

Nuclear testing in australia and the pacific

[War](#), [Cold War](#)



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Introduction 150 words (do last)

H istory of Nuclear

Weapons Nuclear energy is produced from the splitting of the nucleus of an atom. Physicists throughout history have been aware of the power that can be found in the atom and many tests were conducted and theors put to practice. Initially fuelled by scientific curiosity, over time, the curiosity changed to the desire to unleash the atomic energy (DeGroot, 2004). In 1919, Physicist Ernest Rutherford, discovered how to 'split the atom' as it was termed (not technically correct, as the atom does not actually split) and the basis for the atomic bomb began. In the 1930's, during the eve of World War II, the potential to kill with great efficiency became the common objective both for the military and politicians alike. Through this shared goal, government funding became readily available for many laboratories around the world (ref). It is estimated that the United States Government alone spent two billion dollars during a six year period on the 'Manhattan Project'. The Manhattan Project was also supported by Britain and Canada for the sole purpose of making the atomic bomb a viable weapon for the American military. This intention of developing a nuclear weapon came to completion on July 16th, 1945 when the first nuclear bomb was tested in New Mexico (ref). Many other countries shared the Americans vision for nuclear weapons

and began their own investigations into the most destructive and powerful weapon in human history. Britain, France and the Soviet Union joined the nuclear arms race with The Soviet Union being the only country to test within its homeland. The United States undertook further testing of their nuclear weapons in New Mexico, The Marshall Islands and also Nevada. Britain had two testing sites within the mainland of Australia and additional sites on the Islands of Monte Bello, Christmas and Malden. The French government chose the Sahara desert in Algeria and two locations within French Polynesia (Firth & Strokirch, 1997).

History of nuclear testing in Australia Mark Oliphant was an Adelaide born physicist who completed his doctorate in the UK under Sir Ernest Rutherford at Cambridge University. Later in his career, Oliphant became a member of the secret group code named ' The Maud Committee'. This was a department set up by the British Government in the mid 1940's to find ways to build the atomic bomb (ref). In August 1941, Oliphant arrived in the United States with other members of the Maud Committee in an endeavour to seek cooperation in nuclear research. This was met by a lack of interest from the Americans; however, Oliphant did pass on his findings to the Australian representative in Washington at the time, R. G. Casey. Oliphant's knowledge led Casey to realise the enormous destructive force that was apparent within his research of the atomic bomb. This information was later passed on to the Menzies Government where it gave a probable remedy to the countries perceived lack of defence. This was also seen as the reason behind passing a bill that immediately reserved all of Australia's Uranium resources (ref). Uranium was

the basis for the fission within nuclear devices so it was perceived that this regulation would become financially beneficial to the Australian Government. The Commonwealth government was in control of all Australian Uranium resources after the creation of the Atomic Energy Act of 1943 (Arnold & Smith, 2006). This potential financial decline of Australia was also seen in countries throughout Europe. Due to the economic hardship on Britain during World War II, the Maud Committee disbanded. However, on 19th August 1943, Oliphant and other Britain experts were invited to join on the Manhattan Project in return for handing over their nuclear research material (ref). A policy arose called the Quebec Agreement which also allowed Britain into joint exploitation and purchase of Uranium supplies with the United States. Arnold and Smith (2006) state that although Britain's contribution to the Manhattan Project was small; it was of great importance in key areas of research. On 1st April 1945, Oliphant left the Manhattan project and no longer wanted to be part of atomic energy research for the military. Broinowski (2003) suggests that Oliphant was filled with feelings of rage and guilt over the atomic bomb and refused an invitation to watch the nuclear tests at Bikini Atoll. In August 1946, the joint agreement on the Manhattan project was terminated when US congress passed the McMahon act. This prohibited the sharing of atomic information to Britain or any other foreign country. This withdrawal from America was of upmost political and strategic concern to Brittan as it was now clearly of great importance to build their own nuclear weapons (ref). Britain, at this point, was still tied to a certain provision within the Quebec Agreement that stated either country was forbidden in sharing information to a third party, even after the passing of

the McMahon act. However, Britain's commonwealth ties proved virtuous in this situation as Australia was seen as a member of the British Commonwealth and therefore made privy to information otherwise unauthorised (Arnold & Smith, 2006). In December, 1949, Robert Menzies became Prime minister of Australia after an election focusing on anti-communism beliefs. Menzies, and his liberal party, believed US perceptions of a conspiracy that Moscow communists were planning to use their nuclear arms. Broinowski (2003) believes that this was the basis for Menzies nuclear ambition which led to Britain detonating twelve nuclear weapons on Australian soil. Arnold and Smith (2006) state that the British had to look overseas for a test site as their own country did not provide them with the desired arid land or wide open spaces. In 1950, Britain first requested to share the test range in the Pacific of Eniwetok Atoll with the United States. However, this led to a refusal from America and a survey party was sent to the Monte Bello Islands in January 1951. Formal agreement for the tests was received from Canberra after another successful election of the Menzies Government in May 1951. This agreement was made even after the British warned Menzies that some of the islands would be contaminated for about three years and uninhabitable. Today, parts of these islands are still highly contaminated and visits are limited to only one hour (DeGroot, 2004). Before testing began, British ministers had made one last approach to the American Government and were granted shared use of the Nevada test site. Britain considered the political advantage in operating their own test site and refused the Nevada test site in hope of becoming independent of the United States. Britain also wished to explore the effects of atomic bombs in

underwater tests in simulation for their own ports or attacks on the Thames (ref). This could be seen as Environmental factors being part of the reasoning behind choosing this specific test site On October 3rd 1951, an atomic bomb was detonated aboard the HMS Plym on Monte Bello Islands. A further two tests were executed on this site up until 1957. For further tests, the British needed land sites and two were chosen at Emu Field and Maralinga. Emu Field, in South Australia, was used for two nuclear tests named Totem 1 and Totem 2 on October the 15th and the 27th, 1953. This site was chosen due to its inhabited land of an approximate 100 mile radius, as well as its predictable meteorological conditions and low rainfall. Despite this initial survey of predictable weather conditions, the first detonation caused a radioactive cloud to travel north east across the country. This was an unexpected scenario and caused many compensation claims in the years preceding the testing event (ref). Although an airport was constructed at this test site, it was still seen to be too remote and a further search was conducted which led to the discovery of the Maralinga site (ref). Maralinga is an arid expanse in the centre west of South Australia and was used as a test site for seven weapons between September 1956 and October 1957 (Broinowski, 2003). Although this area was seen as uninhabited, The Tjuntjuntjara people, who lived around the border between South Australia and Western Australia, claimed the tests poisoned large areas of the landscape and its people. Tribal elders have claimed illness and death of their people due to irradiation and are also unable to return to their contaminated homelands after being removed by the government (DeGroot, 2004). There was also an occasion where radioactive strontium and iodine

blanketed high population centres including Adelaide. Furthermore, a clean-up of the area after its closure in 1967, named 'Operation Brumby', proved to be un-successful. Up to 20 kilograms of plutonium still remain lying in shallow pits and a further 2.2 kilograms of fragments can be found dispersed across the site (Broinowski, 2003).

History of nuclear testing in Pacific Islands After successful testing of a nuclear device in New Mexico and the atomic bombing of Hiroshima and Nagasaki in 1945, The United States began further testing of nuclear weapons in the Pacific. The United States of America were believed to have chosen the Marshall Islands as their nuclear test site due to its low population and minimal political backlash (Firth & Strokirch, 1997). The Marshall Islands were a part of the German protectorate from 1886 until the Japanese invasion during World War I. Under this Japanese mandate, The Islands were used as a military base for the Japanese army during the Pacific War. In 1944, American forces fought Japan for control of the Islands and became the occupying power. The United States became the administrators for the Trust Territory of the Pacific Islands which incorporated The Marshall Islands (DeGroot, 2004). In 1979, after negotiations with the United States, The Marshall Islands established their own government based on the constitution of Britain and America. Although the Republic of Marshall Islands was formed, it still, however, remains financially dependent on America through compensation claims and the three thousand Americans still living in the region (Firth & Strokirch, 1997). Atmospheric tests of atomic bombs were conducted by the Americans on Marshall Islands between the years of 1946 and 1958. This was further

compounded when a final series of tests were completed in the Pacific on Christmas Island and on Johnston Atoll in 1962 (DeGroot, 2004). In 1953, The United States President, Harry Truman, agreed to detonate their first thermonuclear device with an explosive force equal to that of 500 Hiroshima bombs. Hiroshima was a 12.5 kiloton bomb that detonated in the air above the city and caused widespread destruction and death to around 80,000 civilians (Divine, 1978). The device used in Marshall Islands was affectionately named 'MIKE' by the Americans and completely destroyed an island within Eniwetok Atoll and left behind a hole in the reef measuring around one kilometre wide. The evidence of this devastation can still be seen today; however, it only took President Truman a seven minute meeting to decide the fate of this island (Firth & Stokirch, 1997). Repeated large scale testing was conducted on these islands by the United States until 1962. This has resulted in enduring radiological contamination of all the test islands and Bikini Atoll remains un-inhabitable still to this day (Howard, 1986). The United States and British government were also joined by the French government who began nuclear testing in various sites of the Pacific in 1966. Regnault (2003) believes that the Pacific test sites were chosen by the French Government after political and technical problems were faced from their initial test site in the Sahara. In addition to this, Regnault (2003) states that between 1958 and 1963 there was a removal of leaders in New Caledonia and French Polynesia by the French Government. It could be seen that having these islands under French Sovereignty provided a good basis for performing nuclear tests among these islands with little political concern. This basis was seen to be a success with the French Government conducting

over 200 nuclear tests in the Pacific between the periods of 1966 to 1996. It should also be noted that these tests were conducted after the ' Limited Test Ban Treaty' was internationally implemented and the French had refused to sign (DeGroot, 2004). These tests were conducted on Mururoa and Fangataufa atolls where Natives among these Islands report widespread sickness and tainted water and fish. Despite these claims the French Government have refused an independent test of the area and also claim that the water and fish are safe to consume (DeGroot, 2004). Paragraph 4 significant similarities and differences between test sites When comparing the test sites within the Pacific and Australia many similarities can be seen. Firstly, the testing areas in Australia were chosen by the British due to its uninhabited islands and the vast empty regions of bush and desert. These sites enabled Britain to test the theory of shallow underwater explosions aswell as the implications of land and air explosions in the desert. These similarities can be seen in the choice of the site in the pacific by the Americans. Having already been provided with land test sites within Nevada, The Marshall islands provided them with the environmental factors needed for underwater explosions and the effects of radiation on military vessels. In addition to this, France was comparable with the choice of the Pacific region after completing land atomic tests in Algeria within the Sahara desert. Secondly, it can be seen that the sites chosen by the Governing powers was due to the political influence that was apparent on its proposed country. The United States had gained control of The Marshall Islands after defeating Japan in 1944. This governing authority provided the Americans with great influence over the Marshallese people which ultimately enabled them to

begin testing in the Islands. This assertion of power can also be seen with the French Government control over French Polynesia, and the British Government over Australia. However, Australia was the only country where the Government remained somewhat dependent and undisturbed by the authority in Britain. Australian officials were not replaced with British ones, however this was not the case with the French and Americans. It was not until 1979 that the Marshall Islands formed their own government and the French continued control over Polynesia after removal of its national leaders (Regnault, 2003). Finally, the most devastating similarity can be seen in the effects of nuclear testing on the environment and local people. Paragraph 5: were they environmental or political factors? Work out which and describe why. Paragraph 8: concl