

The Empty Well, the Trig Point, and the Sign

BY David Burns

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I would like to acknowledge the Maralinga Tjarutja people who are the Traditional Custodians of the land concerned in this research, and I would like to pay my respects to Elders past and present.

There isn't much left in the Forward Area at Maralinga, at least not above ground. Almost everything was dismantled and interred in burial pits or destroyed in the nuclear blasts. A single road leads from the ruins of Maralinga Village and the surprisingly intact airfield to the Forward Area in the north. At a junction called Roadside, where thousands of soldiers once lived and worked, one road forks into two, splits into five, and then a grid of sealed and unsealed roads fans out into the South Australian bush. The most contaminated land sits within this grid and is loosely contained by a perimeter boundary of metal signs warning in Pitjantjatjara of the dangers that lie ahead.¹ At the southern border of the perimeter, at a place named Tietkens Plain by the British, stands a lone survey marker called a *trig point* erected by Australian bushmen and British soldiers while conducting their initial reconnaissance of the future bomb site. A short walk from the trig point is the rotting timber shaft of a nineteenth century well, evidence of the plain's namesake's failed attempt to find water and establish European pastoralism. In a place with so few visible human-made objects, the shared proximity of the empty well, the trig point, and the sign is unexpected. Seen in concert, they create an unintentional monument to nuclear colonialism.

Maralinga was not always *Maralinga*, and every object that remains, every radioactive remnant buried underground, and even the name Maralinga, exist as evidence of the British occupation.² For thousands of years, the Southern Pitjantjatjara people have lived here.

They speak Pitjantjatjara and Yankunytjatjara, and share cultural customs with many other Aboriginal peoples, including the Pitjantjatjara, Yankunytjatjara, Ngaanyatjarra, and the Spinifex People.³ The arrival of the British and the creation of Maralinga forced Aboriginal peoples onto new lands, into new groups, and caused irreparable damage to the lives of those that witnessed the detonations and to unknown generations of people to come.

The British planned to stay in Maralinga for 30 years, but after just 15, they hastily exited, leaving behind an archive of destruction and one of the most contaminated landscapes on Earth. They left behind the ruins of civic infrastructure, including razor-straight paved roads, thousands of kilometres of underground communications cabling, and a massive water catchment system. They left a cinema, a church, a swimming pool, and WWII-era aluminium barracks for thousands of soldiers. But most significantly, they left dozens of burial pits whose contents are unseen and pulsing with radiation. Some of the pits were capped with thick concrete pads and marked with signs corresponding to detailed inventories of their contents, but most were ad hoc and undocumented, with highly contaminated objects resting just centimetres below the sandy surface. The final remediation of Maralinga, completed in the late 1990s, unearthed many of the worst burial pits but left dozens undisturbed and uncatalogued. The remediation produced even more subterranean waste depositories with hundreds of thousands of cubic metres

of bulldozed soil, dismantled buildings, roads, military vehicles, and observation towers, interred alongside unknown amounts of plutonium, enriched uranium, and beryllium.

In the two decades since the remediation, the visible material evidence of the nuclear tests is slowly fading away or has disappeared completely already. A visitor to Maralinga today will see a cobbled-together collection of mismatched and incongruous objects that happened to remain after the many remediation operations and decades of curious visitors. Few artefacts remain to tell the story, and those that do comprise an incomplete and deceptive archive of what actually happened here.

THE EMPTY WELL

While the operation at Emu Field was being mounted, a search was made for a permanent trials site. It was essential that this site should be clear of trees, to permit unimpeded lines of sight for instrument layouts.⁴

The British had successfully conducted five nuclear detonations in Australia in the years before Maralinga. Operation Hurricane (1952) and Operation Mosaic (1956) were both situated in the Montebello Islands off the northwest coast of Western Australia. The first series of detonations on the Australian mainland took place in 1953 under the codename Operation Totem and was located in the claypan bush of Emu Field in the northwest corner of the Woomera Rocket Range. Though Montebello hosted three nuclear detonations and Emu Field two, neither test site fully satisfied the British





officials. In addition to the limitations imposed by site conditions and location, the first two test sites shared a common optical limitation. Both Montebello and Emu Field lacked the appropriate and necessary sight lines for the viewing and documenting of the blasts.⁵

Sir William G. Penney's influence and presence in Maralinga cannot be overstated. After being on board the American bomber that dropped the nuclear bomb on Nagasaki and personally visiting Hiroshima and Nagasaki to witness the power of nuclear weaponry first-hand, he was chosen to lead the operations to design, build, and test British nuclear weapons. He was responsible for making all decisions about operations in Australia and was personally present for the detonations. The quote above appears in the foreword to a book by Len Beadell, a self-taught Australian surveyor who was charged with finding a permanent nuclear testing site. The optical limitations at Emu Field (combined with logistical issues of delivery of supplies and the nearly impassable road conditions) led Penney to issue the orders to Beadell to locate a new site even before the nuclear testing at Emu Field had been completed. After an arduous and error-filled expedition, Beadell located a promising site 150 kilometres south of Emu Field. The site was named X300 and encompassed about 3,000 square kilometres and unlike Emu Field, featured clear sight lines of almost 20 kilometres.

Once Beadell and his team had decided on X300 as the new site, they quickly began constructing a temporary runway so that Penney

could see the site for himself. The chosen site for the runway was in the centre of X300, an open field named Tietkens Plain after William Harry Tietkens, an aspiring pastoralist, amateur surveyor, and photographer. Tietkens is obliquely responsible for Maralinga becoming Maralinga. In his search for land that he could claim for his pastoral company, Tietkens originally ‘discovered’ the site in 1875. Financed by English patrons, Tietkens worked for several years to lay claim on the land, the primary provision being that he could find a steady source of fresh water. He sank three wells with as many crews, drilling through the thick limestone and granite. The only water he found was briny and useless.

That night after bitter cogitation, Tietkens was compelled to admit that as his funds were nearly exhausted, and he had spent nearly two years in endeavouring to obtain water in the area, his only course was to collect the plant, material and tools and pay off the men. Thereby abandoning the undertaking. He felt that another £500 might have completed his scheme, but admitted the water would probably be salt, so that he could not justifiably apply to his supporters for further financial assistance. He records that his retreat from Ooldea, and the abandonment of the enterprise, was the most bitter part of his life’s history.⁶

Tietkens left the site and never returned. His failure to find fresh water meant that colonial pastoralism would ignore Maralinga. Maps from the late eighteenth and early nineteenth century feature dotted lines tracing Tietkens’ rambling paths through the land, perhaps a warning for other would-be pastoralists. Some nineteenth century maps (and even a few produced in the early twentieth century) identify the region that would become

Maralinga as ‘No man’s land.’ On the ground, all that remains of Tietkens’ time in Maralinga are the ruins of one of his failed wells, now preserved by the Maralinga Tjarutja with a simple metal railing and a fading sign. We look over the edge of the railing into the well; it’s filling with sand.

THE TRIG POINT

Beadell’s reconnaissance was accompanied by the construction of conspicuously placed survey markers called trig points. Trig points are commonplace across Australia; some are circular brass plates mounted to a concrete pad or footpath, others are complex stone cairns that require disassembly and re-assembly to use. More advanced versions include a mount for a theodolite and a small plaque including basic coordinates. At Maralinga, the trig points are identified with three-legged aluminium signposts standing approximately five metres in height with a four-sided cap that loosely marks the cardinal directions. There’s a trig point near the perimeter boundary of the Forward Area, within walking distance of Tietkens Well. This trig point sits on a slight rise, overlooking the nuclear test sites to the north. It looks fragile with its long legs made of standard aluminium tube and the cap constructed of thin, rusting sheet steel. The legs are fastened to crude concrete foundations with a single bolt. Beadell and his team would have transported the materials for long distances and over rough terrain, and aluminium’s resistance to corrosion

would be ideal for the South Australian climate. But still, the object seems too slight and too tall.

There must be others around, or there were at some point, their functionality is dependent on being able to see at least two others. We scan the horizon looking for sibling trig points, but we don't see any. We're standing on the edge of the nuclear test fields, which fan out to the north. The test sites Taranaki—home to the largest nuclear detonation and the most contaminating minor trials—Marcoo, Breakaway, Tadge, One Tree and the unused Tufi are all to the northwest. Minor trials sites of Wewak, Kittens, Rodents, and Rats are to the northeast. We assume the missing markers must have been taken down and inearthed in a burial pit during the remediation processes. Maybe they've been knocked over by the packs of feral camels. Or maybe we just can't see them, our vision obstructed by the conceptual dangers we know are present but will never see.

I'm standing on Tietkens Plain, near a trig point Beadell erected seventy years earlier. and it's easy to imagine him here, on this land. He arrived with a nuclear colonial mandate and the complicity of the Australian government, bolstered by 170 years of undeclared 'Frontier Wars' which stripped the continent of Aboriginal people, culture, and heritage. I imagine Beadell bounding through the sand in his British Land Rover and suddenly spotting Tietkens Well. Maybe he decided to locate this trig point near his predecessor's intervention, imagining himself as a fellow 'explorer' in his own twentieth century *terra nullius*.⁷





In one of his many books, this one conspicuously titled *Blast the Bush*, Beadell recounts coming upon a composition of slate markers during his search for a test site. Each piece of slate was about three feet high, buried in the ground a foot or two deep. They were rectangular and uniform in thickness, and situated a few feet apart from one another along a ‘perfectly straight long axis.’ After a detailed description, Beadell says, remarkably and without irony, ‘On closer inspection they seemed to be rather carefully placed.’⁸ He clearly understood the implications of his ‘discovery’, yet was quick to diminish its origination by stating, ‘Being in so isolated an area it was obviously an ancient Aboriginal ceremonial ground built by those primitive, stone-age nomads in some distant dreamtime.’⁹

Like so many before, Beadell refused to acknowledge the significance of the sophisticated Aboriginal culture he had found. It didn’t encourage him to question his ideas about the peoples that had built the formation. It didn’t cause him to abandon the expedition or to insist on finding another location for the permanent testing site. Instead, Beadell gave it a European colonial nickname—the *Aboriginal Stonehenge*—and then continued his work bulldozing the saltbush and spinifex grass in search of a flat, open space to ‘blast the bush’. His actions, and those of the seemingly innocent trig point, represent the first moments of the British efforts to westernise the Aboriginal bush, to overlay a foreign system of mapping and

ownership, and to build a platform for western quantification. The trig points are the opening salvo of Maralinga nuclear colonialism.

THE SIGN

A shift in popular opinion about nuclear testing and a warming of relations between the US and the UK led to the abandonment of Maralinga in 1967. The British conducted several remediation attempts, including Operation Clean-up (1963), Operation Hercules (1964), Operation Radspur (1966), and finally Operation Brumby (1967). As the British left, they erected a concrete plinth reading ‘Operation Brumbie, 1967’, inexplicably misspelt, meant to signify the completion of the final British remediation. The plinth, however, was built kilometres from the actual test sites, in an area that witnessed no significant testing. Claims by Aboriginal leaders about the dangers still present at Maralinga were ignored for decades, and it wasn’t acknowledged publicly that the British remediation attempts were a failure until a series of tests were conducted as part of the passage of the landmark Maralinga Tjarutja Land Rights Act of 1984. Photographs from a survey show incredulous scientists pointing to bright yellow chunks of enriched uranium scattered across the ground.

The years between the land rights act and the final remediation were defined by a series of high-profile confrontations between Aboriginal elders and British officials





about the culpability of the British in the poisoning of Maralinga. Archie Barton, the first administrator of the Maralinga Tjarutja, Mervyn Day from Maralinga, and attorney Andrew Collett travelled to England to make their case that the British should fund the remediation. The group famously delivered a container of red sand to the officials in London to expose the hypocrisy of British officials who claimed the area was safe yet were clearly unnerved by the presence of Maralinga sand.

After years of battles, a compromise was reached, and the final remediation of Maralinga commenced in 1996. While widespread and highly invasive, the effectiveness of the remediation remains contested. Despite this, the site was eventually declared safe for most forms of use and gradually handed over to the Maralinga Tjarutja. As part of the remediation agreement and in consultation with the Maralinga Tjarutja, a perimeter boundary was established that encompassed the most radioactive area within the Forward Area. Several boundary types were discussed, but it was eventually decided that the perimeter should not be a continuous fence that could inhibit movement of people and animals across the site, but instead should be a loose perimeter comprised of hundreds of signs spaced approximately 50 metres apart. The signs are similar in scale and material to a standard road sign and include only a few words and illustrations warning of the danger ahead.

Like the trig points, their effectiveness is based on their recognition as a network. Standing next to one of the signs and looking down the line, they're simply too small to distinguish in the mottled landscape. In the photographs that I took on Tietkens Plain, the signs are almost invisible, despite their relative novelty and frequency. The current caretaker of Maralinga, Robin Matthews, told me that the signs are in need of constant repair because the camels that roam Maralinga like to use them as scratching posts, highlighting the issue with relying on ephemeral humanmade objects to mark the intergenerational dangers of radioactive contamination. The signs are fragile and fallible, a thin, porous barrier to an omnipresent, unseen danger.

The empty well, the trig point, and the sign shoulder an impossible responsibility as the markers of a new (nuclear) *terra nullius*. Each object pierced the land in an act of colonial violence, the culmination of which included the nuclear terraforming of an entire landscape. Maralinga became an actual *terra nullius*, an empty land, an eternal irradiated void not created by juridical legislation or proclamation, but with a flash of light.

IMAGES

(p. 528–29) David Burns, *Trig point (Tietkens Plain I)* (2018–21). A lone trig point stands in Tietkens Plain, overlooking the Forward Area and nuclear fields to the north.

(p. 534) (above) David Burns, *Sign* (2018–21). Hundreds of common road signs warn visitors to Maralinga of the dangers still present in and on the land. Eating wildlife is acceptable, but travellers are warned not to set up camp. (below) David Burns, *Tietkens Well* (2018–21). In the late nineteenth century, aspiring pastoralist and amateur photographer William Harry Tietkens dug this well, and two others just like it, in a futile attempt to find fresh water. Had water been found, Maralinga would likely never have hosted the nuclear tests.

(p.535) David Burns, *Monument (Taranaki)* (2018–21). Taranaki hosted the largest nuclear test and the highly contaminating minor trials. In 1967, as they were abandoning the site, the British built this concrete plinth marking the spot of the 1957 detonation. The full extent of the radioactive contamination wasn't fully disclosed until decades later.

(p.538) David Burns, *Trig point (Cooper Pedy I)* (2018–21). This trig point, identical to those in Maralinga, sits on the northern edge of the Woomera Prohibited Area near the opal mining town of Cooper Pedy.

(p.539) David Burns, *Trig point (Tietkens Plain II)* (2018–21). Built to roughly signify the cardinal directions, the trig point caps are crudely constructed of sheet steel and aluminium tubing.

1. The worst contamination covers approximately 400 of the total 3,000km² that is considered Maralinga.

2. The British chose the word maralinga claiming it was a local Aboriginal term meaning 'field of thunder'. In reality, maralinga belongs to an extinct Aboriginal language once spoken by people who lived 2,000 kilometres away in the northernmost tip of Australia. (Odette Mazel, 'Returning Parna Wiru: Restitution of the Maralinga Lands to Traditional Owners in South Australia' in Marcia Langton (ed) *Settling with Indigenous People: Modern Treaty and Agreement-making* (Annandale, NSW: Federation Press, 2008).

3. Odette Mazel, 'Returning Parna Wiru: Restitution of the Maralinga Lands to Traditional Owners in South Australia', 161.

4. W. G. Penney, 'Foreword', in Len Beadell, *Blast the Bush*. (Angus and Robertson, 1967), ix.

5. Emu Field and Montebello were both permanently abandoned. However, future British tests resumed after Maralinga—at Malden Island and Kiritimati in the Pacific Ocean and eventually in the United States at the Nevada Test Site.

6. Alan S Hulme, 'Forward', in W.H. Tietkens, *Diary of the Exploration in South Australia of W.H. Tietkens Esq. F.R.G.S.* (Department of Supply, Weapons Research Establishment, Salisbury, South Australia, 1961), 9.

7. *Terra nullius*, the legal classification of a land as uninhabited, in Australia can be traced to the *Proclamation of Governor Burke*, signed on 26 August 1835. The two-page proclamation nullified all Indigenous land ownership and any agreement made with Aboriginal peoples. Hastily written in response to a treaty signed between a pastoralist and a group of Wurundjeri elders near present-day Melbourne, the proclamation officially opened the Australian continent to naked conflict between a visible and deadly coloniser and a now invisible and expendable Indigenous population.

8. Len Beadell, *Blast the Bush*, 174

9. Len Beadell, *Blast the Bush*, 173

