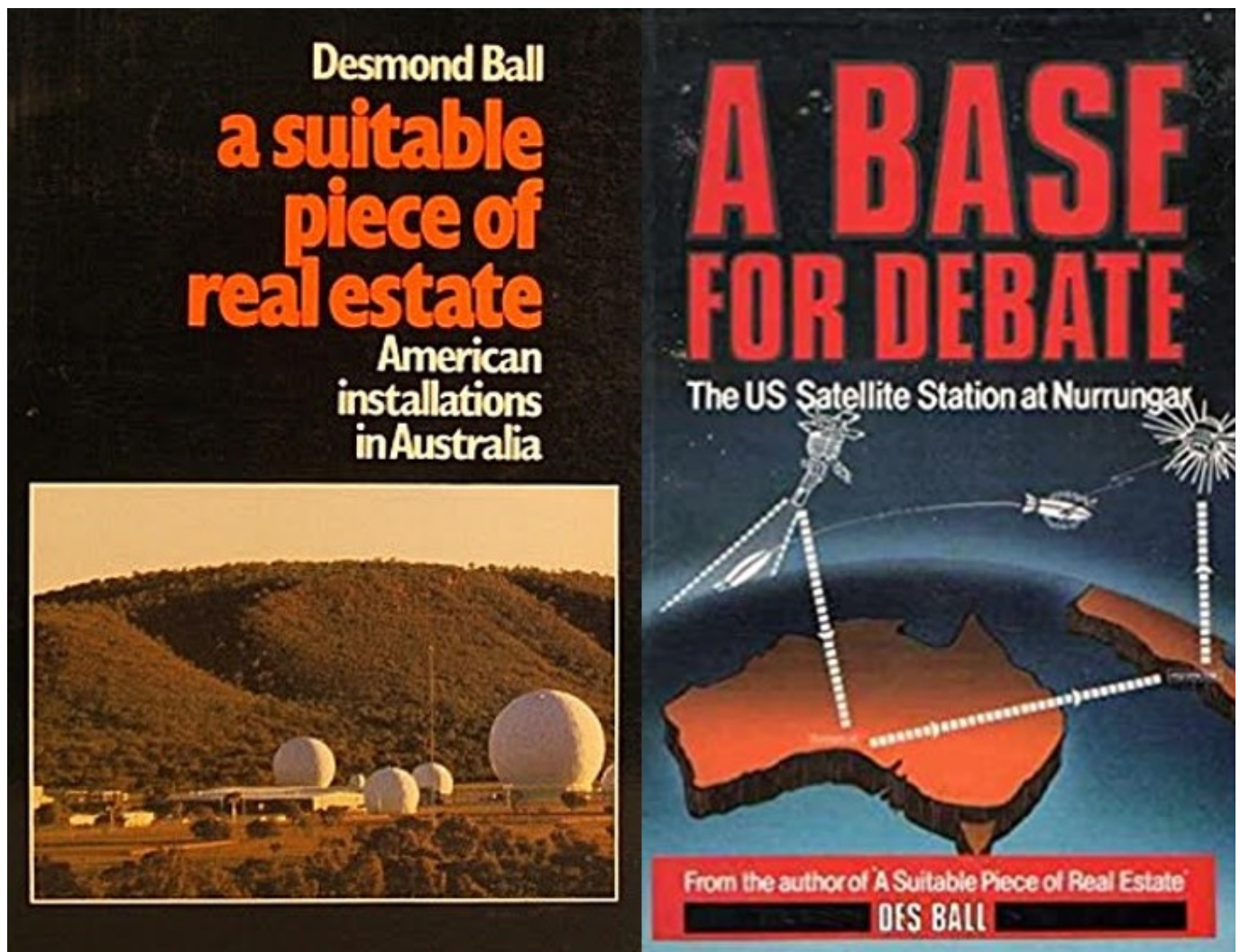




MYSTIFYING PINE GAP, DISTORTING DES BALL: NOTES ON BRIAN TOOHEY'S SECRET: THE MAKING OF AUSTRALIA'S SECURITY STATE



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I. INTRODUCTION

In this essay, Richard Tanter argues that Brian Toohey misrepresents Ball's arguments concerning Pine Gap as well as misstates or misunderstands other important factual aspects of the debate about the role of the Pine Gap facility.

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The views expressed in this report do not necessarily reflect the official policy or position of the Nautilus Institute. Readers should note that Nautilus seeks a diversity of views and opinions on significant topics in order to identify common ground.

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Banner image: Desmond Ball, ANU

II. NAPSNET POLICY FORUM BY RICHARD TANTER

MYSTIFYING PINE GAP, DISTORTING DES BALL: NOTES ON BRIAN TOOHEY'S SECRET: THE MAKING OF AUSTRALIA'S SECURITY STATE

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Brian Toohey's book *Secret: The Making of Australia's Security State* is an important book. Toohey's range is so broad that few reviewers writing today could match his breadth of field and properly assess Toohey's powerful writing on all these topics. This has left most reviewers in the understandable but not entirely helpful position of confining themselves to repeating a selection of Toohey's many startling stories of appalling Australian government behaviour, and praising, as does Geoffrey Robertson, 'Toohey's rambunctious account of 70 years of cockup and cover up'. There is much to admire and learn from in *Secrets*. Those of us concerned with most of the issues the book

covers have long been in Toohey's debt.

A selective frame for Pine Gap / distorting Des Ball

Toohey's main treatment of Pine Gap is in two chapters on titled 'The Men who spread the fairy-tale about arms control' and the 'The men seduced by the secrets'.

Toohey's explicit main target in both chapters is Desmond Ball, the person who over four decades told us in authoritative detailed research and collaboration with journalists and activists about Pine Gap and the other US bases that he saw as so dangerous and inimical to both the Australian national interest and the global human interest.

Despite having an extraordinary record of national security reporting, including on Pine Gap, Toohey makes important mistakes about Pine Gap, adding to the mystification that surrounds the nature and function of the base, whether promulgated intentionally by government, or deriving from the complexity of its multiple systems of surveillance, or simply from the numbing mystique of the 'secret'.

Moreover, by selective quotation and ignoring context Toohey presents Ball as at best a useful idiot seduced by the allure of access to secrets into facilitating the US and Australian deceptions about Pine Gap.[\[1\]](#)

What happens at Pine Gap?

To begin with, it is first worth recalling that Pine Gap today carries out two broad types of surveillance, using, in cartoon terms, big ears and big infrared eyes. These currently involve three distinct systems of surveillance involving antennas, satellites, and global command and control systems: firstly, space-based interception of electronic transmissions from the ground, at sea, in the air; secondly, and conversely, ground-based interception of electronic transmissions from satellites in space; and thirdly, space-based detection of infrared radiation from the heat blooms of missiles, aircraft, and explosions. For the purposes of this discussion, the Relay Ground Station at Pine Gap for automatically relaying downlinked data from the DSP and SBIRS infrared satellites to their Colorado control station can be set to one side.[\[2\]](#)

Toohey's principal concern is with the primary (and original) surveillance system at Pine Gap - its role as a command and control and data downlink connection to very large surveillance satellites in geosynchronous orbit 36,000 kms above the equator, covering most of the world's surface from the longitudes of the mid-Pacific to eastern Africa. Primary antennas a hundred meters or more in diameter and a forest of smaller ones on six tonne signals intelligence collection satellites detect and intercept even faint transmissions from a great range of electronic transmissions. The data of the intercepts is downlinked in encrypted form to Pine Gap (and potentially to other sites), where it is decrypted, processed, and analysed into intelligence for many different purposes.

In the mid-1960s the Central Intelligence Agency originally designed the system of fabulously expensive geosynchronous signals intelligence satellites and their ground stations for one particular purpose: intercepting the telemetry transmitted from Soviet missiles in test flights back to their designers, thus supplying the US with information on its enemy's capabilities, and helping to design their own next steps in response. From the beginning the US military insisted on a secondary package on the SIGINT satellites to intercept signals more relevant to their needs than missile telemetry. The US Air Force and the then young National Security Agency fought a long bureaucratic turf war against the CIA's priority for telemetry, and eventually won out. Over half a century later, the primary functions of Pine Gap are heavily weighted towards the US military's war-

fighting needs - both for nuclear war and for US 'combatant commands' worldwide, but still include watching ballistic, cruise and hypersonic missile development in Russia, China, North Korea, Iran, and India, as well as in nominal US allies like Israel, Pakistan, Japan, and South Korea.

Pine Gap's role of intercepting test missile telemetry for intelligence purposes also provided the possibility of supplying the US with the technical capability to verify aspects of US-Soviet Union bilateral arms control agreements - and with that capability, help build domestic political confidence to trust that arms control would be adhered to.

For Nurrungar and Northwest Cape, Ball was quite clear that in balancing the advantages and disadvantages for Australia, and in terms of contributing to inhibiting nuclear catastrophe for the world, the bases should simply be closed forthwith. But writing in the first three and a half decades of Pine Gap's operation about the manifold dangers of hosting the base in both national security terms and global human security, Ball argued that the lack of politically viable project of nuclear abolition meant that there was no short-term alternative but to support arms control initiatives, especially in the extraordinarily hostile domestic US environment of the Carter-Reagan years of the Second Cold War.[3]

All the while, Ball directly and practically helped Australian peace movement groups opposing Pine Gap, and continued to document prolifically and vividly both the dangers of Pine Gap and the Australian government's pattern of deceiving the public about its true role. But Ball also continued for many years to say that the possibility of Pine Gap contributing to verification of nuclear arms control agreements had to be taken into account.

For Toohey, Ball here was knowingly facilitating Australian governments lies - because, he argues, there was no arms control role for Pine Gap, and Ball was a man 'seduced by secrets', spinning 'the fairy-tale of arms control'.

Four problems of evidence

Let us look at evidence Toohey adduces for four of these claims.

Problem no. 1: 'The biggest secret about Pine Gap'

Toohey: 'The biggest secret about Pine Gap is that it is essentially irrelevant to verifying compliance with arms control agreements...Pine Gap's satellites only provide information about a particular missile tested - the total number deployed is the central figure for arms control.'

To prove Ball was wrong about Pine Gap and arms control agreement verification, Toohey quotes extensively from a brief June 1979 article providing an 'authoritative explanation' about verification of the Second Strategic Arms Limitation Treaty (SALT II) by the former Deputy Director (Research) at the CIA, Herbert 'Pete' Scoville to make an argument about the irrelevance of signals intelligence in general - and Pine Gap in particular - to verification requirements.[4]

Here, Toohey is in 'gotcha' mode, relying almost solely on Scoville's prestige and intelligence career roles to convey authority to Toohey's contradiction of Ball. This leads Toohey astray on the Scoville comments on verification of the SALT II treaty - and consequently on the role of signals intelligence about telemetry in many, though definitely not all arms control agreements.

Toohey writes (p.111):

'A few months later a former deputy director of the CIA, Herbert Scoville, gave an

authoritative explanation about why the subsequent loss of the telemetry from the Iranian listening posts (called Tacksman I and II) didn't matter for arms control. Scoville, who was in charge of analysing the telemetry data from Iran, said intelligence gathering was not synonymous with treaty verification. He said photographic images from low-orbiting satellites were the crucial verification tool: "They have little difficulty recognising all the weapons covered by the arms control agreements, such as land and sea-based launchers and heavy bombers. Satellites can now locate, count, and measure modern weapons from 100 miles [160 km] away." His [Scoville's] article also explained that the US had extensive facilities to observe tests of all multiple independently targetable re-entry vehicles (MIRVs) carrying warheads as they moved towards their target zone in the Soviet Far East or the Pacific Ocean: "Radar receivers and infra-red sensors on ships [and] planes and on land can determine the characteristics and the number of warheads they carry." Advances in long-range optical sensors and other devices have since reinforced this capability.'

Here Toohey is quoting from Scoville making a public case for Senate ratification of the second Strategic Arms Limitation Treaty (SALT II), which after years of negotiation had been signed by Presidents Carter and Brezhnev on the same day Scoville's article appeared. The Iranian Revolution earlier that year had led to the closure of two CIA listening stations in Iran that had been tasked with, among other things, intercepting missile telemetry from launches at Tyuratam. Scoville was aiming to assuage Congressional fears that the loss of the CIA's Iran listening posts would undermine the ability of the US to verify Soviet missile limitation commitments in the new treaty.

America's overhead photographic reconnaissance satellites would do the job even in the absence of the Iranian stations, Scoville wrote, together with the infrared sensors on the early warning satellites (for which Nurrungar was a ground station). In addition, Scoville said, there are radar and other electronic sensors in the Aleutian Islands,

'highly instrumented ships and special aircraft equipped with cameras, infrared sensors, radio receivers, and other devices. These provide a wealth of information on what can reach a target, which is, after all, what counts.'[\[5\]](#)

All in all, Scoville assured arms control sceptics, the loss of the Iran electronic spy bases would not get in the way of verifying the SALT II treaty.

So, does Toohey's use of Scoville bear any relationship to historical reality? The evidence suggests otherwise.

Firstly, reading Scoville four decades later, there is something immediately strikingly absent from his quick tour of the intelligence sensor horizon: there is no mention of American signals intelligence satellites in Scoville's list, even to dismiss their salience for the SALT II treaty. This may seem odd today when so much is known about them, mainly because of the work of Ball and Jeffrey Richelson. The 1977 espionage trial of Christopher John Boyce (and the subsequent 1979 book *The Falcon and the Snowman* by Robert Lindsey) revealed to the US public (and through Toohey and his colleagues, to the Australian public) the existence and some of the capacities of the RHYOLITE satellites and their ground stations.

In fact, Scoville knew far better than most outside (or even inside) government in the late 1970s about the intelligence role of SIGINT satellites and their potential to address particular verification issues. It was Scoville's immediate successor in the CIA's technical research directorate, Albert Wheelon, who invented and drove the CIA's SIGINT geostationary signals intelligence satellite enterprise that delivered the RHYOLITE / AQUACADE constellation, with Pine Gap as the key ground station.[\[6\]](#) After leaving the CIA in 1963 Scoville became assistant director of the Arms

Control and Disarmament Agency. In that position alone, Scoville would have known of the capacities of the geosynchronous SIGINT satellites.

In fact, it was no accident that while writing in public in 1979 Scoville omitted reference to US SIGINT satellites. The US government formally regarded the simple fact of collection of signals intelligence from space as top secret, until the Clinton administration declassified 'the fact of' overhead signals intelligence satellites.^[7] As a former CIA deputy director, and later assistant director of the Arms Control and Disarmament Agency, Scoville was under severe constraints about what he could say publicly on these matters. And as Toohey rightly notes elsewhere, informed official sources had no compunction about misdirection in public statements. Scoville was leading senators well away from any public embarrassing questions which might have led to the capabilities of the RHYOLITE satellites and Pine Gap.

Secondly, there is another but somewhat more reliable official historical account. One of the main US intelligence agencies tasked with ensuring verification of the treaty commitments by the Soviet Union could be reliably assured saw the SALT II treaty verification requirements as 'a nightmare'. The National Security Agency described the SALT II treaty as 'one of the most complex [arms control] treaties the U.S. had ever signed, and many of its clauses required verification'. According to the NSA's secret official history, SALT II was 'a nightmare for the intelligence agencies expected to verify its terms'.

And far from signals intelligence being irrelevant to the verification requirements of the SALT II treaty, the NSA believed 'telemetry was critical to verification'. In theory, missile telemetry could be intercepted from a number of platforms – aircraft, ships, or ground stations like the lost Iranian stations – but for intercontinental ballistic missiles and submarine-launched ballistic missiles the RHYOLITE satellites and their successors were the primary source for the NSA, which increasingly got the lion's share of the signals intelligence product from the satellites.

Of course, an official history, especially on matters involving intelligence and nuclear war, cannot be taken as the last and unbiased word. The NSA secret history, replete with censored words, paragraphs and whole pages in virtually every chapter in its 500 closely printed pages, needs to be construed carefully in places – especially on its version of institutional rivalry with the CIA on satellite ownership and tasking.

In the case of SALT II negotiations, the NSA history makes clear that Scoville's public avoidance of reference to the utility of space-based SIGINT collection for verification purposes amounts to misdirection, mocking the idea that overhead imagery alone could do the job for the complex verification requirements of SALT II:

'How, for instance, would verification determine how many warheads a MIRVed missile carried? Photography could not see into the missile silo... There were similar rules defining types of missiles, depending largely on range and payload, and these depended on SIGINT for verification. Telemetry from missile tests was vital to determine both facts and, on occasion indicated that new missile capability might exceed the limits (prohibited in the draft treaty) or simply a modification of an older type (permitted)...The arguments were not confined to missiles but also pervaded bombers, submarines, and cruise missiles. Would the Backfire bombers, employed in a theater role by the Soviets, be counted in the strategic mix?'^[8]

Eventually, so critical was the role of signals intelligence (amongst other sources) for verification of SALT II, the treaty's formal 'common understandings' explicitly prohibited denial of telemetric information needed for verification.

In the SALT II case that Toohey chooses to buttress his case of Ball's 'fairytale', he gets the facts wrong – seriously so.

Problem no. 2: Apples and oranges: different verification requirements for different treaties.

Depending on the weapons systems to be regulated, signals intelligence, from whatever source, may or may not be useful or even necessary or even useful for verification purposes. Toohey opens his chapter on the arms control fairy-tale with a 2010 quotation from an informed source: the US Defense Secretary testifying to Congress about the New START treaty that

'The US does not need telemetry from Russian missile flights to verify Russian compliance with the New START treaty.'[\[9\]](#)

Toohey is fond of this quote, using to rhetorical effect twice in two pages, as an epigram for the chapter, and to bookend his use of Scoville's account.

Surely there could be no better authority for the foolishness – or worse – of anyone who thinks intercepting telemetry could possibly be relevant to arms control? Is Toohey right?

The New START treaty entered into force in 2011, and will expire in 2021, unless it is extended by the US and Russia. In fact, Toohey draws an incorrect inference from the Gates remark, mainly by not recognising the context in which Gates uttered this sentence – a matter of selective quotation.

Gates' 2010 testimony to Congress from which Toohey's quotation is actually drawn, Gates, together with voluminous confirmation by the Secretary of State Clinton, the chair of the Joint Chiefs of Staff, and numerous other US officials at the same session, made very clear that telemetry was indeed not required for verification of New START for a simple reason, and one ignored by Toohey.[\[10\]](#) As the State Department wrote concisely in support of Gates' and Clinton's remarks, the objects of arms reduction in New START differed from those of earlier treaties such as the 1994 START treaty (or the much earlier SALT II), which did require telemetry for verification of compliance:

'The obligations in the New START Treaty are different from those in START. None of the new Treaty's specific obligations, prohibitions, or limitations requires analysis of telemetric information to verify a Party's compliance. For instance, the Treaty does not limit the development of new types of missiles, so there is no requirement to determine the technical characteristics of new missiles such as their launch weight or throw-weight in order to distinguish them from existing types.'[\[11\]](#)

Again, Toohey presents an argument from a claim to authority, that turns out to be specious when the history is more closely examined.

Problem no. 3: Toohey: 'A glance at the map'

In a similar way, Toohey is dismissive of Ball's claim that one reason why Pine Gap was originally located in the centre of Australia derived from a need to prevent Soviet interception of the signals it was downlinking. Toohey writes (p. 117):

'A quick glance at a map rebuts Ball's claim that Pine Gap's isolation in the middle of Australia was essential to preventing adversaries getting close enough to eavesdrop on its satellite down links: the US-UK signals intelligence base at Menwith Hill has links to geo-synchronous satellites similar to Pine Gap's, yet it is in North Yorkshire in a particularly narrow part of the British Isles that is readily accessible to hostile eavesdroppers onshore and offshore.'

On the question of geographical constraints on the location of the base, Toohey cites my 2012 paper as his source for Ball's claim. The relevant paragraph reads:

'The size of the area that needs to be secured against adversary interception is, Ball wrote, a function of the transmission frequency and the diameter of the downlink antenna on the satellite. When the geosynchronous SIGINT satellite constellation was planned in the mid-1960s, these were about 24 GHz and 2.5 m. respectively, yielding a requirement of a secure area of about 160 km in diameter. Accordingly, downlinking to small islands such as Diego Garcia or Guam would have been too vulnerable to interception by Soviet SIGINT-equipped ships or aircraft, and crowded land areas in the Philippines or Japan unable to be protected against covert interception system in nearby areas.'[\[12\]](#)

How, Toohey implies, could Ball have been so foolish?

In fact, a quick glance at an actual map shows that it is Toohey who is, in this case, simply wrong. A circle 160 km in diameter centred on RAF Menwith Hill almost entirely covers terra firma, bar a sandy estuary. MI5 would have had no trouble finding the big antennas required for interception at that time in the countryside of Yorkshire or the Midlands cities eysham and Grange-over-Sandslike Leeds or Manchester. The single watery exception lies on the western side of England at the small bay at the mouth of the River Kent. There the last three or four kilometers of the 80 km radius west from Menwith Hill to the sea is covered in the mudflats and shoals of Morecombe Bay in Cumbria between Heysham, Bolton Le Sands and the accurately named Grange-over-Sands, all well enclosed within British territorial waters. Soviet spy trawlers just outside territorial waters would worry a ground station on US military colonies like Diego Garcia or Guam, but not in the case of Menwith Hill or Pine Gap.[\[13\]](#)

Interestingly, Toohey misses the more important argument as to why that geographical requirement is now obsolete. The geographical technical requirement from the 1960s for locating the ground stations for SIGINT satellites in isolation in central Australia no longer applies. For at least three decades downlinks from US geosynchronous signals intelligence and early warning satellites to Pine Gap have been encrypted, obviating the earlier technical limitation. Pine Gap could be moved today with no impact on genuine US concerns on space-based signals interception or thermal imaging.

Figure 1. 160 km diameter circle from Menwith Hill



Constructing a straw man: Australian cities as nuclear targets

Toohey uses selective quotation to construct a straw man of Ball as a fool (or worse) who, unlike even government scientists, would not recognise that the Soviet Union was likely to attack Australian cities, or that British nuclear tests in the 1950s had wafted radioactive fallout across Australia.

Toohey pits the straw man Ball against R.H. 'Bob' Mathams, Director of Scientific and Technical Intelligence in the Joint Intelligence Organisation until 1979.

Writing about testimony by Mathams and Ball to the Committee on Foreign Affairs and Defence inquiry into *Threats to Australia's security: their nature and probability* Toohey writes:

'Ball told the parliamentary committee in 1981 he had no doubt whatsoever that the Soviet Union would target Pine Gap, Nurrungar, and North West Cape, and told the committee he didn't like the idea of nuclear bombs falling on Australia, but that "I cannot imagine any scenarios involving nuclear bombs falling on Australian cities." Ball didn't mention that the Soviet warheads were far more powerful than the bombs the British had tested in Australia. Yet the radioactive fallout from the British tests spread across large areas of Australia. Unlike Ball, senior intelligence analyst Bob Mathams told the same committee that the JIO considered the Soviets able to target Sydney with a nuclear missile. [10]' [\[14\]](#)

Here Toohey is overreaching, cherry picking out of context to prove a nonsense.

On the question of Soviet targeting of Australia there is in fact no contradiction between the two actual statements by Ball and Mathams that Toohey quotes from selectively. Both quotations, taken in themselves, are correct.

Who could have denied that in the 1970s or the 1980s the Soviet Union could accurately target a city the size of Sydney? What the probabilities were of the Soviet Union doing so was entirely another matter in 1981, as it remains today regarding Russia and China. The real issue was the assessment of the likelihood and priority of direct targeting of Australian cities by the Soviet Union.

Ball's point, clearly evident in the full quotation in the committee final report was that there was a low probability that the Soviet Union would target Australian cities, and that there was little to be gained (and, he might have said, a lot to be lost, politically) by unwarranted exaggeration of the threat to cities.

The transcript of Ball's evidence makes the intent and full character of Ball's testimony on this point quite clear. Responding to a question from Clyde Holding about the possibilities of attacks on the three bases, Ball described recent work he had been carrying out on two projects for the International Institute for Strategic Studies, both of which led him to conclude that the three bases would be high priority Soviet targets. One project concerned 'the survivability of command-and-control systems in a nuclear war', and

'the second project involved an analysis of targeting - how one goes about selecting targets. In doing both of those projects I had very extensive discussions in the Pentagon, the White House, with intelligence agencies and a number of other organisations in the United States. I have no doubt in my mind whatsoever that those three installations would be targeted by the Soviet Union. However, that should not be the whole point of the question.

'At least three other issues should be addressed. One is that whilst they would be targets in

the event of a nuclear war, I do not see a nuclear war as being very likely. One could argue that the existence of these installations deters the outbreak of a nuclear war. But one still has to come to the conclusion that if a nuclear war does come those stations are going to be targeted.

‘A second point is that the consequences of them being targets really are not so great. I do not like the idea of nuclear bombs falling on Australia, but the vision that some people have of what it would involve seems to be quite exaggerated. I cannot imagine any scenarios involving nuclear bombs falling on Australian cities. It seems that one draws the line at those three installations, but one has to include those installations as targets.’[\[15\]](#)

The final report of the Joint Foreign Affairs and Defence Committee inquiry quotes Ball extensively, as well as Mathams, on the high probability of Soviet nuclear targeting of Pine Gap, Nurrungar and North West Cape, and makes clear that it accepted Ball’s and Mathams’ conclusions against the dissembling of the Defence Minister, Mr. Killen.[\[16\]](#) The committee’s report quotes Mathams’ views on the issue of nuclear targeting of Australia twice, including quoting an extract from his committee testimony.[\[17\]](#) The committee report goes on to present Mathams’ position in a separate quotation from Mathams’ chapter on ‘Strategic Weapons and Their Effects’ in a 1978 Defence Department review of civil defence:

‘In descending order of probability, Australia might receive strategic nuclear attacks against: US facilities in Australia; Australian defence establishments; industrial complexes and urban centres.’[\[18\]](#)

This, however, is not what Toohey has Mathams as saying:

‘Unlike Ball, senior intelligence analyst Bob Mathams told the same committee that the JIO considered the Soviets able to target Sydney.’

Here Toohey is constructing an unsupported inference that Ball was unconcerned about the possibility of Australian cities as Soviet nuclear targets, and Ball was ‘unable to imagine’ bombs falling on Australian cities.

In their original context, both Ball and Mathams clearly assert, in Mathams’ words, that ‘in a descending order of probability’, cities are the least likely targets after the bases and other defence facilities. Both gave clear strategic reasons for their shared ordering of likely Soviet priorities. Some might have wanted to argue against that order of probability, but contrary to Toohey’s spurious construction of opposition, Ball and Mathams were in agreement on the issue of Australia as a target.

The evidence from Ball and Mathams on this issue actually quoted in the final report of the parliamentary inquiry made quite clear that both were addressing the question of likelihood of priorities in attacks on Australian cities. The committee report concluded that the answer to the question of Australian targets other than those at the three bases, especially cities, was ‘probably No’.[\[19\]](#)

The sense that Toohey is often over-reaching conveyed by selective quotations and unsubstantiated interpretations of Ball’s views is compounded by the sentence following Ball’s remark about not being able ‘imagine any scenarios involving nuclear bombs falling on Australian cities’.

Toohey writes:

‘Ball didn’t mention that the Soviet warheads were far more powerful than the bombs the

British had tested in Australia. Yet the radioactive fallout from the British tests spread across large areas of Australia.’[20]

Toohey’s concern to attack Ball here leads him to slide from a discussion of Soviet nuclear targeting of the bases to the undoubted possible nuclear fallout on cities across the continent as a result of attacks on the bases – not attacks on the cities as such. Toohey implies either that Ball had either not considered the possibility of attacks on Australian cities, or was unaware of the radiological consequences of the British tests on Sydney and Adelaide, or simply lacked the human capability to conceive of the nature of such an event.

Mathams was in fact ‘a good friend to the [Strategic and Defence Studies] Centre’, a member of its Advisory Board, and a close colleague of Ball and J.O. Langtry in their six years work of leading up to the 1982 ANU conference on *Civil Defence and Australia’s Security* that resulted a year later in their edited book *Civil Defence and Australia’s Security in the Nuclear Age*. [21] In our 2016 study *Australian participation in the Pine Gap enterprise* Ball, Robinson and I discussed Mathams’ role in the foundation and operation of Pine Gap, and noted that:

‘With the first Rhyolite satellites having become operational, he effectively became the chief Australian interlocutor with the CIA concerning Pine Gap. He received the CIA’s Distinguished Intelligence Medal in 1980 for “high dedication, expertise and tireless effort on behalf of his own government in the field of scientific and technical intelligence, but which also greatly benefited the US”.’ [22]

Ball’s 1983 chapter on ‘Limiting Danger from Nuclear Attack’ remains the single most authoritative assessment of the probabilities, scenarios, and physical and health consequences of nuclear attack on Australia to date. [23]

Mystifying Pine Gap

The great pity of Toohey’s *Secrets* is not so much his traducing of Des Ball, although the fact that he published after Ball’s death leaves a bad taste in the mouth. In the end the more serious consequence is that despite his considerable skills Toohey has further muddied the always murky waters of Pine Gap media commentary, making the government project of mystification of the base a little easier.

‘All journalism simplifies’ goes the old saying; ‘but which story gets simplified remains the key.’ But Pine Gap is complex. Why would we expect the analysis of the largest US intelligence base outside the United States itself, built and maintained by the US at fabulous cost over more than half a century, a critical element in its nuclear domination of the rest of the world, dependent on the collusion – willing when it is not suborned – of the Australian government, to be readily amenable to short form explanation without gross distortion?

Beyond the Joint Defence Facility Pine Gap

Ball’s reluctant public acceptance of Pine Gap was, as he well understood, of great convenience to the Hawke and subsequent governments that sought to defend the hosting of the bases against the resurgent peace movement of the time. But his position was by no means either absolute or unchanging.

In a 2012 piece about Ball’s work, I wrote:

‘It is clear that the role of space-based US signals intelligence in arms control treaty verification is not a constant matter. To that extent, Ball’s assertion to the effect that “whoever

says arms control, says Pine Gap” is not an ahistorical absolute, and will be less or more compelling depending on the global state of nuclear confrontation, proliferation, and arms control regimes. The historicity in turn changes the weighting of the balance of costs and benefits of Pine Gap (and once again, North West Cape) in the questions Ball set out in the 1970s, and which...need periodic reformulation and reassessment beyond acceptance of the maintenance of stable nuclear deterrence as conceived of in the 1980s.’ [24]

By the late 1990s and early 2000s Ball was concerned about the tilt in the balance of Pine Gap’s operations towards warfighting and missile defence, and the collapse of serious arms control efforts epitomized by the US withdrawal from the Anti-Ballistic Missile Treaty in June 2002. In 2006, four non-violence activists from the group Christians Against ALL Terrorism broke into Pine Gap to protest against the base’s role in the American wars in Iraq and Afghanistan. Facing serious prison sentences, they asked Ball for help in their court case the following year.[25]

We were deep into the early stages of work on Japanese and US electronic intelligence in Japan, and the degree of its integration into – and partial autonomy from – the global US signals intelligence regime. We were initially sceptical about the activists’ claims about the base’s Middle Eastern warfighting role, but when we began to prepare for my planned expert witness testimony in the Alice Springs trial it became clear that the activists were right, and that the great transformation of the base from national-level strategic intelligence to real-time intelligence support for US military combatant commands was well underway.

That set our Pine Gap research agenda for the next decade, together with the Canadian SIGINT researcher Bill Robinson, and involved frequent exchanges of documents and discussions with Jeffrey Richelson at the National Security Archive, Ball’s co-author of *The Ties that Bind* on the Five Eyes intelligence relationships and co-editor of their collection on *Strategic Nuclear Targeting* (1986).

By the mid-2000s Ball recognised that Pine Gap was changing dramatically in many ways, but most importantly the base was providing almost real-time support to US military and CIA operations worldwide in addition to its ongoing and expanded role in nuclear weapons planning and operations. In August 2014 Ball told *7.30 Report*’s Dylan Welch of the shift in his views about Pine Gap that began a decade earlier:

‘I’ve reached the point now where I can no longer stand up and provide the verbal, conceptual justification for the facility that I was able to do in the past. We’re no linked in to this global network where intelligence and operations have become essentially fused and Pine Gap is a key node in that whole network, that war machine, if you want to use that term, which is doing things which are very, very difficult, I think, as an Australian, to justify.’[26]

One of the dissatisfying aspects of Toohey’s treatment of the bases in *Secrets*, despite his contribution in other parts of the book, is that he never really goes beyond a list of Australian and US government perfidies and scandals, and relies overmuch on what too often turn out to be inadequate or misleading methods. Toohey does not help us work towards what we really need to know to properly debate the US (‘joint’) bases then or now: a comprehensive and historically developing agenda for assessment. Above all, Ball wanted informed debate on the bases.

In his 1987 book *A Base for Debate: The US Satellite Station at Nurrungar*, Ball provided a clear structure for serious debate on Nurrungar, Pine Gap and North West Cape, listing five sets of questions for Australian policy makers and the public to make informed choices:

- the degree to which the bases enhance deterrence rather than nuclear war-fighting;

- the extent to which they are important for arms control purposes;
- the likelihood and consequences of them being nuclear targets;
- whether the operations at the bases are compatible with Australian sovereignty; and
- the constraints hosting the bases places on more independent Australian defence and foreign policies.^[27]

In fact, it is the historicity of the defence argument that compels periodic reassessment. But they also suggest a more extended set of questions in addition to those Ball asked in 1987:

- Are the specifically nuclear risks and costs derived from hosting the bases still weighted as Ball saw them?
- Are threats to Australia such that they can only be countered with only higher levels of US military equipment?
- What is the relationship between extended nuclear deterrence in Australian defence policy and the global deterrence justification for the retention of Pine Gap?
- Are threats to Australia such that the invocation of US assurances of extended nuclear deterrence is an appropriate response?
- Does the seat at the table in Washington come with a speaking role, and is it ever used?
- How significant and how irreplaceable is the intelligence Australia receives from the American facilities?
- Are there non-nuclear costs to hosting the American bases and more generally from the alliance embrace?
- Does the role of American bases in Australia contribute to competitive or cooperative security approaches to space?
- Is there a relationship between the hosting of the bases and a willingness to contribute forces to US-initiated wars that neither contribute to Australian strategic interests nor receive enduring public support?^[28]
- Are there indirect and structural consequences of military and intelligence integration with the United States as articulated through the bases such that more independent Australian defence and foreign policies become more difficult to identify and realise?

These issues provided the policy framework for Ball and myself in our work over a decade or more on Pine Gap with our Canadian collaborator, Bill Robinson. All these issues, including Ball's original questions, remain live and in need of serious discussion without shortcuts.

These issues are especially relevant to two parallel contemporary nuclear policy responses to the breakdown in the US hegemonic order: on the one hand, the nuclear abolition movement epitomised by the nuclear ban treaty likely to enter into force in the coming year, and on the other, the proliferating list of countries, including US allies like Australia, Japan, South Korea and Germany where leading political and defence figures are openly talking about the need for an indigenous nuclear weapon to replace the nuclear umbrella.

Obviously, both trends have considerable implications for Pine Gap and other US military and intelligence facilities in Australia, but these are especially important in the abolition case. If we can just imagine a counterfactual case where an Australian government is willing to consider signing the

Treaty on the Prohibition of Nuclear Weapons like most of our Pacific and Southeast Asian neighbours, we also know that Pine Gap and other bases pose what may well be insuperable political difficulties to Australia becoming compliant with the treaty's prohibition of assistance in nuclear weapons operations or planning. For those reasons, as well as others such as Pine Gap's involvement in providing targeting data for drone warfare, the argument for closing Pine Gap is very strong.

Yet there is a problem in the not-so-distant future that will not be so easily solved or avoided: what will be required in the way of ban treaty verification requirements to persuade virtually all countries on earth that a nuclear prohibition regime will be sufficiently reliable and robust to detect, in 100% of cases, that no country is secretly preparing to reconstitute a nuclear weapon?[\[29\]](#)

So today I would add two other questions to my expanded list above:

- to what extent is it technically, strategically, and politically feasible to reform the bases, and Pine Gap in particular, to bring Australia into compliance with the prohibition on nuclear assistance provisions of the TPNW without inducing a collapse of the US alliance; and
- alliance or not, Pine Gap or not, in what ways could Australia contribute to the yet to be determined, but sure to be complex, verification requirements of the TPNW? [\[30\]](#)

In the 1980s, as Toohey rightly reminds us, there was talk of 'balancing' US verification capacities by inviting the Soviet Union to build a facility next door to Pine Gap. The logical flaw in the arms control verification justification for Pine Gap was always the unilateral character of the facility. The 'Soviet Pine Gap' notion was a playful way of pointing out the desirability of a bilateral solution.[\[31\]](#) At a very general level, put simply, but not necessarily simplistically, technical systems and capacities that give one side the confidence that measures of disarmament will not be disabling or worse should, if the goal truly is that chimera 'stable nuclear deterrence', be available to the other side.[\[32\]](#)

If those difficulties were almost impossible to imagine being overcome in the bilateral Cold War situation or its increasingly chaotic aftermath, logically the argument for multilateral verification structures is a great deal stronger in the nuclear multipolar world of today, where the majority of the nine nuclear armed states have either nuclear-armed intercontinental or medium-range ballistic missiles at their disposal. But where only a very small number of countries have any capacity to come close to global surveillance, most countries would have little reason to be confident their interests would be pursued by a multilateral verification structure of the coalition of the majors with impartiality and diligence.

And more widely still, in the context of the Treaty on the Prohibition of Nuclear Weapons, the demand for an abolition treaty regime will not be just for multilateral verification capacities, but multilateral verification capacities very more wide-ranging in their concerns, precise and accurate in their assessments, and very much more demanding in their robustness, than anything to date, and necessarily enduring effectively over centuries rather than years or decades.

At the current level of technology of armaments and surveillance, the facilities at Pine Gap and the space surveillance facilities at North West Cape, and the global surveillance systems of which they are an integrated part, are potentially, depending on precise requirements, more relevant to address such a situation than any alternative at present.

What forms of provision of data could be considered, in relation to both real-time thermal signature detection of missile launches and detonations or electronic intelligence? Under what institutional, legal, and security conditions? With the current pace of nuclear weapon proliferation, long range

ballistic and cruise missile and hypersonic missile proliferation (nuclear and/or conventionally armed all three), and the competitive militarization of space, serious assertion of collective rights to verification assurance capacities is necessary and must engage closely and imaginatively on an informed basis with national interest-based unilateral national technical means of verification.

Lest anyone leap to the conclusion I am arguing for the retention of Pine Gap for such purposes, the answer is very definitely not. But I am asking whether there are ways in which particular, partial functions of such a facility can be utilised for collective, multilateral verification purposes beyond arms control into the realm of nuclear abolition.

It is very hard to imagine, but then so was the idea of a nuclear ban treaty. But what has to be understood is that there has never been a political project in human history of such complexity and consequence as a functioning and enduring nuclear abolition regime.

We will reach the point where such verification requirements first need to be seriously set out when the first nuclear weapons possessing country existing today approaches the threshold of nuclear disarmament. A decade ago Malcolm Chalmers and William Walker pointed to the implications of an independent Scotland for the nuclear power status of a soon-to-be dis-United Kingdom, unable to find an alternative to the imposition of the Trident nuclear submarine base on Scotland at Faslane.[33] In the entropy of the consequences of the Covid19 pandemic on top of the trials of Brexit and the shifting geopolitical and internal foundations of Europe, the United States, Russia and China, such requirements may appear earlier and more urgently than expected.

III. ENDNOTES

[1] Full disclosure here: Des Ball and I worked together over many years, intensively from 1999 onwards until his death. Des, Bill Robinson and I worked for over a decade on Pine Gap publishing eight major papers through the Nautilus Institute on the extraordinary expansion in size, function and capacity of the base in the years before Ball's death in 2016. The papers are collected online as [The Pine Gap Project](#). Further papers are underway. Ball and I collaborated for over a decade on a second, parallel but related project on Japanese electronic intelligence and US signals intelligence in Japan, collected together as [The Japan SIGINT Project](#). Readers interested can look at Pine Gap papers relevant to these discussions at the Pine Gap Project website, especially *The Higher Management of Pine Gap* and *The SIGINT Satellites of Pine Gap*, as well as Richard Tanter, *The "Joint Facilities" revisited - Desmond Ball, democratic debate on security, and the human interest*, Special Report, Nautilus Institute for Security and Sustainability, 12 December 2012.

[2] Desmond Ball, Bill Robinson, and Richard Tanter, [The Antennas of Pine Gap](#), Nautilus Institute, Special Report, 22 February 2016; Tanter, '[Our poisoned heart: the transformation of Pine Gap](#)', *Arena Magazine*, No. 144, October 2016; and Tanter, [Hiding from the light: The establishment of the Joint Australia-United States Relay Ground Station at Pine Gap](#), Special Report, Nautilus Institute for Security and Sustainability, 2 November 2019.

[3] Desmond Ball, *A Base for Debate: The US Satellite Station at Nurrungar*, Sydney, London and Boston: Allen and Unwin, 1987; Ball, *Pine Gap: Australia and the US Geostationary Signals Intelligence Satellite Program*, Sydney: Allen and Unwin Australia, 1988; and Tanter, *The "Joint Facilities" revisited*.

[4] Herbert Scoville Jr., 'The SALT Debate: Why We Don't Need Iran', *New York Magazine*, vol. 12, no. 25, 18 June 1979, pp. 41-42; cited by Toohey, pp. 111, 116-7.

[5] Herbert Scoville Jr., 'The SALT Debate: Why We Don't Need Iran', p. 42.

[6] On the development of geosynchronous signals intelligence satellite system, and their names, see *The Higher Management of Pine Gap*, pp. 8-30, and *The SIGINT Satellites of Pine Gap*, pp. 6-37 and Tables 2 and 3.

[7] Jeffrey Richelson (ed.), *Declassifying the "Fact of" Satellite Reconnaissance*, National Security Archive Electronic Briefing Book No. 231, 1 October 2007.

[8] Thomas R. Johnson, *American Cryptology during the Cold War, 1945-1989. Book III: Retrenchment and Reform, 1972-1980*, (Center for Cryptologic History, National Security Agency, 1995), pp. 410-411.

[9] Toohey gives his source as Amy F. Woolf, *The New START Treaty: Central Limits and Key Provisions*, Congressional Research Service, R41219, 13 April 2016. Woolf, an excellent researcher on these matters, does talk about the telemetry issue, but not in regard to Gates, and does not give this particular quotation.

[10] See remarks and prepared testimony by Gates, Clinton, Mullen, and Perry in [Hearings on the New START Treaty before the Committee on Foreign Relations, United States Senate, Senate Hearing 111-738](#), April 29, May 18, 19, 25, June 10, 15, 16, 24, and July 15, 2010; and Tom Z. Collina, 'New START to Be Signed April 8', Arms Control Association, 8 April 2010, at <https://www.armscontrol.org/act/2010-03/new-start-signed-april-8>.

[11] 'Telemetry Fact Sheet', Bureau of Verification, Compliance, and Implementation, U.S. Department of State, 8 April 2010, [[archived content](#)].

[12] *The "Joint Facilities" revisited*, p. 46. In fact, the satellite 'footprint' would have been oval in shape, and uneven in reception quality near the edges.

[13] Bill Robinson reminds me that Menwith Hill was not a SIGINT satellite ground station until 1978, when the Chalet/Vortex generation started going into space. The first-generation Canyon satellites were operated from Bad Aibling, in West Germany, which was more than 160 km from the Czech border.

[14] Toohey, *Secrets*, p. 117. Toohey's two cited sources here are [9] Joint Committee on Foreign Affairs and Defence, Parliament of the Commonwealth of Australia, *Threats to Australia's security: their nature and probability*, AGPS, Canberra, 1981, p. 18; and [10] Fn. 10. Kim Beazley, *Thinking Security: Influencing National Strategy from the Academy*, Coral Bell Lecture 2008, Lowy Institute, March 2008, p. 14. [RT: p.12]

[15] Committee on Foreign Affairs and Defence, Parliament of the Commonwealth of Australia, *Threats to Australia's security: their nature and probability*, Transcript of Evidence, Volume 2, pp. 1560-1561. I am grateful to the Chamber Research Office of the Parliamentary Research Service for assistance in locating this document. Ball's testimony is at pp. 1505-1577, and Mathams' at pp. 1328-1395E.

[16] Final Report, *Threats to Australia's security: their nature and probability*, para 148, pp. 28-30; and Conclusion, Para 10., p. 97.

[17] Final report, *Threats to Australia's security: their nature and probability*, para 1.54.

[18] R.H. Mathams, 'Strategic Weapons and Their Effects', in *Report on Civil Defence Study Conducted at Canberra, ACT, 20-22 March 1978*, Annex B to Def. 92/1/20, June 1978, p.3.

- [19] Final report on *Threats to Australia's security: their nature and probability*, para 1.80, p. 28.
- [20] Toohey, *Secrets*, p. 117.
- [21] Desmond Ball and Sheryn Lee (eds.), *Geography, power, strategy and defence policy: essays in honour of Paul Dibb*, ANU Press, 2016, p.26; and Desmond Ball and J.O. Langtry, *Civil Defence and Australia's Security in the Nuclear Age*, Allen & Unwin, 1983.
- [22] Desmond Ball, Bill Robinson, and Richard Tanter, '[Australian participation in the Pine Gap enterprise](#)', NAPSNet Special Report, June 9, 2016.
- [23] Desmond Ball, 'Limiting Danger from Nuclear Attack', in Desmond Ball and Sheryn Lee (eds.), *Geography, power, strategy and defence policy*, pp. 143-181. For a brief review of studies of a nuclear attack on Pine Gap to date, see Richard Tanter, '[Possibilities and effects of a nuclear missile attack on Pine Gap](#)', *Australian Defence Facilities*, Nautilus Institute, 30 October 2013.
- [24] The following paragraphs are adapted from my 2012 paper.
- [25] See Kieran Finnane, *Peace Crimes: Pine Gap, National Security and Dissent*, University of Queensland Press, 2020. Finnane's book is the most penetrating discussion of the base and its implications for Australia.
- [26] Dylan Welch, '[Top intelligence analyst slams Pine Gap's role in American drone strikes](#)', 7.30 Report, Australian Broadcasting Corporation, 13 August 2014.
- [27] Ball, *A Base for Debate*, *op.cit.*, pp. 86-87. Elsewhere in the same book Ball added a sixth dimension: 'the extent to which their location in Australia is simply a matter of convenience.'
- [28] For a vigorous discussion of the German parallel, answered not only in the affirmative, but with a strong approbation, see Michael Rühle, [Good and Bad Nuclear Weapons: Berlin's Part in Shaping Nuclear Reality](#). Körber Policy Paper 3 (April 2009). In the light of the somewhat brutal clarity of Rühle's basic argument, if 'German nuclear weapons' are replaced by 'Australian hosting of American bases' then what Rühle sees as the strategic and moral necessity of German involvement in unpopular American wars as the price of assured extended nuclear deterrence brings up interesting Australian parallels.
- [29] These issues are explored at greater length in Richard Tanter, [Hope Becomes Law: The Treaty on the Prohibition of Nuclear Weapons in the Asia Pacific Region](#), Nautilus Institute for Security and Sustainability, Special Report, 13 December 2020.
- [30] For a first attempt at working through an argument that there is a strategically tenable and politically not impossible pathway for bringing the most egregious nuclear connection of Pine Gap into compliance with the TPNW in Richard Tanter, 'An Australian pathway through Pine Gap to the nuclear ban treaty', [Pearls & Irritations](#), 5 August 2019; [Alice Springs News](#), 6 August 2019; [\[extended and footnoted version here\]](#).
- [31] Bill Robinson points out that since US test flights were all flown from coastal facilities over oceanic paths, the flights and all associated telemetry were susceptible to monitoring from Soviet tracking vessels anyway.
- [32] This sentence and the following three paragraphs are adapted from Tanter, *The "Joint Facilities" revisited*, pp. 47-48.

[33] Malcolm Chalmers and William Walker, 'The United Kingdom, Nuclear Weapons, and the Scottish Question', *The Nonproliferation Review*, Spring 2002 pp. 1-15.

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