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## *The leader*—Sir Winston Churchill



Sir Winston Churchill, Franklin Delano Roosevelt and Joseph Stalin at the February 1945 Yalta conference

Source: US National Archives.

Jock Colville was a worried man. As Principal Private Secretary to Sir Winston Churchill, he could see that the British Prime Minister was a sick man—and burdened by nuclear nightmares. The news that both the United States and the Soviet Union had developed a hydrogen bomb as well as atomic weapons weighed heavily on his boss.

Following the announcement from Moscow that the Soviet Union had tested a hydrogen bomb on 12 August 1953, Colville noted in his diary:

PM coming round towards resignation in October. Says he no longer has the zest for work and finds the world in an abominable state wherever he looks. Greatly depressed by thoughts on the hydrogen bomb.<sup>1</sup>

After serving as Prime Minister during the Second World War, Sir Winston Churchill had succeeded Clement Attlee for another term of office in October 1951. In his final political years, however, Churchill was ageing and in ill health after suffering a stroke in June 1953.

On 15 August, three days after the Soviet H-bomb test, Churchill told colleagues:

I was depressed, not only about myself, but about the terrible state of the world. That hydrogen bomb can destroy 2 million people. It is so awful that I have the feeling that it will not happen.<sup>2</sup>

These concerns about the hydrogen bomb were a significant change. As Britain's leader during the Second World War, Churchill had actively supported the US Manhattan project, which developed the first atomic weapon.<sup>3</sup> Following the August 1943 Quebec Agreement on wartime nuclear collaboration between Britain and the United States, British scientists played a key role in translating the theoretical physics of nuclear fission into a practical weapon, which first detonated at Alamogordo in the New Mexico desert in July 1945. Historian Elizabeth Tynan has argued that 'British physics initially powered the US Manhattan project'.<sup>4</sup>

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1 Sir John Colville: *The Fringes of Power: 10 Downing Street Diaries 1939–1955* (W.W. Norton & Co, London, 1985), p. 675.

2 Martin Gilbert: *Winston S. Churchill, Volume VIII: Never Despair 1945–65* (Heinemann, London, 1988), p. 875.

3 Graham Farmelo: *Churchill's Bomb—a hidden history of science, war and politics* (Faber and Faber, London, 2013).

4 Elisabeth Tynan: *Atomic thunder—the Maralinga story* (NewSouth Publishing, Sydney, 2016), p. 34.

The atom bomb was the horrific weapon deployed by the United States against Japan. US President Harry Truman ordered the atomic bombing of Hiroshima on 6 August 1945. Three days later, another US plane attacked the port city of Nagasaki (the fallback target after the primary target Kokura was obscured by smoke and cloud). No one truly knows how many people died, but estimates range from 90,000–146,000 people in Hiroshima and 39,000–80,000 in Nagasaki, in the initial attack and subsequent weeks. The second attack was directed as much at Moscow as Tokyo, following Stalin's declaration of war against Japan on 8 August.<sup>5</sup>

The two aircraft *Enola Gay* (which carried the atomic weapon 'Little Boy' towards Hiroshima) and *Bockscar* (which dropped 'Fat Man' on Nagasaki) both flew from Tinian Island in the Marianas Islands—highlighting the central role of Micronesia from the very start of the nuclear era.

In July 1945, a month before Japan's surrender, Britain went to national elections. With the population seeking an end to wartime austerity and changes to the political leadership that had dragged the country into disaster, Churchill lost the election to Labour leader Clement Attlee. Britain was facing revolt across the Empire, from India and Ceylon to Palestine and Malaya.

In opposition, however, Churchill was still celebrated as an international statesman. In March 1946, he visited Harry Truman in the US President's home state of Missouri. Welcomed to Westminster College in the small Missouri town of Fulton, Churchill gave a speech entitled 'The Sinews of Peace'.<sup>6</sup> Famous for popularising the term 'the iron curtain', the speech symbolised the end of the wartime partnership between the Western allies and the Soviet Union, which soon collapsed into inter-bloc rivalry.

Throughout this Cold War, nuclear strategy became a central feature of statecraft. Despite calls from many scientists and philosophers for atomic weapons to come under international control through the United Nations, Churchill argued at Fulton:

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5 For the debate over US motives, see Gar Alperovitz: *The Decision to Use the Atomic Bomb and the Architecture of an American Myth* (Vintage, 1996); Kai Bird and Martin J. Sherwin: 'The Myths of Hiroshima', *LA Times*, 5 August 2005.

6 The speech is published in Martin Gilbert: *Winston S. Churchill*, op. cit., p. 197.

It would nevertheless be wrong and imprudent to entrust the secret knowledge or experience of the atomic bomb, which the United States, Great Britain and Canada now share, to the world organisation while it is still in its infancy. It would be criminal madness to cast adrift in this still agitated and un-united world.<sup>7</sup>

To extend its nuclear monopoly, the United States began a series of atmospheric nuclear tests in 1946, codenamed Operation Crossroads, on Bikini Atoll in the Marshall Islands.<sup>8</sup> The tests were conducted a year before these Micronesian islands were designated as part of the Trust Territory of the Pacific Islands (TTPI)—the only strategic trusteeship created by the United Nations after the Second World War.<sup>9</sup>

In November 1946, the United States' Atomic Energy Act, also known as the McMahon Act, restricted the transfer of nuclear research and technology, even to allies like the United Kingdom.<sup>10</sup> In response, on 8 January 1947, a committee of five ministers led by Britain's postwar Labour Prime Minister Clement Attlee made the decision to commence a British nuclear weapons program.<sup>11</sup> The secretive decision-making process began a tradition of the UK nuclear establishment avoiding accountability—the government had spent nearly £100 million on the project before news of the decision was first announced to the British Parliament in May 1948.

While Attlee carefully weighed the political and moral impacts, some of his ministers were more gung-ho about an 'independent' British nuclear capacity. Fiercely anti-communist, Foreign Secretary Ernest Bevin told Cabinet colleagues:

7 Ibid., p. 199.

8 Jonathan Weisgall: *Operation Crossroads—the atomic tests at Bikini Atoll* (Naval Institute Press, Annapolis, 1994).

9 These Micronesian islands had been administered by Japan between the world wars, but became a strategic United Nations trusteeship administered by the US military in 1947, after the defeat of Japanese forces in 1944–45.

10 S.J. Ball: 'Military Nuclear Relations between the United States and Great Britain under the Terms of the McMahon Act, 1946–1958', *The Historical Journal*, Vol. 38, No. 2, 1995.

11 Lorna Arnold details the Labour Party's secretive decision-making in *A Very Special Relationship—British atomic weapons trials in Australia* (Her Majesty's Stationery Office, London, 1987), pp. 8–10. The 'Gen 163' committee included Prime Minister Attlee, Herbert Morrison, Foreign Secretary Ernest Bevin, Minister of Supply John Wilmot, Defence Minister A.V. Alexander and Lord Addison, Secretary of State for the Dominions.

We've got to have this thing over here whatever it costs and we're going to have a bloody Union Jack flying on top of it.<sup>12</sup>

While the roots of the British hydrogen bomb go back to the wartime Manhattan program, UK–US scientific collaboration was hampered by postwar spy scares and political clashes. The United States was seeking to remake international institutions, even as Britain counted the financial cost of the Second World War and the collapse of Empire. Over time, the US nuclear security state became more secretive. As they developed their own operations in the Pacific, British Colonial Office officials complained that the US military was restricting information such as the dates of proposed nuclear tests in the Marshall Islands:

It will be seen that in 1947, we were given information as to the dates and times of experiments and we handed this on to the High Commissioner [in the Gilbert and Ellice Islands Colony], but I fancy that since then, the US authorities become a great deal more 'cagey' about divulging information of this sort.<sup>13</sup>

The McMahon Act restrictions reinforced the British commitment to create an independent nuclear force. Britain was unable to use US nuclear testing facilities in the Nevada desert or the islands of the central Pacific, requiring other locations with vast space and limited population.

Western leaders were shocked when the Soviet Union announced its first nuclear test on 29 August 1949, in Operation *Pervaya molniya* (Fast lightning). This atomic test, at Semipalatinsk in Kazakhstan, was the first of 456 tests at the site. One witness noted:

The scene was striking: destruction all around, heavy dead silence, burnt soil, dead burnt birds. An eerie feeling.<sup>14</sup>

Cold War anxiety over Soviet nuclear capacity was amplified by the outbreak of fighting on the Korean peninsula in June 1950. Britain accelerated its nuclear program. On 16 September 1950, Prime Minister Attlee wrote to his Australian counterpart Robert Menzies, asking permission to hold atomic weapons tests in Australia:

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12 Sir Michael Perrin of the Ministry of Supply reported Bevin's statement in the BBC TV documentary *Britain's Nuclear Bomb: The inside story*, broadcast 3 May 2017.

13 File note in 'Hydrogen bomb experiments—west Pacific', Colonial Office, London. CO1036/236.

14 F.A. Kholin, cited in Togzhan Kassenova: 'Banning nuclear testing: Lessons from the Semipalatinsk nuclear testing site', *The Nonproliferation Review*, Vol. 23, No. 3–4, 2016, pp. 329–344.

I am telegraphing to you now to ask first whether the Australian government would be prepared in principle to agree that the first United Kingdom atomic weapon should be tested in Australian territory and secondly, if so, whether they would agree to our experts making a detailed reconnaissance of the Monte Bello Islands so that a firm decision can be taken on their suitability.<sup>15</sup>

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Even as Britain began preparing a series of tests of fission weapons in Australia, the US Government was moving to develop a larger thermonuclear or hydrogen bomb. Only a month after the first British atomic test at the Monte Bello Islands, the United States conducted its first test of a thermonuclear device, codenamed Mike, on 1 November 1952. As part of Operation Ivy, the Mike test on Enewetak Atoll was held just three days before the presidential election that saw former allied supreme commander Dwight D. Eisenhower replace Harry Truman as US President.

Well before the construction of sleek warheads, the Mike device was a clumsy beast, larger than a house, weighing 65 tonnes and requiring refrigeration to keep the hydrogen fuel liquid until detonation. Even so, the detonation vaporised the coral islet of Āllokļap (Elugelap) and left a crater 60 metres deep. At a yield of 10.4 megatons, the explosion created a mushroom cloud more than 100 kilometres wide. It was the first test of a full-scale thermonuclear device and irradiated several US military personnel.<sup>16</sup>

The Soviet Union in turn exploded its own thermonuclear device on the morning of 12 August 1953. The first Soviet hydrogen bomb was much smaller than the American device, but ‘the explosion made an awesome impression on all those who witnessed it. As one said, the effects of the first Russian atomic explosion had not inspired such flesh creeping terror’.<sup>17</sup>

15 Elizabeth Tynan: *Atomic thunder*, op. cit., p. 3.

16 Only 2,000 of approximately 14,000 participants in Operation Ivy were issued with radiation monitoring badges. Crew of a photographic plane caught in the fallout received up to 11.6 rem (116 mSv) of radiation, far above the 3.9 rem safety limit. The seven-man crew in an amphibious plane that flew to the rescue of a downed pilot received doses between 10 and 17.8 rem (100–178 mSv). In comparison, a standard chest x-ray delivers a radiation dose of about 0.02 rem (0.2 mSv). See ‘Operation Ivy’, Fact Sheet, US Defense Threat Reduction Agency (USDTRA), May 2015.

17 ‘The second Superbomb project—the Soviet Union’ in Lorna Arnold: *Britain and the H-bomb* (Palgrave Macmillan, Basingstoke, 2001), p. 28.

More than 2,250 people and 40,000 livestock were evacuated 120 kilometres from the Semipalatinsk test site (although the radioactive plume from the test carried over 400 kilometres). Forty people were deliberately left behind at the settlement of Karaul and later used by Soviet scientists as a cohort for medical studies on the effects of radiation.<sup>18</sup> These experiments were an eerie precursor to the Project 4.1 medical studies conducted on Marshall islanders by Brookhaven National Laboratories in the United States, discussed in Chapter 2.<sup>19</sup>

As with the first atomic test by the USSR, the first Soviet H-bomb gave impetus to the British nuclear weapons program. Meeting with US President Eisenhower in December 1953, Churchill expressed ‘concern at the cessation of full-scale cooperation between the United States and United Kingdom which had prevailed during the war’, and pled for the resumption of nuclear technology transfer that had been limited by the McMahon Act.<sup>20</sup>

Despite this purported ban on nuclear transfers, there was ongoing collaboration between British and US scientists. Physicist William Penney, who had worked with US counterparts during the war, continued to receive information on the latest American scientific and technical advances during the 1950s. Lord Cherwell, the Conservative politician who served as Churchill’s chief scientific adviser, wrote to the prime minister describing Penney as ‘our chief—indeed our only—real expert on the construction of the bomb and I do not know what we should do without him’.<sup>21</sup>

18 Togzhan Kassenova, op. cit., p. 331, drawing on research by Talgat Slyambekov: ‘Karaul’ in Kanat Kabdrakhmanov: *Odinchestvo—dom bez sten, dusha bez doma—Transtsedentalnoe kocheve, konets puti; 470 bomb v serdtse Kazakhstana* (470 Bombs in the Heart of Kazakhstan), (Kazakhstan, Almaty, 1994), p. 105. After the collapse of the USSR, Kazakh and Russian researchers began to study the effects of Soviet-era testing on local populations and military veterans and to compare the experience of US and Soviet testing. The author was invited to contribute to a 2002 collection contrasting the experience of Pacific islanders, Native Americans and Kazakh farmers—see Nic Maclellan: ‘Tikhookeanisky region v yaderny vek: istoriya, problemy, perspective’ (‘The nuclear age in the Pacific: history, problems, perspectives’), *Yaderny Kontrol*, Moscow, Vol. 8, No. 1, January–February 2002.

19 R.A. Conard, V.P. Bond, J.S. Robertson, E.A. Weden: *Operation Castle Project 4.1a, medical examination of Rongelap people six months after exposure to fallout* (Department of Energy, Washington, March 1954); Robert A. Conard et al.: *March 1957 medical survey of Rongelap and Utirik people three years after exposure to radioactive fallout* (Brookhaven National Laboratories, Upton New York, 1958).

20 Martin Gilbert: *Winston S. Churchill*, op. cit., p. 924.

21 Lorna Arnold: *Britain and the H-Bomb*, op. cit., p. 72. Arnold’s history provides a detailed study of Penney’s connections with the United States and crucial role in the development of the British bomb. Cherwell was the driving force behind the passage of the July 1954 United Kingdom Atomic Energy Act and sat on the board of the UK Atomic Energy Authority (UKAEA) until his death in 1957.

Penney would go on to serve as the chief scientific coordinator for the British atomic tests in Australia and hydrogen bomb tests in the central Pacific.

Even though the US Mike test was conducted in November 1952, the US Government only publicly announced that it had developed a hydrogen bomb in February 1954.<sup>22</sup> It then conducted the test of a second hydrogen bomb, codenamed Bravo, on 1 March 1954.

Little more than a month after Bravo, on 5 April, Churchill addressed a tumultuous UK House of Commons debate on disarmament.<sup>23</sup> The debate saw him rise to defend the development of the hydrogen bomb by Britain's key Western ally. To the dismay of his own supporters, Churchill fiercely attacked the Labour opposition. He rejected their calls for his government to pressure the United States to abandon its nuclear testing program. He also rejected calls to place nuclear weapons under international controls through the newly formed United Nations:

The government was not prepared to make any such representations to the United States government or to take any action which might impede American progress in building up their overwhelming strength in nuclear weapons, which provided the greatest possible deterrence against the outbreak of a third world war.<sup>24</sup>

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Just as the United States and Soviet Union had sought isolated locations for nuclear testing, the United Kingdom needed open space. The British atmospheric testing program in Australia was conducted with the agreement and support of Australian Prime Minister Robert Menzies, initially without Cabinet approval. Menzies, however, had added the requirement:

It will be conducted in conditions which will ensure that there will be no danger whatever from radioactivity to the health of the people or animals in the Commonwealth.<sup>25</sup>

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<sup>22</sup> Ibid., p. 952.

<sup>23</sup> Graham Farmelo: *Churchill's Bomb—a hidden history of science, war and politics* (Faber and Faber, London, 2013), p. 423.

<sup>24</sup> Lorna Arnold: *Britain and the H-Bomb*, op. cit., p. 963.

<sup>25</sup> Adrian Tame and Rob Robotham: *Maralinga: British A-bomb, Australian Legacy* (Fontana Collins, Melbourne, 1982), p. 66.

Menzies supported the free exchange of scientific and defence data between Australia, Britain and the United States. The prime minister was encouraged by his key collaborator, Minister for Supply Howard Beale. An enthusiastic supporter of the British atomic weapons program, Beale proclaimed:

England has the bomb and the knowhow; we have the open spaces, much technical skill and great willingness to help the Motherland. Between us, we shall build the defence of the free world, and make historic advances in harnessing the forces of nature.<sup>26</sup>

This book, which will focus on the development of thermonuclear weapons in the British Gilbert and Ellice Islands Colony (GEIC), can only sketch a brief outline of the British atomic weapons program in Australia. Many other authors have comprehensively detailed the Australian experience. For those interested in the technical process of developing Britain's atomic weapons, the UK and Australian governments have both published official histories of the testing program in Australia.<sup>27</sup> More recent studies have woven together official diplomatic history, the testimony of scientists, the memories of the military veterans who staffed the test sites and a more critical appraisal of the lingering effects on health and environment.<sup>28</sup>

Between October 1952 and October 1957, the British Government carried out 12 atomic tests at three sites in Australia. The tests involved thousands of British and Australian military personnel and also affected nearby Indigenous communities. In subsequent decades, both veterans and Indigenous people have campaigned for recognition and compensation for health effects, which they attribute to exposure to hazardous ionising radiation.

The first atomic test on 3 October 1952, codenamed Operation Hurricane, was held at the Monte Bello Islands, off the coast of Western Australia. This was followed by the two Totem atmospheric tests at Emu Field in October 1953.

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26 Quoted in Government of Australia: *The Report of the Royal Commission into British Nuclear Tests in Australia* (Australian Government Publishing Service, Canberra, 1985), para. 2.1.25, p. 15.

27 The British history is Lorna Arnold: *A Very Special Relationship—British Atomic Weapons Trials in Australia* (Her Majesty's Stationery Office, London, 1987). An Australian history of the tests was published by the Department of Resources and Energy: J.L. Symonds: *A History of British Atomic Tests in Australia* (Australian Government Publishing Service, Canberra, 1985).

28 Roger Cross: *Fallout—Hedley Marston and the British bomb tests in Australia* (Wakefield Press, 2001); Frank Walker: *Maralinga* (Hachette, Sydney, 2014); Elizabeth Tynan: *Atomic thunder*, op. cit.

British testing in Australia was then halted for two years, but resumed in May and June 1956 with Operation Mosaic in the Monte Bello Islands. In September and October that year, four atmospheric tests followed in the South Australian desert at Maralinga, with Operation Buffalo. After the first three Grapple tests on Malden Island in the central Pacific (May and June 1957), testing of atomic triggers continued in Australia in September and October 1957 under Operation Antler.

For 25 years, UK governments and scientists hid documents detailing the full damage that had been caused by the Maralinga tests. After campaigns by veterans groups, Indigenous communities and investigative journalists, the Hawke Labor Government called a Royal Commission into the British tests, headed by Justice James ‘Diamond Jim’ McClelland. In 1985, the Royal Commission released a scathing, two-volume report that criticised the British Government’s failure to adequately address issues of safety.<sup>29</sup>

Beyond the 12 atmospheric nuclear tests, the commission’s report highlighted the long-lasting damage caused by a series of over 600 minor trials, assessment tests and experimental programs. These trials near the Maralinga test site—codenamed Kittens, Tims, Rats and Vixen—involved the testing of bomb components and the burning of nuclear materials such as plutonium, uranium and beryllium. These experiments continued until 1963 and sent plumes of contaminated smoke across the desert, causing radioactive contamination that lasts to this day.

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Yami Lester was 10 years old when the Totem 1 test was conducted on 15 October 1953 near his home at Wallatina. The winds carried dust into his eyes and four years later he lost all sight:

It was in the morning, around seven. I was just playing with the other kids. That’s when the bomb went off. I remember the noise. It was a strange noise, not loud, not like anything I’d ever heard before. The earth shook at the same time; we could feel the whole place move. We didn’t see anything, though. Us kids had no idea what it was. I just kept playing.

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29 Government of Australia: *The Report of the Royal Commission into British Nuclear Tests in Australia*, op. cit. For the political context, see Robert Milliken: *No Conceivable Injury—the story of Britain and Australia’s atomic cover-up* (Penguin, Ringwood, 1986).

It wasn't long after that a black smoke came through. A strange black smoke, it was shiny and oily. A few hours later we all got crook, every one of us. We were all vomiting; we had diarrhoea, skin rashes and sore eyes. I had really sore eyes. They were so sore I couldn't open them for two or three weeks. Some of the older people, they died. They were too weak to survive all of the sickness. The closest clinic was 400 miles away.<sup>30</sup>



Yami Lester, Wallatinna Station, South Australia, 2006

Source: Jessie Boylan.

It took years—and the Royal Commission—before the Australian Government would begin to address the full impact of British nuclear testing on the Yankunytjatjara and Pitjantjatjara peoples, whose lands

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30 For the full history of the black mist and the impact on the community of Wallatinna, see Yami Lester: *Yami—the autobiography of Yami Lester* (IAD Press, Alice Springs, 1993).

in South Australia were taken for the Maralinga test site.<sup>31</sup> Little thought was given to the reality that the deserts and oceans of the southern hemisphere were not open, empty places, but home to Indigenous peoples.

Aboriginal communities in South Australia had first protested when the Woomera Rocket Area (WRA) was created to test British missiles after the Second World War. From 1947, public meetings, radio broadcasts and information leaflets were organised to campaign against the WRA by the newly formed Council for Aboriginal Rights, supported by groups as diverse as the Aboriginal Advancement League, Quakers, Communist Party of Australia, Women's Christian Temperance Union and Women's International League for Peace and Freedom.<sup>32</sup>

By the 1950s, authorities decided to use land within the WRA to test atomic weapons, after the success of the first test at the Monte Bello Islands. Even though everyone was supposed to be evacuated from the Emu Field and Maralinga zones during the 1950s tests, some Aboriginal people remained on their land within the testing range (a fact known to the Australian Government at the time, though covered up until the 1980s). The Anangu people near Maralinga suffered the disruption of their livelihoods and health. The official British historian of the Australian tests, in a rather dismissive manner, notes:

They had no rights and their interest in the land was not realised or respected, but this was and had been their general situation and was neither new nor particular to the weapons trials.<sup>33</sup>

During the tests, some Indigenous people were given one-way train tickets to far-off towns, while others were herded into a camp at Yalata, a church mission station 150 kilometres west of Ceduna. One Aboriginal elder recalled the time:

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31 For memories of the 1950s and the ongoing effects of nuclear testing on Indigenous women in South Australia, see Yalata and Oak Valley communities with Christobel Mattingley: *Maralinga—the Anangu story* (Allen and Unwin, 2009). For cultural responses to the tests, see Jan Dirk Mittman (ed.): *Black Mist, Black Country* (Burrinja, Upwey, 2016).

32 Bain Attwood: *Rights for Aborigines* (Allen and Unwin, 2003), pp. 149–150. See also Deborah Wilson: *Different white people—radical activism for Aboriginal rights 1946–72* (UWA Publishing, Perth, 2015), pp. 110–113; and Douglas Jordan: *Conflict in the Unions—the Communist Party of Australia, politics and the trade union movement, 1945–60* (Resistance Books, Sydney, 2013). The Communist Party perspective is shown in Alf Watt: *Rocket Range Threatens Australia* (Australian Communist Party South Australian State Committee, Adelaide, 1947).

33 Lorna Arnold: *A Very Special Relationship—British atomic weapons trials in Australia*, op. cit., p. 244.

Soldiers everywhere. Guns. We all cry, cry, crying. Men, women and children, all afraid.<sup>34</sup>

Sue Coleman-Haseldine is a Kokatha-Mula woman, born at the Koonibba mission near Maralinga:

I was about three when it happened. The old people used to talk about the Nullarbor dust storm, which really wasn't a dust storm at all. It must have been the fallout from Maralinga. We've had thyroid problems in the family, and it's not just us, it's the whole of the west coast of South Australia.

We've had quite a lot of problems like that, health-wise. When someone says somebody's just died, you ask what from and it's always cancer, cancer, cancer. But as we all know, nobody can prove that the radiation caused the cancer. People have put in for compensation, but because there's no proof that the illnesses stem from the explosions, there is none.<sup>35</sup>

Yvonne Edwards was just six years old when the Buffalo tests began at Maralinga in September 1956 on the land of the Anangu people. Years later, she remembered:

Grandfather and grandmother telling lots of stories. They had to live at Yalata. Their home was bombed. That was their home when the bomb went off. Really frightened. They thought it was *mamu tjuta*, evil spirits, coming. Everyone was frightened, thinking about people back in the bush. Didn't know what bomb was. Later told it was poison. Parents and grandparents really wanted to go home, used to talk all the time to get their land back.<sup>36</sup>

Aboriginal culture was—and still is—strong in the region. In the 1990s, Aboriginal women in South Australia formed the group *Kupa Piti Kungka Tjuta* and a campaign called *Irati Wanti* (The Poison—Leave It) to oppose further nuclear pollution of their country. Campaigning against government proposals to create a nuclear waste dump on their land, the elders recalled the nuclear tests of the 1950s and expressed their concern about the effects on future generations:

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34 The late Alice Cox, cited in 'Maralinga's afterlife', *The Age*, 11 May 2003.

35 Speech during the 'Black Mist, White Rain' speaking tour of Australia in April 2016, which united Aboriginal and Marshall Islands nuclear survivors.

36 Christobel Mattingley: *Maralinga's long shadow—Yvonne's story* (Allen and Unwin, Sydney, 2016), pp. 43–44.

All of us were living when the government used the country for the Bomb. Some were living at Twelve Mile, just out of Coober Pedy. The smoke was funny and everything looked hazy. Everybody got sick. Now, again they are coming along and telling us poor blackfellas: 'Oh, there's nothing that's going to happen, nothing is going to kill you.' ... And we're worrying for our kids. We've got a lot of kids growing up on the country and still coming more, grandchildren and great grandchildren.<sup>37</sup>

As we'll see in following chapters, the same intergenerational concerns are expressed by men and women in the Pacific islands, including those in the Marshall Islands who bore the brunt of US hydrogen bomb testing at Bikini and Enewetak atolls or the Fijian military personnel who served on Christmas Island during Operation Grapple.

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The Maralinga site was officially closed in 1967, following a brief clean-up operation codenamed Brumby. In the aftermath of the McClelland Royal Commission, the British Government funded a further effort in the late 1990s to remove contaminated soil. Alan Parkinson, a key scientist and the government's representative in the \$100 million operation, was later removed from his positions. Parkinson challenged bureaucratic suggestions that the clean-up operation had succeeded, whereas there is extensive contamination to this day. In his forthright account of the failed operation, Parkinson mourns the lingering legacy of plutonium scattered across the desert:

In less than two decades, British military aspirations turned over 100 km<sup>2</sup> of pristine Australian bush at Maralinga in South Australia into plutonium-contaminated scrub.<sup>38</sup>

The atomic tests in Australia were a crucial prequel to the development of the British hydrogen bomb, when the UK Government decided to follow the United States and the Soviet Union in the development of thermonuclear weapons. In the 1950s, Churchill's scientific adviser Lord

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37 From statement by the women of *Kupa Piti Kungka Tjuta* (author's files), opposing the establishment of a nuclear waste dump on their land that was used for the 1950s nuclear tests. Today, the battle continues—the state government of South Australia has again proposed the creation of an international nuclear waste dump on already contaminated land.

38 Alan Parkinson: *Maralinga—Australia's nuclear waste cover up* (ABC Books, Sydney, 2007), p. ix.

Cherwell had argued that the development of hydrogen as well as atomic weapons was central to maintaining Britain's status as an imperial power in the postwar era:

If we are unable to make the Bomb ourselves and have to rely entirely on the United States for this vital weapon, we shall sink to the rank of a second class nation, only permitted to supply auxiliary troops, like the native levies who were supplied small arms but not artillery.<sup>39</sup>

Churchill's fear of the destruction that a hydrogen bomb could wreak did not last. While contemplating the need for a disarmament summit between the United States, Soviet Union and United Kingdom—similar to the great wartime meetings at Potsdam and Yalta—Churchill recognised that Britain and its allies needed to maintain a monopoly of thermonuclear weapons:

I wanted America to have a showdown with the Soviet republic before the Russians had the Bomb.<sup>40</sup>

Less than a year before the prime minister left office for the final time, his Defence Policy Committee met on 16 June 1954. The meeting agreed to go ahead with the production of the British hydrogen bomb. This secret decision was not formally communicated to the next meeting of the full British Cabinet on 22 June. Despite this, Churchill privately wrote to US President Eisenhower calling for 'better sharing of information and also perhaps of resources in the thermonuclear sphere'.<sup>41</sup> He then briefed Eisenhower on the H-bomb decision at a meeting in Washington on 25 June and sought supplies of tritium from Canadian Prime Minister Louis St Laurent on 29 June.<sup>42</sup> On 7 July, Churchill argued:

We could not expect to maintain our influence as a world power unless we possessed the most up-to-date nuclear weapons ... and the thermonuclear bomb would be more economical than atomic bombing.<sup>43</sup>

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39 Margaret Gowing: *Independence and deterrence*, volume 1 (Macmillan, London, 1974), p. 407.

40 Jonathan Rosenberg: 'Before the bomb and after: Winston Churchill and the use of force', in John Lewis Gaddis (ed.): *Cold War statesman confront the bomb: nuclear diplomacy since 1945* (Oxford University Press, 1999), p. 186.

41 'Message from the Prime Minister', 21 June 1954, Eisenhower Presidential Library: [www.eisenhower.archives.gov/](http://www.eisenhower.archives.gov/).

42 The UK Cabinet was only told about the decision to proceed with the hydrogen bomb in February 1955. Martin Gilbert: *Winston Churchill*, op. cit., pp. 993, 1000, 1094. For Canada, see Lorna Arnold: *Britain and the H-Bomb*, op. cit., pp. 54–55.

43 Jonathan Rosenberg, op. cit., pp. 189–190.

The release of a Defence White Paper in February 1955 saw the public announcement of plans to develop the hydrogen bomb. Even after Churchill's resignation that April, scientific work continued on the weapons prototypes, dubbed 'Blue Danube' and 'Red Beard'. But Britain still needed an area with little population to test their thermonuclear weapons.

Was Australia a possibility? Churchill's successor as prime minister Sir Anthony Eden and Australian Prime Minister Robert Menzies signed a 10-year agreement on 7 March 1956, which approved atomic testing at Maralinga but specified that there would be no explosion of thermonuclear weapons on Australian soil. British scientist William Penney later said the three Antler tests at Maralinga were 'to confirm understanding of the triggering mechanism for high thermonuclear explosions conducted at Christmas Island'.<sup>44</sup>

The Australian Government's need to mollify public opinion over radioactive fallout was not helped when UK authorities announced the final round of tests at Maralinga would be codenamed Operation Volcano.<sup>45</sup> As noted by Elizabeth Tynan:

The horrified Australians rejected it outright. The name suggested violence and destruction. Antler was chosen after the Australians voiced their concerns.<sup>46</sup>

Given Penney's refusal to share key data with his Australian counterparts, even conservative government ministers were suspicious about British intentions:

As Operation Grapple was gearing up to test a British H-bomb in the Pacific, the Australian government wondered if the British planned to defy the terms of the Maralinga agreement and test a thermonuclear weapon. In some ways this seemed likely, as thermonuclear weapons were now the main game and Maralinga was the permanent British test site. The terms

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44 David Leigh and Paul Lashmar: 'Revealed at last: the deadly secrets of Britain's A-Bombs', *The Observer*, 24 March 1985, p. 7.

45 In December 1956, the secretary of the Atomic Weapons Trials Executive issued two memos, the first declaring that there would be a new code word for the 'atomic weapons trials to be carried out at Maralinga in 1957', followed by a second memorandum stating that the code word is 'VOLCANO!' Memos DB/134 and DB/134/01 from C.G. Gray, secretary, Atomic Weapons Trials Executive, 19 December 1956. CO1036/280.

46 For details of the contribution of Operation Antler to the H-bomb program, see Elizabeth Tynan: *Atomic thunder*, op. cit., pp. 110–111.

of the Maralinga agreement had not exactly proved an insurmountable obstacle to the British before. Consequently, approval was slower than usual in coming.<sup>47</sup>

The UK Government then searched the map for another location. The chair of the US Atomic Energy Commission (AEC), Lewis Strauss, informally suggested that the UK could use the US nuclear test site at Enewetak Atoll in the Marshall Islands, but this proposal was quickly overruled by other AEC commissioners.<sup>48</sup>

Before eyes turned to the British GEIC, Sir Anthony Eden made approaches to New Zealand seeking an alternative site. A month after assuming office as prime minister, Eden personally approached his New Zealand counterpart Sidney Holland, seeking use of New Zealand's uninhabited Kermadec Islands for the hydrogen bomb program:

I am sure that we can count on you for co-operation in a project that is so important to the Commonwealth and the defence of the free world.<sup>49</sup>

Worried that the project would be a 'political H-bomb' for the NZ Government, Holland delayed and later rejected the request to use the isolated South Pacific islands. Attention then turned to the NZ-administered northern Cook Islands and also the Line Islands, which had come under British administration in 1919.<sup>50</sup>

To mend Commonwealth relations after he had turned down the initial UK request, Holland agreed to send the New Zealand warship HMNZS *Lachlan* to investigate potential sites, under the guise of scientific research for the International Geophysical Year (IGY).<sup>51</sup> Royal Navy (RN) Commander John Paton and Royal Engineer Captain P.S. Wadsworth were quietly brought aboard the *Lachlan* to conduct the survey—

47 Ibid., p. 111.

48 'Proposal to permit UK to use Eniwetok' [sic], Letter from AEC Commissioner Thomas E. Murray to AEC Chairman Lewis Strauss, 8 March 1955. Marshall Islands Nuclear Documentation Database (MINDD).

49 Rebecca Priestley: *Mad on radium—New Zealand in the atomic age* (Auckland University Press, Auckland, 2013).

50 Following the First World War, the Western Pacific High Commission in Fiji had grouped the Line Islands with the British Gilbert and Ellice Islands Colony (GEIC) for administrative purposes—control over the Line Islands, including Christmas and Malden, was under dispute, however, with the United States still claiming sovereignty in the 1950s.

51 IGY, with activities scheduled between July 1957 and December 1958, was a collaborative international scientific project involving researchers and scientists from both East and West, symbolising a thaw in the Cold War tensions.

both went on to serve as members of the planning team for Operation Grapple.<sup>52</sup> In February and March 1956, Christmas Island and nearby Malden Island were surveyed and identified as potential test sites.

As detailed in later chapters, the New Zealand Government also agreed to Prime Minister Eden's request that two New Zealand frigates join the British naval flotilla off Christmas Island.<sup>53</sup> These vessels would be used as weather ships during the scheduled test series. Weather stations and radiation monitoring would be based on Penrhyn Atoll in the northern Cook Islands, an NZ dependency and one of the closest inhabited locations to the proposed test sites. The Royal New Zealand Air Force (RNZAF) would also provide support services for transport and radiation monitoring. An American offer of a US Air Force monitoring team to be based on Penrhyn was firmly rejected, with New Zealand fearful that this would endorse ongoing US claims of sovereignty over the island.

Despite the restrictions on testing hydrogen bombs on Australian soil, the Australian Government had done its part. The McClelland Royal Commission concluded that the testing of prototypes and atomic triggers in the deserts of Australia provided a crucial step in the development of the British hydrogen bomb:

Although thermonuclear weapons (H-bombs) were not exploded in Australia either at the Monte Bello Islands or at Maralinga, some of the tests carried out at these sites were associated with the developmental program for Britain's H-bomb program and trials at Christmas Island in the Pacific ... The British tests in Australia only included development tests up to the 'atomic detonator' stage and the test of a British H-bomb was undertaken at Christmas Island in the Pacific in 1957.<sup>54</sup>

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52 John Crawford: *The involvement of the Royal New Zealand Navy in the British nuclear testing programmes of 1957 and 1958*, research paper for New Zealand Defence Force Headquarters, Wellington, New Zealand, 1989 (declassified 1996), p. 6.

53 The British ambassador in Wellington Sir Geoffrey Scoones relayed the British Prime Minister's request for naval support to the NZ Minister of External Affairs, Mr T.L. MacDonald, in July 1956. *Ibid.*, pp. 7, 9.

54 Government of Australia: *The Report of the Royal Commission into British Nuclear Tests in Australia*, op. cit., volume 1, pp. 21–22.

Without irony, Menzies' Minister for External Affairs Sir Garfield Barwick would later proclaim the government's pride that Australia was one of the first nations in the world to sign and ratify the 1963 Partial Test Ban Treaty.<sup>55</sup>

Sir Winston Churchill too had done his part. The old Cold Warrior paved the way for his successors Sir Anthony Eden and Harold Macmillan to expand the hydrogen bomb program. Churchill publicly acknowledged this legacy just weeks before he retired. Standing before the House of Commons on 1 March 1955, Churchill outlined the contents of a new British Defence White Paper in a formal parliamentary statement. He publicly confirmed that the United Kingdom would follow in the footsteps of the two nuclear superpowers to develop a hydrogen bomb:

To make our contribution to the deterrent, we must ourselves possess the most up-to-date nuclear weapons, and the means of delivering them.<sup>56</sup>

The date of the UK parliamentary debate was auspicious. It was exactly one year after the United States had conducted its largest-ever nuclear test on Bikini Atoll in the Marshall Islands—codename Bravo.

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55 'Statement in the House of Representatives on the ratification by the Australian government of the Nuclear Test Ban Treaty, by the Minister for External Affairs Sir Garfield Barwick on 15 August 1963', in *Nuclear Testing*, Select Documents on International Affairs, No. 2 (Department of External Affairs, Canberra, 1963), p. 31.

56 Speech by Prime Minister Sir Winston Churchill, UK House of Commons, Hansard official report, 1 March 1955.

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