt, asbestos and toxic chemicals left behind four decades earlier. Toxic or otherwise hazardous waste, including radioactive material, was transported back to the United Kingdom for disposal.<sup>24</sup>

20 Nic Maclellan: ‘Radiation on Johnston Atoll—cleaning up the Cold War’, *Pacific News Bulletin*, August 2000.

21 D. Medford: *Illustrative calculations on the radiological surveillance of Christmas Island*. Centre for Applied Studies in Development (University of the South Pacific, Suva, 1978), p. 5.

22 Randy Thaman and Ueantabo Neemia-Mackenzie: *Kiribati country report for United Nations Conference on Environment and Development (UNCED)*, South Pacific Regional Environment Program (SPREP), Apia, June 1992, p. 56.

23 Iain Laing: ‘Green team booked to clean up island’, *The Journal*, 22 March 2005.

24 ‘Christmas Island: Radioactive Waste’, Under-Secretary of State for Defence Andrew Robathan, UK House of Commons, Hansard Written Answers for 17 February 2011.

The operation involved extensive negotiation with local communities, given some equipment had been repurposed for housing and pig pens.<sup>25</sup> Despite this attempted clean-up, comprehensive surveys of possible radiological contamination on the south-east corner of the island were not conducted.

A decade later, speaking at a ceremony at the UN headquarters in New York to mark the 2015 International Day against Nuclear Tests, Kiribati ambassador to the United Nations Makurita Baaro said:

In Kiribati, when the tests ended, much of the equipment used for the testing were dumped in the ocean or just left behind. In seeking to have a study done on assessing the safety of Kiritimati from radiation, an offer was quickly made for a clean-up of the island, more than 30 years after the tests, by one of the testing countries. Kiritimati was deemed clean. The question is: is it really clean?

With this history in mind, our region collectively has been most vocal about nuclear issues. In fact, the very establishment of the Pacific Islands Forum, the annual gathering of our Pacific leaders, emanated from the frustration of not being able to discuss nuclear issues, deemed political by the metropolitan powers who were members within the South Pacific Commission at that time and also the testers of the nuclear weapons.<sup>26</sup>

Operation Dominic highlighted the hypocrisy of Britain's refusal to acknowledge the health problems faced by military personnel after their service on Christmas Island during Operation Grapple. The United States would provide compensation to its troops from Operation Dominic for the same illnesses found amongst British veterans that would not be compensated by the UK Government.

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25 'From a mere clean-up contract to changing lives —engaging the local stakeholders during the remediation of Christmas Island, Pacific Ocean' presentation by Dr J.P. Steadman, Safety and Ecology Corporation Ltd, to WM 2006 conference, 26 February–2 March 2006, Tucson Arizona. The WM Waste Management Symposia are annual conferences 'for discussing and seeking safe, environmentally responsible, technically sound and cost effective solutions to the management and disposition of radioactive wastes and the decommissioning of nuclear facilities to enhance the transparency and credibility of the global radioactive waste industry'. *WM Symposia*: [www.wmsym.org/aboutwms](http://www.wmsym.org/aboutwms).

26 Speech by Ambassador Makurita Baaro, Informal Meeting of the United Nations General Assembly to mark the 2015 Observance of the International Day against Nuclear Tests, UN Headquarters New York, 10 September 2015.

The issue is best shown by the case of Roy Prescott, one of the Royal Engineers on Christmas Island. As part of Operation Brigadoon, Prescott was seconded to the US Government to support the 1962 Dominic testing program. Decades later, Prescott was diagnosed with lung cancer. In July 2006, he was granted US\$75,000 compensation from the US Government, under the US Radiation Exposure Compensation Act.<sup>27</sup> However, earlier that very year, the UK MoD had refused compensation, arguing that there was no proof his cancer was caused by exposure to ionising radiation.

Just weeks before he died, Prescott spoke out from his sickbed, calling on Prime Minister Tony Blair to change British policy and shift the burden of proof required to access pensions and compensation:

I am a casualty of the Cold War and whilst I am pleased that I am receiving compensation and recognition from the US government, it really galls me lying here—a critically ill man—that the British Government continues to fail in its duty of care towards me and thousands of other nuclear test veterans by denying that we were exposed to radiation during service.

In light of the overwhelming evidence and research in the US which has led to this compensation payment, I call on the Prime Minister to admit that mistakes have been made, to apologise for the pain and suffering inflicted on the nuclear test veterans and their families, and to order a full public inquiry into the whole nuclear test veteran issue.

I would like to see the automatic award of War Pensions to any nuclear test veteran suffering from one of the 19 recognised diseases under the *US Radiation Exposure Compensation Act*.<sup>28</sup>

In 2010, the widow of pilot Derek Spackman became the second family member to receive US\$75,000 compensation from the US Government, having been twice refused a war pension by the United Kingdom. Spackman was one of the 15 aircrew of Canberra bombers who participated in the 1954 Aconite program, collecting samples of radioactivity after US nuclear tests in the Marshall Islands. For this hazardous duty, Spackman was

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27 The US legislation works on a presumptive list that recognises lung cancer as one of many diseases that can be caused by radiation released in the tests.

28 Rob Evans: 'US compensation for British nuclear test veteran', *The Guardian*, 26 July 2006; 'Nuclear test veteran gets U.S. payout', *Daily Mail*, 25 July 2006.

awarded a Queen's Commendation for Distinguished Service in 1957. He was diagnosed with aggressive cancer of the pharynx in 2000 and, despite treatment, died five months later.<sup>29</sup>

For the survivors of US and British nuclear testing in the Pacific, the debate over the economic, social and environmental impact has not ended. From medical research to court battles, from NGO activity to parliamentary debates, the story of Christmas Island continues into the 21st century.

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<sup>29</sup> Rob Evans: 'Widow of British nuclear test veteran awarded \$75,000 by US', *Observer*, 21 October 2010.

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