

## RETHINKING THE JOINT PROJECT: AUSTRALIA'S BID FOR NUCLEAR WEAPONS, 1945–1960

WAYNE REYNOLDS

*Newcastle University, Australia*

**ABSTRACT.** *This article concludes that Australia was determined to possess nuclear weapons from the end of the Second World War. The best prospects for this lay in working with Britain through the so-called 'joint project'. British defence planners knew that their small island would not survive a future atomic blitz and, therefore, needed 'active' deterrent weapons. The problem was that the US after 1946 moved to protect its atomic monopoly and denied Britain research, raw materials, and test facilities. Australia was, therefore, an invaluable partner in the British deterrent weapons programme, in all its aspects from research to testing, as long as the US refused co-operation. The quest for atomic weapons lies at the heart of many of Canberra's initiatives after 1945 – the decision to build an Australian National University; the construction of the vast Snowy Mountains scheme; and ultimately the decision to deploy Australian forces into South-East Asia in the mid-fifties. The height of Anglo-Australian co-operation coincided with the atomic tests after 1952, London's decision to help build atomic reactors in Australia, and the Suez crisis. Britain's acquisition of deterrent weapons in 1957, however, saw the end of imperial co-operation on atomic weapons and delivery systems.*

---

To date historians and one royal commission<sup>1</sup> have marginalized the Australian role in Britain's atomic weapons project. Australians have been seen as providing a 'suitable real estate' for atomic tests about which they knew little.<sup>2</sup> The preoccupation of many historians has been on the regional and conventional conflicts that marked the Cold War, with Australia sending scarce manpower into the jungles of Asia in line with the regional policies of 'great and powerful friends'.<sup>3</sup> The major assumption in imperial planning after the Second World War, however, was that atomic weapons would be used. For a small, white population living in a troubled area nuclear weapons provided the ideal deterrent.

After 1945 Australia fitted into British planning more effectively than had been the case in the age of seapower. Whatever the merits of the proposition

<sup>1</sup> In 1985 the McClelland royal commission into British nuclear tests in Australia concluded that Menzies virtually alone gave the go-ahead for the tests out of a 'great willingness to help the motherland'. *Report of the royal commission into British nuclear tests in Australia* (Canberra, 1985), p. 15.

<sup>2</sup> Lorna Arnold argues that Britain could join with Australia, a 'non-nuclear power' because of a 'special relationship'. There is no suggestion that Australia entertained the prospects of obtaining nuclear weapons. *A very special relationship: British atomic tests in Australia* (London, 1987), p. xv.

<sup>3</sup> See, for example, P. Edwards, *Crises and commitments: the politics and diplomacy of Australia's involvement in Southeast Asia conflicts, 1948–1965* (Sydney, 1992); P. Dennis and J. Grey, *Emergency and confrontation: Australia's military operations in Malaya and Borneo, 1950–1966* (Canberra, 1996).

that Australia had suffered a ‘great betrayal’<sup>4</sup> when the British failed to hold Singapore in 1942, Canberra entered into an unparalleled level of co-operation in defence planning with Britain in the so-called ‘joint project’, a programme popularly associated with the testing of rockets at Woomera in South Australia. It was, in fact, a far more extensive programme and one aimed ultimately, as far as the Australians were concerned, at the possession of nuclear deterrent weapons and their delivery systems.

Scholarship in Britain has been dominated by the pursuit of the ‘special relationship’ with Washington between 1946, when the McMahon Act effectively suspended assistance to Britain in atomic energy, and 1957, when the relationship was restored.<sup>5</sup> In Brian Cathcart’s recent account of the ‘struggle’ for the atomic bomb, for example, ‘far-flung’ bases were ‘irrelevant since the heart of the Empire was acutely vulnerable to devastating attack’.<sup>6</sup> In pursuing an independent atomic deterrent programme, however, Britain relied to a great extent on the empire. Without the assistance of the Americans, who moved to protect a monopoly, in Herken’s assessment, of their ‘winning weapon’,<sup>7</sup> the resources of empire were essential: uranium for fissile material, scientific manpower for research, and barren areas both for producing the highly toxic plutonium and for testing the new weapons of mass destruction. The central assumption of empire planning was that in a future war Australia would be a ‘main support base’ in global war.

## I

To be sure, the ultimate prize pursued by London was American co-operation, but before 1957 that was not assured. Before the final decision in 1947 by London to go ahead with an independent atomic programme, there was the hope that Canada would continue to host a Commonwealth programme, even if the Americans refused co-operation. Bertrand Goldschmidt, the French nuclear physicist who worked in Montreal, wrote in 1990 that British ambitions for their own programme dated from the 1943 Quebec Agreement.<sup>8</sup> Significantly, agreements reached under the Manhattan project did not extend co-operation on the most promising means of developing nuclear weapons, the use of plutonium.<sup>9</sup> This meant that the experimental plutonium-producing pile at Chalk River near Ottawa was of great potential importance to the future of the British programme. The Americans, however, were clearly in a position to

<sup>4</sup> David Day, *The great betrayal: Britain, Australia and the onset of the Pacific war, 1939–42* (London, 1988).

<sup>5</sup> There is a great wealth of literature on this. The classic work is Margaret Gowing’s *Independence and deterrence: Britain and atomic energy, 1945–1952* (London, 1974). Roger Louis and Hedley Bull have compiled a collection of essays by some of the most significant authors in *The ‘special relationship’: Anglo-American relations since 1945* (Oxford, 1986). See also Ian Clark and Nicholas Wheeler, *The British origins of nuclear strategy, 1945–1955* (Oxford, 1989).

<sup>6</sup> Brian Cathcart, *Test of greatness: Britain’s struggle for the atom bomb* (London, 1994), p. 8.

<sup>7</sup> G. Herken, *The winning weapon: the atomic bomb in the Cold War, 1945–1950* (Princeton, 1981).

<sup>8</sup> Bertrand Goldschmidt, *Atomic rivals* (New Brunswick, 1990), p. 191.

<sup>9</sup> Vincent C. Jones, *Manhattan: the army and the atomic bomb* (Washington, 1985), p. 247.

dictate terms in Canada.<sup>10</sup> It was American money that rescued the Canadian uranium company El Dorado in 1941 and thereafter the US succeeded in locking up Canadian Shield ore supplies on a long-term basis, effectively until the 1960s.<sup>11</sup> The British could have attempted to get the Canadians to break their contracts to save the Montreal programme in 1943, but the chief of the Canadian National Research Council, C. J. Mackenzie was sent to London with the message that the British must put up with the American terms or 'be shut out', leading Churchill to accuse the Canadians of having 'sold the British Empire down the river'.<sup>12</sup> Despite great misgivings in Ottawa, Chalk River head, Sir John Cockcroft, was withdrawn in November 1945, leading Mackenzie to tartly conclude that 'Canada would have no other alternative than to tie in with the United States'.<sup>13</sup>

Steps were taken in early 1946 by Washington to organize a more systematic continental defence, and this had implications for reactor development in Canada.<sup>14</sup> The files on the Great Lakes–St Lawrence seaway and power project are extensively classified, but it is clear that the US joint chiefs of staff envisaged an unprecedented level of 'industrial mobilization' in conjunction with Canada. Not only would the Americans tie up Canadian uranium, but would also effectively control the atomic programme as a whole. In 1946, the year before the official decision to press ahead with a British atomic bomb, it was obvious that Canada was not going to host the Commonwealth programme.<sup>15</sup>

In any case, Attlee had concluded that a plant in Canada was not 'an adequate substitute' for a British reactor.<sup>16</sup> While the formal decision to build an independent deterrent was delayed until 1947, British determination to do so can be traced to the experiences of the war. The blitz, in Peter Hennessey's view, was 'the starting point for modern Britain'. 'Never again' would the island be exposed to the threat of attack from the air.<sup>17</sup> Another blitz, in which atomic weapons would be employed, would destroy the British Isles. In the age of air power and the atomic bomb the empire would provide the basis for dispersing defence assets, but it would also need a higher level of integration

<sup>10</sup> Robert Bothwell, *Nucleus: the history of atomic energy of Canada Limited* (Toronto, 1988), p. 22.

<sup>11</sup> Robert Bothwell, *Eldorado: Canada's national Uranium company* (Toronto, 1994).

<sup>12</sup> Bothwell, *Nucleus*, pp. 34–8, 68.

<sup>13</sup> Mackenzie papers, Ottawa, MG30, B122, diary 21, 15 Nov. 1945.

<sup>14</sup> N. Hillmer and J. Granatstein, *Empire to umpire: Canada and the world to the 1990s* (Toronto, 1994), ch. 5.

<sup>15</sup> Reg Whitaker and Gary Marcuse, *Cold War Canada: the making of a national insecurity state, 1945–1957* (Toronto, 1994), p. 61.

<sup>16</sup> The final decision to build a bomb was taken in 1947. Well before, however, planning was started on a range of associated steps. Plutonium was a major hurdle for British researchers, as Cathcart has recently reminded us, and steps were taken to build a group under Sir John Cockcroft at Harwell. Cathcart, *Test of greatness*, p. 50. The operational requirement for the delivery system was issued in 1945 and received the support of the air staff in August 1946. Humphrey Wynn, *RAF nuclear deterrent forces* (London, 1994), p. 18.

<sup>17</sup> *Never again: Britain 1945–1951* (London, 1993). The fear of atomic attack predated the war itself, see Kirk Willis, 'The origins of British nuclear culture, 1895–1939', *Journal of British Studies*, 345 (1995).

than before. Attlee told the Cabinet in February 1946 that it was his intention to continue in peace the 'close and thorough full partnership' in the Commonwealth that had been established in the war in the 'field of scientific and technical development, and in the production of munitions and supplies of all kinds'.<sup>18</sup>

The same month, formal co-operation on modern deterrent weapons began with a request of the British government in February 1946 for Woomera. This was to become for the next fifteen years the primary test site for Britain's rockets and was to be supplemented by test sites for atomic weapons at Monte Bello, an island site off the West Australian coast, and Maralinga, near Woomera. Peter Morton, the author of the Anglo-Australian 'joint project', has documented the fortunes of the rocket programme, but has not assumed that there was an even greater level of co-operation.<sup>19</sup> The Australian Labour prime minister Ben Chifley accepted the project, subject to Australia having full access to information and being able to manufacture modern weapons at 'a future date in accordance with the need to disperse manufacture through the Empire'.<sup>20</sup>

Behind Chifley's conditions for what was essentially a major step forward in the industrialization of Australia, for which he is well known, was a major initiative on the future of Australia's defence relationship with the British Commonwealth. The defence committee's 'strategic appreciation of Australia', prepared for Chifley in February 1946, laid down the guiding principles of Australia's defence that were to serve as the main working policy for the next decade. Imperial defence science research was to be the key:

the advent of the atomic bomb demonstrated that... science can exercise a preponderant influence in the face of otherwise superior power... Superior scientific development can, if secrecy be preserved, redress the balance between a weak nation and a strong one and this is of profound significance to Australia.<sup>21</sup>

The strategic partnership between Britain and Australia was forged at the May 1946 prime ministers' conference in London.<sup>22</sup> British delegates stressed that the development of heavy industry, munitions, and aircraft in the Dominions was desirable given the vulnerability of the British Isles.<sup>23</sup> At the same time there was another conference, which has not received attention from historians. Imperial science delegates met in London at the inappropriately labelled 'informal' commonwealth conference on defence science.<sup>24</sup> The chairman of the conference, a key architect in the planning for Britain's nuclear deterrent forces, Sir Henry Tizard, told delegates that they could expect to

<sup>18</sup> Public Record Office (PRO), London, CAB129/7, CP(46)65, 15 Feb. 1946.

<sup>19</sup> Peter Morton, *Fire across the desert: Woomera and the Anglo-Australian joint project, 1946–1980* (Canberra, 1989).

<sup>20</sup> Australian Archives (AA), A2700, 27, Submission 1186, 3 July 1946.

<sup>21</sup> AA, A5954/1, 1662/4.

<sup>22</sup> The section on the formation of the joint intelligence bureau (JIB) has been removed from archives but it is clear that a mission from Britain to Australia prior to the 1946 Commonwealth conference had launched significant initiatives here. Intelligence links were to be strengthened and defence science machinery was developed on British lines. AA, A5954/1, 1662/1.

<sup>23</sup> AA, A5954/1, 1634/6. <sup>24</sup> PRO, PREM8, 753, Attlee to Tizard, 3 May 1946.

benefit from biological and atomic research ‘within ten years’, i.e. about 1956–7.<sup>25</sup> At the first plenary session of the conference, he stressed that the atomic bomb might yet prove a blessing. The British Commonwealth was an example of how nations, while still retaining their own sovereignty, could yet set aside these boundaries and work together for the common good. In the past, concentration in time of war had been a source of strength, but this era was passing and there was a tendency to disperse both population and scientific brains for the more successful prosecution of the war.<sup>26</sup>

That was the carrot, but the British had a more immediate concern. What Tizard wanted was Dominion scientific manpower.<sup>27</sup> In May 1946 the Barlow committee advised that there were grave shortages in scientific manpower.<sup>28</sup> Now this situation was to be exacerbated by a leap into a vast programme of developing deterrent weapons: atomic bombs and their complex delivery systems.<sup>29</sup> Tizard, therefore, explained that there was a ‘vast amount of scientific research work’ to be done in the defence field, but that this would have to be shared by virtue of the ‘limited resources’ and the geographical position’ of the United Kingdom. The main areas for research in the next ten years, he said, would be in the fields of guided projectiles, atomic energy, and biological warfare. ‘It was unlikely’, he confessed, ‘that any single country in the Commonwealth would be able to provide all that was required to develop any one of these items, and co-operation was therefore essential’. The United Kingdom was, therefore, ‘in favour of the fullest co-operation with the Dominions in the field of defence Science and all that such co-operation implied’.<sup>30</sup>

The meaning of the last clause was not lost on the Australians. Major General L. E. Beavis, the leader of the delegation, said that Australia intended to ‘devote every effort to making any co-ordination arrangements a success and to play the fullest part in Commonwealth Defence Research’. Beavis was particularly keen to discuss atomic research. And as Chifley knew from Attlee, this meant the use of plutonium for bombs; the prospects of electric power were well down the track.<sup>31</sup> Australian delegates also proposed that Woomera range

<sup>25</sup> Tizard chaired the scientific committee that recommended in July 1945 that Britain should undertake large-scale development of atomic energy and delivery systems. His report set out the parameters of British strategic defence strategy. Wynn, *RAF nuclear deterrent forces*, pp. 1–2. 1957 was the planning date accepted by the British chiefs of staff for the point at which the Soviet Union would be able to wage nuclear war.

<sup>26</sup> PRO, DO35/1759, ICCDS, 1st meeting, 3 June 1946.

<sup>27</sup> The cabinet defence committee later concluded that ‘the limiting factor’ was the lack of sufficiently qualified scientific staff. The United Kingdom, however, ‘could offer more facilities for post-graduate training than can any of the other countries of the Commonwealth’. PRO, PREM8, 753, DO(48)4, 6 Jan. 1948.

<sup>28</sup> By 1955 the committee estimated that the British universities could only produce some 55,000 to 60,000 scientists, when at least 70,000 were needed. PRO, CAB129/9, CP(46)185, 3 May 1946.

<sup>29</sup> Cockcroft papers, Churchill College, Cambridge, CKFT25/19, ‘Correspondence about Chalk River and Harwell’.

<sup>30</sup> PRO, ICCDS, 1st and 3rd meetings, 3 June 1946, DO 35/1759.

<sup>31</sup> Chifley had been advised by Attlee on 17 Oct. 1945 that the production of plutonium for power could not be separated from the simultaneous production of bomb-grade material, a factor

be extended to 3,000 miles, well over the Indian Ocean. A range of that size would be required for a future generation of intercontinental ballistic missiles, which in the late fifties would see the testing of 'Black Knight' and 'Blue Streak' missiles. The testing of atomic weapons was hinted at by the requirement identified at the conference that the Australian range would have to provide visibility up to 40,000 feet, the safe ceiling for the release of free-fall atomic bombs.<sup>32</sup> In other words there is a very strong suggestion that an in-principle decision to test nuclear weapons in Australia was taken at this conference.

The defence science conference marked the beginning of a new era in imperial co-operation. On the day that the conference finished, 15 June 1946, Chifley told the cabinet that the defence committee envisaged that atomic energy would have 'far-reaching' effects on Commonwealth countries and on 'our plans in cooperation on Empire Defence'. Atomic power was of 'great industrial and strategic importance' and 'there is much to be gained by the possible development of atomic reactors as sources of industrial power'. Chifley declared that the future of Australia's atomic programme would be based on three steps: the exploration of Australian uranium ore; the training of physicists, physical chemists, and engineers in fundamental research into nuclear engineering practice; and 'it is important that at an early stage a practical step be taken in Australia to establish one of the types of atomic piles capable of producing energy for industrial purposes'.<sup>33</sup>

In fact, Chifley was impatient to make a start on projects in Australia. Here he received crucial advice from Mark Oliphant, an Australian physicist, who had played a central role in the war-time British atomic programme. Oliphant, then professor of physics at Birmingham, addressed the cabinet in January 1946 and put the case for an Australian atomic programme in collaboration with Britain. He advised that defence policies in 'pre-atomic bomb terms were now useless' and drew attention to the fact that concentration of naval fleets would now be impossible. Such a programme, however, would be costly and would involve significant investment in research. The sums that had been envisaged for a national university devoted to advanced research had so far been modest,<sup>34</sup> but the talk with Oliphant and the defence science conference changed that. He projected that the expenditure for a school of physics would be £500,000 for capital expenditure alone; the Australian government had originally set aside only £120,000. Chifley, however, was adamant that the

---

ignored by Alice Cawte, *Atomic Australia, 1944-1990* (Sydney, 1992). The letter described the British predicament in the Second World War when they had to move industry to less exposed parts of the island. AA, A5954/1, 1662/1, Attlee to Chifley, 17 Oct. 1945.

<sup>32</sup> PRO, DO35/1759, ICCDS/17 (final), 4 July 1946.

<sup>33</sup> AA, A2700/XM1, 28, submission 1197, 15 June 1946. Chief of Air Staff Lord Portal stressed that Harwell would be the site of a substantial Commonwealth effort by July 1947. PRO, CAB133/86, PMM(46) 11th meeting, 3 May 1946.

<sup>34</sup> S. Foster and M. Varghese, *The making of the Australian National University* (Canberra, 1996), p. 16.

sums be met, but on condition that it was devoted to nuclear physics research and that Oliphant direct the new school.<sup>35</sup>

The Australian National University (ANU) had parallels with the atomic project in Britain. Oliphant himself had been instrumental in choosing the Harwell reactor site thirteen miles south of Oxford, and was impressed by the fact that it was remote from a large population, and yet near sources of electricity and water, and near a large university.<sup>36</sup> Herein the ANU was well located. It was in the heart of the national capital with its political, military, and administrative centres; it was sheltered inland; and it was close to the projected centre of the nuclear power industry, the Snowy Mountains scheme.<sup>37</sup>

On 22 February 1949 a memorandum in the Australian ministry of supply and development pointed out that the Snowy scheme's establishments should 'be located in places remote from access by any enemy and yet within reach of ample supplies of electric power and of cultural establishments such as universities and libraries. The Federal capital tends to be ideal in that respect.'<sup>38</sup>

The heart of the Chifley government's programmes for the development of Australia after the war was the Snowy Mountains scheme, a vast project of dams, underground power stations, and canals. It was to be a great magnet for British immigration and investment, and was to provide the electricity that would be required for modern industry. It has also been associated in many minds with the irrigation of Australia's arid interior. All of these features describe what the scheme became, but the origins were based on very different premises. Historians have failed to take the Australian minister for works and housing, Nelson Lemmon, who formally moved the Snowy bill in 1949, at his word.

Lemmon wanted a Manhattan project. The government planned, he told parliament, to control the electricity resources of the Snowy for defence reasons and went on to contrast it with the Tennessee Valley Authority (TVA), the site of first American reactors, which had

played its part in the winning of the war by allowing a big bloc of power to be taken inland away from the great cities for the development of atomic weapons... Now... the Australian Government desires to proceed with the great Snowy Mountains scheme, in an endeavour to ensure that Australia does not lag in the race to develop atomic power.

The Australian scheme, said Lemmon, would eventually surpass the TVA by harnessing the more extensive water resources. The immediate need, however, was for the allocation of Snowy-based power of at least 400,000 kilowatts to meet obligations of 'Empire Defence'.<sup>39</sup>

<sup>35</sup> AA, A2700, 31, submission 1291, 31 Jan. 1947.

<sup>36</sup> Gowing, *Independence and deterrence*, pp. 160–1.

<sup>37</sup> Wayne Reynolds, 'Atomic war, empire strategic dispersal and the origins of the Snowy Mountains scheme', *War and Society*, 14 (1996).

<sup>38</sup> AA, A2618/1, 'Snowy Mountain diversion', memorandum for minister for supply and development from Jensen, 9 Feb. 1949.

<sup>39</sup> *Commonwealth parliamentary debates (CPD)*, 202 (1949), p. 247.



The Snowy was an ideal location for the construction of a plutonium-producing high power pile or fast breeder reactor in Australia. Vast amounts of water were needed for cooling and for moderation.<sup>40</sup> As the Australian defence officials explained in London in 1948, Australia should be considered because

The location of atomic piles in the United Kingdom presents huge problems... The disposal of fission products is a matter of the greatest difficulty, because both sea and land disposal is impracticable in or around Great Britain... As a result, it is necessary to find a site for these new large piles, at least 30 or 40 miles from the nearest point of habitation. Such a site is almost non-existent in the United Kingdom.<sup>41</sup>

## II

In 1948 Britain negotiated a 'modus vivendi' with Washington which allowed for an exchange of some information but not in the vital area of plutonium technology. The agreement also restricted the extent of co-operation with 'third countries', a policy that dated to the Quebec Agreement of 1943. This put a brake on Australian ambitions until Britain entered its test phase of deterrent weapons in the early fifties. The situation was confused, however, as Washington offered alliances to both Britain and Australia. NATO in 1949 was a far stronger treaty but promised protection under the US atomic umbrella. ANZUS in 1951 was a much looser form of protection, but it was enough to split the Australian government. Ministers such as Percy Spender and Richard Casey, both to serve in the fifties in the external affairs portfolio, were determined to effect close relations with Washington. Menzies was less sanguine and saw the imperial connection as the most likely to yield results, especially in global war planning. All, however, were agreed that the Australians should have access to the highest levels of strategic planning by the Allies.

It was clear, however, that the Americans did not perceive a nuclear role for the Commonwealth. In both London and Canberra there was pressure from the Americans to get an increase in conventional war preparations. That, and the Fuchs spy case which broke in early 1950, meant that it was premature to look to Washington for assistance in the deterrent weapons programme. This was brought home in June 1950, at the time of the outbreak of the Korean war, when the chiefs of staff hoped to use US sites at Eniwetok or Nevada to test their nuclear weapons. There were also provisional plans to use the Canadian northern wastes. Predictably the Americans showed no enthusiasm and in January 1951 Attlee discussed the possibility of using Australian test sites. In

<sup>40</sup> Cockcroft papers, CKFT 5/13, 'Applications of atomic energy'.

<sup>41</sup> AA, A5954/1, 1385/3, report 9/1948. The extent of British involvement at this point can only be assumed. The US had an embargo in place on intelligence to Australia that would have allowed the atomic programme to proceed. See Ken Buckley, Barbara Dale, and Wayne Reynolds, *Doc Evatt: patriot, internationalist, fighter and scholar* (Sydney, 1994), p. 292. The idea of a TVA project in the Commonwealth was first floated by Leo Amery after the Quebec conference of 1943. In Amery's opinion the empire would allow Britain to disperse its population and industries so that in future the defence potential would not be destroyed in the event of an air attack on the British Isles. Lilienthal papers, Princeton, box 106; PRO EG1/119.



March the British joint services mission in Washington at last concluded that the US would not offer their sites.<sup>42</sup>

There was, in other words, no basis for throwing over imperial planning at that stage. Nor had London's fear of nuclear war receded, a factor underscored by Attlee's dramatic flight to Washington at the end of 1950, when the US threatened the use of atomic weapons in Korea. The planning of 1946 was the basis of the British joint war production committee's conclusion, reached after the decision to test the atomic bomb in Australia, that production should be encouraged in Commonwealth countries 'to the greatest practicable extent ... in the interests of strategic dispersal and of increasing the war potential of the Commonwealth'.<sup>43</sup> Indeed in July 1950 talks were held in London designed to expand defence science co-operation. The leading Australian delegate, the government's defence science adviser, L. H. Martin, was keen to engage many more scientists on defence research, including that on atomic weapons, in peace-time.<sup>44</sup> Canberra was anxious, Martin argued, to conduct research on the effects of an atomic blast in a port and particularly on the long-term effects of contamination by a base surge. Martin stressed that, as was the case in Britain, 'the largest Australian cities were especially vulnerable to the dangers of atomic bombs exploding under water'. At Monte Bello he would get his opportunity.<sup>45</sup>

The talks provided the basis for defence science co-operation for the next seven years. The final report was endorsed by the defence research policy committee on 2 October 1950. The committee sought standardization on a Commonwealth basis and stressed that in research the UK 'in the first place' could pursue the work 'on behalf of the whole Commonwealth'.<sup>46</sup>

The work at the ANU has been clouded in secrecy, but it is fair to assume that the British shared their programme for plutonium research and the preparations for thermonuclear weapons. In the early 1950s Britain needed plutonium, and, as the test phase commenced in 1952, the question became urgent. In August project PIPPA was discussed with the technical committee leading to the decision by the chiefs of staff to double plutonium production in February 1953.<sup>47</sup>

The Australians were integral to this effort. A team was assembled finally in 1950 under Oliphant, who had been released from his work in the UK, in Attlee's words, 'as part of the general British contribution' to work in the atomic energy field. Howard Beale, Australian minister of supply, gave a hint of what this would be when he submitted to the cabinet in September 1952, after talks with Cockcroft, that the objective of Australia's research and development programme could be the construction of a heavy water atomic pile. The intermediate objective would be an experimental pile which could

<sup>42</sup> Arnold, *A very special relationship*, pp. 19–20.

<sup>43</sup> PRO, CAB131/9, DO(50)58, 21 July 1950, and CAB131/11, DO(51)72 (revise), 18 June 1951.

<sup>44</sup> AA, A5799/15, 3/1950.

<sup>45</sup> PRO, DEFE 11/15, CWS/P(53)6, CWS/P(53)12.

<sup>46</sup> PRO, DEFE 11/15, DRP(50)121, 2 Oct. 1950.

<sup>47</sup> Cockcroft papers, CKFT25/8, 'Atomic energy history'.

also make a contribution to the production of plutonium for defence purposes. Oliphant at the time assured Cockcroft that 'Australia's research facilities would equal those of the United Kingdom when the National University installations were completed at Canberra' and that Australian scientists 'should not be discouraged from independent investigation of these problems simply because the US were so far ahead in the game'.<sup>48</sup> To encourage that research the British donated a cyclotron to the ANU. They had also approved the release of Ernest Titterton, in Cathcart's view, one of the leading bomb ballistics experts in Britain.<sup>49</sup>

At the same time Churchill persisted with attempts to restore co-operation with the Americans. Despite the fact that US observers were pointedly not invited to the Monte Bello test in October 1952, Churchill wrote to the new Republican president Eisenhower in February 1953 hoping that the commander of the great 'Overlord' invasion in 1944 would be moved by the fact that 'we are making the bomb ourselves'.<sup>50</sup>

That was the problem. The United States Atomic Energy Commission (USAEC) was still not prepared to share information on bomb production. A factor here was the competition for uranium in Australia and Africa. As Simpson has concluded, the imminence of nuclear testing and weapon production made it imperative to accelerate the atomic programme rather than wait for a major breakthrough in talks with Washington.<sup>51</sup> The Americans, however, had accelerated their own nuclear programme after the Soviet test and were more determined than ever to corner uranium and scientific manpower.<sup>52</sup> The downturn in relations were symbolized by the change of leadership, with Churchill passing the baton to Anthony Eden. Eden, in Charmley's view, was prepared to look beyond the 'special relationship' and to secure closer co-operation with the Dutch, South Africans, and Australians.<sup>53</sup>

In 1953 the British government was ready to tear up the atomic relationship that had restricted co-operation with their imperial partners since the so-called 'modus vivendi' of 1948. In October the 'totem' atomic tests in central Australia led to agreement for a 'permanent proving ground' at Maralinga, with at least twenty firings, including the possibility of thermonuclear weapons.<sup>54</sup> In return the British Atomic Energy Authority (UKAEA) was keen to encourage Australian dependence on its reactors. Eisenhower's 'atoms for peace' initiative in December 1953 foreshadowed American competition and

<sup>48</sup> Cockcroft papers, CHAD1, boxes 9/2 and 9/3.

<sup>49</sup> Cathcart, *Test of greatness*, p. 68. Titterton wanted nuclear weapons for Australian forces and advocated the development of British-supplied reactors on the Snowy in his book *Facing the atomic future* (Sydney, 1956), pp. 112–13, 212.

<sup>50</sup> John Dickie, *'Special' no more: Anglo-American relations: rhetoric and reality* (London, 1994), p. 80.

<sup>51</sup> John Simpson, *The independent nuclear state* (London, 1986), p. 114.

<sup>52</sup> Clark and Wheeler, *British origins of nuclear strategy*, pp. 140–59. Richard G. Hewlett and Francis Duncan, *Atomic shield, 1947–1952* (University Park, 1969), ch. 15.

<sup>53</sup> John Charmley, *Churchill's grand alliance: the Anglo-American special relationship, 1940–57* (London, 1995), p. 245.

<sup>54</sup> Arnold, *A very special relationship*, p. 97.

Ottawa at the same time approved a joint feasibility study of power reactors between Ontario Hydro and the National Research Council. In Britain there were discussions over methods of co-ordinating the new Atomic Authority with the British Electricity Authority.<sup>55</sup> South Africa, India, and Australia then accounted for half Britain's exports and London was keen to sell large PIPPA reactors to these Commonwealth customers.<sup>56</sup> The Board of Trade noted that Australia wanted specifically a 'more high powered reactor', since this suited their particular needs.<sup>57</sup>

In July 1954 the UKAEA succeeded in kick-starting an Australian full power-reactor programme, the first step being the building of an experimental reactor at Lucas Heights, to the south of Sydney, where it would be close to industry and universities. In short an Australian Harwell. The Lucas Heights reactor would take three to five years to develop, but power reactors could be in operation in ten years. To prepare for that, on 20 September 1954, Beale submitted to the cabinet a plan for research and development. He argued that the Australian programme would start with the recruitment of scientific staff for training staff in appropriate atomic establishments in Britain, where they would conduct research into fluid fuel systems for reactors. There they would acquire the information for designing and constructing an experimental nuclear reactor in the next three years. Beale also requested 'an investigation of the possible use of Snowy Mountains hydro-electric power to operate a diffusion plant to produce enriched uranium fuel elements... the possibility of heavy water production in New Zealand and Australia; [and] a reactor programme for Australia'.

The Snowy reactor would be built by Australian engineers, who could study the production of plutonium at Windscale; chemical separation techniques at Springfields; the diffusion plant at Capenhurst; production techniques at Risely; and the site for the fast plutonium breeder reactor at Dounreay.<sup>58</sup>

The Australian reactors would have a role in defence. Oliphant advised officers from the department of external affairs that Australia should not agree to any proposal that would prohibit the manufacture of atomic weapons. It was not necessary, however, actually to fabricate a bomb in Oliphant's view:

Atomic power plants producing plutonium and U-235 could be converted to the manufacture of atomic weapons in a matter of hours. For the manufacture of a thermonuclear weapon fairly complex plant and installations would be required but could be tackled by any industrialised nation... Australia could best be defended by nuclear weapons and that conventional forces and armaments could be cut.<sup>59</sup>

It seems apparent that the decision to give final approval in 1955 to the Maralinga tests was part of a general package of agreements on atomic power.

<sup>55</sup> Bothwell, *Nucleus*, p. 198; PRO, EG1/54, 'The UKAEA: statutory direction concerning the production of electricity'.

<sup>56</sup> PRO, EG1/64, overseas trade memorandum 9/56, 10 Feb. 1956.

<sup>57</sup> PRO, EG1/64, 'advisory council on overseas construction', 1 July 1955.

<sup>58</sup> AA, A4906/XM1, submission 117, 20 Sept. 1954.

<sup>59</sup> AA, A1838/1, 720/3, Memorandum of discussion with Oliphant, 27 June 1955.

The Australian government negotiated the Maralinga tests with the proviso that Britain would provide data ‘about the effects of atomic weapons for both civil defence and military purposes’.<sup>60</sup> Maralinga, however, was a part of a major programme of atomic co-operation. Australia in mid-1956 had a considerable investment in atomic energy. Apart from the construction of Lucas Heights there were eight universities engaged in research covering such diverse fields as physics, chemistry, metallurgy, electrical engineering, and geophysics.<sup>61</sup> Australian personnel were involved in the construction of the trials area, and a vast array of services was provided by the Salisbury workshops, meteorological staff, radio operators, the postal service, the RAAF, security staff, ordnance and supply staff, civil defence personnel, and so on. To Menzies the British had to note ‘the cumulative effect’ of the Australia contribution at Woomera and Maralinga which were undertaken as part of Commonwealth defence.<sup>62</sup>

The joint project at Woomera was also reaching proportions that promised to transform Australian industry. By early 1953 the Australian defence contractors association was formed, a consortium which was to build a miniature military industrial complex at Salisbury in South Australia – the support area for the rocket range. The project embraced wind tunnels, work shops, engineering projects, and industry. Major British aerospace companies were involved, and at Salisbury the various laboratories combined to form the weapons research establishment. By March 1956 the Australian cabinet noted that some £50 million had been poured into Woomera. Costs were ballooning, with Australian costs rising from £9.5 million in 1956 to £13.25 million in 1958–9. There were, however, immediate gains. Large numbers of technicians were being trained and sophisticated range instruments, like the WREDAC computer, were being introduced. The ministry of supply in 1956 had committed much of the guided weapons research to Australia involving major firms like Hawker de Havilland, Rolls Royce, and the British Aircraft Corporation. The ultimate reward would be expertise and the possibility that Australia would have its own Blue Streak intermediate range ballistic missiles.<sup>63</sup>

In 1956 the Australians seemed on the verge of a brave new world. The ideas generally floated in 1946 at the defence science conference had at last come to fruition.

### III

Britain’s success in developing deterrent weapons in 1956 and 1957, along with the dramatic successes of the Soviet Union in rocketry and thermonuclear weapons, paved the way for a renewal of Anglo-American atomic relations.<sup>64</sup>

<sup>60</sup> J. Symonds, *A history of British atomic tests in Australia* (Canberra, 1985), p. 280.

<sup>61</sup> AA, A1838/1, 720/3, ‘Atomic energy-developments in Australia’.

<sup>62</sup> Symonds, *History of British atomic tests*, pp. 199, 313.

<sup>63</sup> Morton, *Fire across the desert*, pp. 213, 222.

<sup>64</sup> K. W. Condit, *History of the joint chiefs of staff*, vi (Washington, 1992), p. 11; S. J. Ball, ‘Military nuclear relations between the United States and Great Britain under the terms of the McMahon Act, 1946–1958’, *Historical Journal*, 38 (1995), pp. 439–54.

The restoration of atomic co-operation was effected in a series of steps after the historic Bermuda summit between Eisenhower and Macmillan in March 1957. This conference saw the beginning of a process that was to work its way through every facet of the Anglo-Australian joint project and imperial defence co-operation. Britain was accorded its 'special' position on 19 June 1958 when the US congress approved final amendments of the 1954 Atomic Energy Act that limited exchanges of nuclear weapons data to nations that had made 'substantial progress' in the nuclear weapons field.<sup>65</sup>

Missile co-operation soon followed. Since 1955 the Americans were moving to develop missiles in co-operation with its allies, but Sputnik, which was launched on 4 October 1957, gave the process momentum.<sup>66</sup> Eisenhower authorized a vast expansion of the US missile programme, including an accelerated commitment of intermediate range missiles to NATO. Against these momentous developments on 24 February 1960 Macmillan proposed to the defence committee that 'Our purpose should be to maintain a strategic force which is acceptable to the Americans.'<sup>67</sup> After this meeting, having spent £84 million on Blue Streak, the British government cancelled the project.

The Macmillan government also moved to end the integration of defence science which had been the heart of the post-war imperial effort. In 1957 the UK gained access to Canadian ores after an agreement with Eldorado mines in March, the month of the Bermuda conference.<sup>68</sup> In July the US and Britain held discussions designed to end the production of fissile material for nuclear weapons.<sup>69</sup>

This had immediate implications for Australia. By early 1957 Canberra had spent twice as much as the estimated £5.5 million on Lucas Heights. The UK Atomic Energy Authority became much more restrictive in passing on information, especially on the highly secret work involving beryllium.<sup>70</sup>

If the Australians were going to stay in the game, then it would be without support. Prominent Liberals like W. C. Wentworth and the future prime minister John Gorton were keen to press on with an Australian deterrent programme, as was Phillip Baxter at the AAEC, but the Menzies cabinet hesitated.<sup>71</sup> In reality the Australians were stuck in Phase 1 of their atomic programme, that of research. If progress were to be made in this area, then an unprecedented national effort would be necessary. It was clear that there would be no immediate prospects of atomic reactors. An atomic energy symposium convened in June 1958 by the Australian atomic energy com-

<sup>65</sup> T. Botti, *The long wait: the forging of the Anglo-American nuclear alliance, 1945-1958* (New York, 1987), p. 232.

<sup>66</sup> Memorandum of discussion at the 236th NSC meeting, 10 Feb. 1955, *Foreign relations of the US (FRUS)*, xx (1955-7), pp. 25, 27; R. Divine, *The Sputnik challenge: Eisenhower's response to the Soviet satellite* (Oxford, 1993), p. 46.

<sup>67</sup> PRO, CAB 131/23, D(60)2, 24 Feb. 1960.

<sup>68</sup> Bothwell, *Eldorado*, p. 398; PRO, EG1/117, 'Briefs for Bermuda conference'.

<sup>69</sup> PRO CAB 128, 31, part 2, CC(57) 46th conclusions, 24 June 1957; C(57)143, 146, and 151.

<sup>70</sup> Thermonuclear weapons used beryllium tampers, a standard feature of most modern nuclear weapons, to provide a fission trigger. R. Rhodes, *Dark sun: the making of the hydrogen bomb* (New York, 1995), pp. 119, 194, 253.

<sup>71</sup> Cawte, *Atomic Australia*, p. 109.

mission, and made up of the various Australian stakeholders, the power authorities, universities, industry, and government, was told by AAEC head Phillip Baxter that breeder reactors might be installed ‘in the last quarter of this century’.<sup>72</sup>

The changes in British policy in the view of Harry Messle, then professor of nuclear physics at the University of Sydney, confronted the Menzies government with ‘the biggest hot potato in Australian politics for years’. After the cancellation of Blue Streak there was a savage debate in parliament with Kim Beasley, the father of the current Labour opposition leader, claiming that it marked the ‘end of an era’ in which it was no longer assumed that there would be a nuclear war. Others called for the Australian government to press on with its own reactors.<sup>73</sup>

The issue was put to rest on 2 September 1960 by an interdepartmental technical committee headed by Professor Leslie Martin, a leading defence scientist involved in the nuclear issue from the beginning of the joint project. The committee concluded that without British involvement in the joint project Australian interest would be slight. The committee saw the cancellation of Blue Streak as ‘an important re-orientation of UK defence policy’.<sup>74</sup> Atomic energy research, on the other hand, was based on laboratory research at Lucas Heights. The cabinet in July 1962 concluded that the presence in Australia of a body of nuclear scientists and engineers skilled in nuclear energy represented a ‘positive asset’ which would be available at any time, if the government decided to develop a nuclear defence potential. The Lucas Heights reactor was then costing £3–4 million a year in capital equipment and operating costs, but Australia was to move to the ‘second stage’ in its atomic programme between 1965 and 1968. In the meantime Lucas Heights needed to put more emphasis on reactor physics and engineering in experiments in a lead up to the building of a demonstration power reactor.<sup>75</sup>

The cabinet papers will presumably reveal the reasons for the failure to proceed with the reactor, when they are cleared under the thirty-year rule. It seems clear that the restoration of Anglo-American nuclear co-operation with the simultaneous move to restrict the proliferation of nuclear weapons in the sixties inclined Canberra to look to an American and British presence in Asia as a substitute for the atomic bomb. Australia, however, was opposed to signing the nuclear non-proliferation treaty throughout the sixties.<sup>76</sup> The strategy seems to have been to keep abreast of the technology required to make atomic weapons quickly, if that should prove to be necessary. As late as 1984 Bill Hayden, Hawke’s minister for external affairs and later governor general, advised that Australian research could provide a nuclear weapons potential.<sup>77</sup>

<sup>72</sup> *Australian atomic energy symposium*, 1958 (Sydney, 1958).

<sup>73</sup> *CPD*, 26 (1960), pp. 815, 844–8.

<sup>74</sup> AA, A1209/79, 61/20, report by technical committee on the use of Blue Streak, 2 Sept. 1960.

<sup>75</sup> AA, A5819/2, submission 190, ‘AAEC research program’.

<sup>76</sup> D. Ball, ‘Australia and nuclear non-proliferation’, *Current Affairs Bulletin*, 55 (1979).

<sup>77</sup> Bill Hayden, *Bill Hayden: an autobiography* (Sydney, 1996), p. 422.

In other words, Australia had joined the ranks of the ‘opaque nuclear proliferators’.<sup>78</sup>

#### IV

If production of nuclear weapons was for the moment beyond the resources of Australia, there was always the possibility that off-the-shelf weapons would be available from its joint partner. The whole rationale for Australia’s regional defence agreement with Britain after the war, enshrined in the Australia, New Zealand, and Malaya agreement of 1948, had been that Australia would assume the role, on behalf of the empire, as a ‘principal power’ in the Pacific. This had particular implications for the use of future air power. ‘Plan D’ in the forties was based on the use of the RAAF throughout the Far East and Middle East, the latter the staging area for air strikes against the Soviet Union in the event of global war.<sup>79</sup>

The problem for Britain, however, was that it was not possible to finalize an Australian role in the ‘Hot War’, since Washington refused to discuss planning. When discussions were undertaken in NATO, especially after the 1952 Lisbon conference on conventional force levels in Europe, they merely emphasized the differences between London and Washington over the relative role of nuclear weapons.<sup>80</sup> Despite Cawte’s dismissal of Menzies’s interests in nuclear weapons,<sup>81</sup> he wanted to use tactical nuclear weapons, especially in the wake of the dramatic French collapse at Dienbienphu in mid-1954. Initially there was hope of US assistance. The South-East Asia Treaty Organization was formed in the wake of the French defeat in Indochina and the US Atomic Energy Act of 30 August empowered the president to authorize regional defence co-operation by the atomic energy agency and the department of defence.<sup>82</sup> The changes to the act encouraged the Australians to think that they would be eligible because it was a nation, as section 144B of the act said, ‘participating with the US pursuant to an international arrangement by substantial and material contributions to the mutual defence security’. This section covered regional security, but the primary purpose, as Gerard Smith, the special consultant to the secretary of state on atomic energy, told Australian embassy staff, was to make possible co-operation with NATO in the atomic defence field. This would be the ‘first step’, in Smith’s assessment, before ANZUS or SEATO were considered.<sup>83</sup>

One of the reasons for Australian anxiety was that, while NATO planning

<sup>78</sup> Avenir Cohen and Benjamin Frankel, ‘Opaque nuclear proliferation’, *Journal of Strategic Studies*, 13 (1990).

<sup>79</sup> Alan Stephens, *Going solo: the Royal Australian Air Force, 1946–71* (Canberra, 1996), ch. 3; Ritchie Owendale, *The English-speaking alliance: Britain, the United States, the dominions and the Cold War, 1945–51* (London, 1985), p. 120.

<sup>80</sup> G. Wyn Rees, *Anglo-American approaches to alliance strategy, 1955–60* (London, 1996), p. 50.

<sup>81</sup> Cawte, *Atomic Australia*, p. 109.

<sup>82</sup> John Simpson, *The independent nuclear state: the United States, Britain and the military atom* (London, 1983), p. 114.

<sup>83</sup> AA, A5462/1, 138/2/10, memo 1030/54, L. J. Lawrey, first secretary, Australian embassy, Washington, 22 Sept. 1954.



did not extend to Asia,<sup>84</sup> talks had started in the UN on moves to stop the spread of nuclear weapons. On 15 October 1954 Menzies vented his concern to Washington about the role of nuclear weapons in a 'limited' war in Asia: 'Preoccupation of the major powers with Europe and the defence of the American continent may cause less than due attention to be given to the growing significance of Chinese manpower in the strategic balance of forces.'<sup>85</sup> Having suffered the effects of Allied strategy in the last conflict, when the policy was to 'beat Hitler first', Canberra was not going to be caught a second time. The Australian joint planning staff in early January 1955 stressed that in the event of war Australia would be isolated and would need to be self-sufficient. The meaning of this was spelt out on 13 January when Sir James Plimsoll, assistant secretary of the department of external affairs, declared that Australia might consider equipping itself with tactical nuclear weapons. Air Marshal McCauley, the chief of the air staff, at the same time confirmed that the RAAF had plans on the delivery of nuclear weapons.<sup>86</sup>

This provided the rationale for embracing ANZAM and a forward defence strategy. On 7 January 1955 the minister of defence, Phillip McBride, wrote to Menzies with the assessment that ANZAM was too weak to meet China in a 'Hot War'.<sup>87</sup> A defence briefing paper prepared for Menzies on 10 February 1955 stressed that Australia would try to get an understanding regarding US intentions in using nuclear weapons in the defence of South-East Asia and especially Malaya, where nuclear contamination would be 'relied upon' to seal off the advance south of Bangkok.<sup>88</sup> On 28 February, Menzies again warned of the effects of atomic disarmament, arguing that it 'might prevent Australia from doing things which she is asked to do to secure the defence of Malaya'. Herein, he said, Australia should be accorded a 'special category' to enable it to fulfil its obligations.<sup>89</sup>

Menzies wanted the bomb. Churchill, however, ever aware of Britain's ultimate objective of securing American atomic co-operation, attempted to hedge the promise of British assistance to its partner in the joint project. On 1 March he stressed that there was a need not to base the deterrent on nuclear weapons alone. Washington too reminded the Australians in March that they should accept the US nuclear deterrent against China.<sup>90</sup>

<sup>84</sup> NATO provided the model for the strategic co-operation, but this was not offered in 1951 in the ANZUS treaty. W. David McIntyre, *Background to the ANZUS pact: policy-making, strategy and diplomacy, 1945-55* (Canterbury, 1995).

<sup>85</sup> PRO DO35/7015, cable 2126, Menzies to Casey and Spender, 15 Oct. 1954. As it turned out the British assessment was that the US were not interested in actual measures to disarm and therefore a 'partial disarmament' would be all that would be in the offing for some time. PRO CAB 131/16, DC(55)45, 17 Oct. 1955.

<sup>86</sup> AA, A4968/2, report by joint planning staff, 10 Jan. 1955.

<sup>87</sup> AA A1209/23, 57/5729, McBride to Menzies, 7 Jan. 1955.

<sup>88</sup> AA A1209/23, 57/5706, NISC/N(55)19, 10 Feb. 1955.

<sup>89</sup> AA A4969/2, 25/16/18, cable 220, external affairs to Casey, 28 Feb. 1955.

<sup>90</sup> There was a general reluctance by SEATO members in February 1955 to accept that 'subversion was the principal danger'. Wyn Rees, *Anglo-American approaches to alliance security*, p. 127; *FRUS*, xx (1955-7), pp. 2-3.

This provoked an immediate reaction from Arthur Tange, secretary of the Australian department of external affairs, who emphasized that in the Far East this posed 'very grave' problems, since there was an absence of conventional forces. He feared that the west might be prepared to use nuclear weapons in Europe but would 'shrink' from using them in Asia. Tange, however, noted that, if counter-force strategy were 'confined' to the use of tactical nuclear weapons, then there was probably less likely to be nuclear war in Asia than in Europe. To this end he drew a distinction between the hydrogen bomb on the one hand and tactical and conventional forces on the other.<sup>91</sup>

Menzies developed a similar position in Washington. It was clear that the Soviet Union, having apparently succeeded in crossing the thermonuclear threshold in August 1953, was prepared to co-operate on the use of nuclear energy and to negotiate about the non-proliferation of nuclear weapons.<sup>92</sup> On 14 March Menzies cautioned against disarmament from a 'European point of view', and stressed Australia's 'needs arising from its special danger from Communist and Japanese aggression': herein Australia had 'special armaments needs'.<sup>93</sup>

Clark and Wheeler argue that Britain's global strategy paper of October 1952 laid the foundations of the independent deterrent, but this was not a new development.<sup>94</sup> The position of the British had always been that the only real defence against atomic attack was the possession of 'active deterrent weapons'. Australian doctrine was the same. On 13 June 1955 the Australian defence committee agreed with London's views that the case for deterrent weapons was 'indisputable' and that in any plan for the defence of South-East Asia 'the capability to launch intensive nuclear attack from the outset might well be decisive'. Indeed, the British defence committee approved the extension of the runway at Butterworth and to lift standards there 'higher than those required for Canberra and Sabre aircraft', in other words, for the V Force.<sup>95</sup>

Before the Second World War, Australians measured British assurances by the construction of the Singapore dry dock and the dispatch of capital ships. Now the measure was runways and the V Force. While Australia, in the words of the defence committee, 'did not yet possess nuclear weapons', the defence of Malaya would be 'indispensable to the UK's strategic position in the Far East and vital to the security of Australia'. In that context the defence committee restated the need for Australian self-sufficiency to prepare for the isolation that would follow the on-set of global war.<sup>96</sup>

The RAAF arrived in Malaya in August 1955 to start construction on the Butterworth base that would be the home for their Canberras. Significantly, their RAF counterparts departed for Europe at the same time. In war,

<sup>91</sup> AA A4968/2, 25/16/18, cable 265, Tange to Australian embassy, Washington, 16 June 1955.

<sup>92</sup> David Holloway, *Stalin and the bomb* (New Haven, 1994), pp. 307, 351.

<sup>93</sup> National Archives Records Administration (NARA), RG59, Box 2504, note on prime minister's discussions in Washington, 14 Mar. 1955.

<sup>94</sup> Clark and Wheeler, *Origins of nuclear strategy*, p. 160.

<sup>95</sup> AA A1838/276, part 2, 720/10/8, 30 May 1956; PRO CAB 131/16, DC(55)7, DC(55) 9th meeting, 15 Sept. 1955. <sup>96</sup> AA A2031, defence committee minute 8/1955, 13 Jan. 1955.

therefore, the RAAF would act as an arm of the RAF in the Far East, and employ the same ordnance. In October 1955, ANZAM embodied planning for atomic war, a factor that almost certainly guided Menzies, when he approved the Maralinga tests the same month. In fact the British had determined in October that the 'Buffalo' tests in Australia in 1956 would see not only the testing of a Blue Danube bomb from a Valiant but also the use of smaller atomic weapons such as the 'Red Beard', which would carry a 16kt plutonium warhead and be launched by light bombers.<sup>97</sup>

The editor of the Australian department of foreign affairs and trade historical records, W. J. Hudson, in his book on the Suez crisis of 1956, writes of Menzies's 'blind loyalty' to Britain. Menzies defied world opinion, in Hudson's view, in supporting Britain in its invasion of Egypt, a 'remarkable' position in that 'no evident Australian material or diplomatic interest was served by this extraordinary loyalty to the British cause; Australian territorial integrity was 'dependent utterly' on the US, not Britain.<sup>98</sup>

Significantly, the Suez crisis corresponded with Eden's commitment to deploy nuclear weapons in the Far East. When on 3 July 1956 Menzies repeated his concerns to British authorities that Australia did not possess nuclear weapons and was worried about the problem of local wars and 'piecemeal advance' by communist China, Eden responded by stressing that 'the emphasis now should be on maintaining the deterrent... The realities [were] the same in the Middle East and the Far East. Mobility would be increasingly important and the UK intended to maintain a reserve which could be flown out at short notice.'<sup>99</sup>

On 24 July 1956 the secretary of the Australian defence department, Frederick Shedden, received word from Air Vice Marshal V. E. Hancock, Australian joint services staff in London, that Britain had decided to have a nuclear capability in the Far East. It was also informally communicated to Hancock by 'one contact' that this was to be independent of the US. Britain, he was told, would want to have this capability to preserve its status as a world power. More than that, a recent planning paper suggested that V class bombers should be stationed in Malaya and be 'supported from a base in Malaya'.<sup>100</sup> Two days later, 26 July 1956, Nasser nationalized the Suez canal.

Suez coincided with Britain's ability to deploy its strategic airforce, and there was an immediate prospect that this would soon be equipped with atomic weapons. British defence policy in 1956 was based on the nuclear deterrent and Australia followed suit. In September the Australian defence committee concluded that there was an increasing emphasis on nuclear weapons and that

It is of vital importance from Australia's point of view that China be considered a Soviet

<sup>97</sup> Arnold, *A very special relationship*, p. 159.

<sup>98</sup> W. J. Hudson, *Blind loyalty: Australia and the Suez crisis, 1956* (Melbourne, 1989), p. 7.

<sup>99</sup> AA A1209/23, 57/5293, part 1, PMM(D)(56) 1st meeting, 3 July 1956. The next day the British secretary for air stressed the need for an Indian Ocean military air route. The first Canberra squadrons had been deployed to the Baghdad pact in May. Wynn, *RAF nuclear deterrent forces*, pp. 124, 138.

<sup>100</sup> AA A816/52, 14/301/734, Hancock to Shedden, 24 July 1956.

ally and subject to nuclear attack ... in limited war Allied strategy will involve nuclear weapons against Chinese or Vietminh aggression ... Australia could be called upon to support the strategy of the Western powers.<sup>101</sup>

On 1 October 1956 the secretary of state for commonwealth relations warned his cabinet colleagues that Menzies was apprehensive about British intentions to defend Malaya in the event of war and that the great fear of the Australians was the possibility of limited war breaking out in South-East Asia in which nuclear weapons would not be used.<sup>102</sup> On 1 November 1956 Menzies cabled Eden stating that

There is plenty of room for frank exchanges and a right of British countries to maintaining independent views and to persuade the Americans that these views are right ... What many people fail to understand is that the best way to avoid a major conflict is to be completely firm about smaller ones. My thoughts are with you. You must never entertain any doubts about the British quality of this country.<sup>103</sup>

Menzies's views on the 'right of British countries' and the possibility of tactical nuclear weapons in small conflicts provide an interesting backdrop to the Suez crisis. Ultimately, Australia's support for Britain was diplomatic.<sup>104</sup> He was prepared to go even further, telling Lord Home before the mission that Australia would be 'in this with the UK' and even suggested that air forces might be sent.<sup>105</sup> Australia played its part in the Suez affair in the same spirit as it had participated in the joint project and the Maralinga tests. And with the same end in mind.

It was against this background that the proposal to request atomic weapons from Britain took shape. On 12 September 1956 Arthur Townley, minister for air, wrote to McBride noting that by 1957–8 RAAF Canberra bombers were to be deployed as part of the strategic reserve.<sup>106</sup> The problem was, Townley complained, that the Canberra lacked hitting power, since it could only carry 6,000–8,000 lb of bombs, thus requiring a large number of sorties. He noted, however, that 'RAAF Canberras can carry a nuclear weapon' but that 'it may be many years before Australia can produce these'.<sup>107</sup>

The defence committee agreed that the availability of nuclear weapons would be of considerable importance, should Australia need to defend the north-western approaches, especially if Britain and the US were tied up elsewhere.<sup>108</sup> Britain, it advised, should be asked, because of the US restrictions on communicating data, whether it would allow Australia to develop atomic

<sup>101</sup> AA A816/31, 14/301/713, JPC, 19 Sept. 1956; submission 522 and decision 656, 22 Feb. 1957.

<sup>102</sup> PRO CAB 131/17, DC(56)24, 1 Oct. 1956.

<sup>103</sup> PRO DO35/6336, cable 2545, Menzies to Eden, 1 Nov. 1956.

<sup>104</sup> W. Scott Lucas, *Divided we stand: Britain, the US and the Suez crisis* (London, 1991), p. 186.

<sup>105</sup> Hudson, *Blind loyalty*, p. 70.

<sup>106</sup> AA A1209/23, 57/4067, letter, Townley to McBride, 12 Sept. 1956.

<sup>107</sup> AA A1209/23, 57/4067, 'Nuclear weapons for the Australian forces'.

<sup>108</sup> The joint intelligence committee advised that Australia would be vulnerable to missiles which could be launched from Timor and from Soviet bomber bases in Antarctica. AA, A816/31, 14/301/713, JIC(M)(56)35.

weapons because of the Australian contribution to the joint project.<sup>109</sup> This advice formed the basis of McBride's instruction to Casey in March 1957, in which he concluded that exploratory negotiations take place with British defence officials.<sup>110</sup>

The Bermuda conference, however, delivered the fatal blow to any nuclear role that Australia might have assumed. US secretary of state John Foster Dulles optimistically told delegates there that, if the USSR accepted disarmament proposals, then the nuclear arms race could be halted, which would mean that NATO would not be extended to include others, such as Australia. Dulles argued in terms of NSC policy on the provision of nuclear weapons as an 'integral part of the arsenal of the Free World'. The 'fourth country' problem was to be treated in terms of the NSC approach to the provision of nuclear weapons, i.e. first, the combined US–Canada air defence programme; secondly, the UK IRBM; thirdly, the NATO new weapons programme.<sup>111</sup>

Eisenhower had no great plans for Australia. He accepted a report after Bermuda entitled the 'Development of a defense production base in Australia and New Zealand' which concluded that, 'In the event of general nuclear war' the Australian–New Zealand area was unlikely to be of great value as a logistic and production base.<sup>112</sup> It was against this background that the Australians signed a defence agreement with the US on 12 July 1957. The terms provided for the training of personnel in the 'employment of and defence against atomic weapons' and also the 'evaluation of capabilities of potential enemies in the employment of atomic weapons'. The agreement spelt out that there would have to be strict security of atomic information, but the US gave no firm commitment to providing Australia with nuclear arms.<sup>113</sup>

Menzies advised parliament on 19 September 1957 that Australia 'at present' had ruled out plans to produce nuclear weapons, the reason being 'the modern attitude of the US'. He noted that, while there was a receding chance of global war, there was still a risk of 'more limited operations' and that in determining Australia's contribution to collective security in South-East Asia 'the chances are that jungle fighting will be involved'.<sup>114</sup> By a curious coincidence Nevil Shute's novel *On the beach* replaced *Peyton place* on the bestseller list in 1957. The point of significance for Australian audiences was that they lived in the relatively safer haven provided by the southern hemisphere. Nuclear holocaust would be played out in the north; the Tasmanians would be the last to go.<sup>115</sup>

<sup>109</sup> AA A1209/23, 57/4067, 'Nuclear weapons for the Australian forces'.

<sup>110</sup> AA A1209/23, 57/4067.

<sup>111</sup> NSC meetings, 309 (11 Jan. 1957); 319 (11 Apr. 1957); 325 (27 May 1957) *FRUS*, xx (1955–7), pp. 403, 474, 479, 499.

<sup>112</sup> NARA, RG59, box 2504, file 0051.

<sup>113</sup> PRO EG1/152, press release, 12 July 1957.

<sup>114</sup> *New York Times*, 20 Sept. 1957; *CPD*, 16 (19 Sept. 1957), p. 798.

<sup>115</sup> P. Pringle and J. Spigleman, *The nuclear barons* (New York, 1983), p. 247.

## V

Nuclear weapons provided Australia with a deterrent against their far more numerous Asian neighbours, especially in the event that Australia would find itself isolated as had nearly been the case in the Pacific war. They were the price of the Maralinga tests, the high point of the Anglo-Australian atomic alliance. The Bermuda conference, however, saw the partial restoration of an even more important relationship as far as Britain was concerned.

Australia had been an invaluable part of Britain's deterrent programme as long as the US refused co-operation. It provided scarce raw materials and scientific manpower. The dangers associated with early production of plutonium would be alleviated by the construction of water-moderated reactors in the southern Dominions. A future system of fast breeder reactors would see Britain not only assured of plutonium supplies but also of a market for power reactors. Australia had a particular importance in that it hosted the testing ranges for the deterrent. In the event of nuclear war the British were assured a measure of protection by the distribution of its forces throughout the empire. Britain's acquisition of deterrent weapons after 1957, however, saw the end of co-operation on atomic weapons and delivery systems with its empire partners. Thereafter, the Australians were left to explore the dimensions of a relationship with the US, a power that had always zealously protected its monopoly over its 'winning weapon'.