

LONGITUDE 129 DEGREES EAST, AND WHY IT IS NOT
THE LONGEST, STRAIGHT LINE IN THE WORLD

John R. Porter
B. Tech (Surv), Dip T.P., Grad.Dip Bus. Admin., L.S.,
F.I.S. Aust., M.R.A.I.P.A.,
Surveyor-General of South Australia

ABSTRACT

With the arrival of the First Fleet on the east coast in 1788, the British Government claimed possession of Terra Australis westwards to the 135 Degrees East longitude. This land was to be known as New South Wales.

The remainder of the continent became New Holland. No claim was laid to it by any nation until 1825, despite a number of landings on the north and west coasts by British, Dutch, Portugese and French navigators, as late as 1803.

Eventually, the likely occupation of the north coast by European colonists or Americans prompted the British to establish a settlement there at Fort Dundas on Melville Island. Longitude 135 Degrees East was then no longer relevant as it did not include the island within New South Wales territory. Consequently, the border was moved to longitude 129 Degrees East.

In time, this line became the boundary between Western Australia, South Australia and the Northern Territory, and a number of attempts were made to mark it on the ground. The nett result was a State border with an unfortunate step.

This paper details the history behind longitude 129 Degrees East, describes the various attempts made to fix its position, and explains why it is stepped. Finally, a "national perspective" is proposed to correct the anomaly and thereby make the border the longest, surveyed straight-line in the world.

----OoO----

I. INTRODUCTION

A quick glance through any atlas reveals the legacy of European colonialism on the world's continents, and while independence has come to many nations, physical scars of the legacy may never disappear. In particular are the geographical borders, chosen not as natural features or cultural boundaries, but arbitrarily for political convenience. These are often represented indelibly on the map of the world as latitudes and longitudes.

Recent forms of such practice resulting in major international repercussions have occurred in North and South Korea, and North and South Vietnam, in both cases the dividing line being a selected parallel of latitude.

The last of the continents, Antarctica, is also subject to a major subdivision, with administrative responsibilities divided along arbitrary meridians.

Through all of this colonialism, the international surveying profession has had a significant role as it endeavoured to mark the latitudes and longitudes on the ground. This task has led to high adventure, danger and sometimes death as the surveyors faced the brunt of the animosity of the local populace, dispossessed of traditional lands or physically separated from their kinsmen.

On top of this, there have been wild animals, deserts, jungles and frozen wastelands, starvation, thirst and disease as the surveyors invariably became the first to work in previously unexplored territory.

And now, at the close of the twentieth century, Australian surveyors are about to perform a similar task - the first survey of another administrative boundary which was selected arbitrarily as a degree of longitude.

While the trials associated with the establishment of the South Australia/Western Australia border at 129° East longitude may not have the high drama of other surveys, nevertheless it has not been without controversy. And, like the 141° East longitude survey of the border between South Australia and Victoria, the controversy appears to have been created by the surveyors themselves.

Parallels of latitude must, by definition, exist on the ground as a series of chords, with the exception of the equator, while longitudes can be truly represented as straight lines.

Excluding the Antarctica divisions, the two longest meridians used as administrative boundaries today are 129° East and 110° West, the latter being the border between Alberta and Saskatchewan in Canada which is just over 1200 kilometres long.

The eastern border of Western Australia is well over this distance in length (1843 kilometres), but a series of events seem to have made it impossible for it to be marked out as a straight line from the Great Australian Bight in the south to the Joseph Bonaparte Gulf in the north.

Nevertheless, if we are diligent, there may still be a section of this border left which can become the world's longest, surveyed cadastral boundary.

2. THE EARLY NAVIGATORS AND 129 DEGREES EAST

Historians tell us that the first overseas visitors to Australia's 129^o East longitude were probably Hindus and Buddhists who colonised Java and Sumatra in the 15th Century. Not that such visits would have been planned, for Hindu legend has it that the huge man-devouring bird known as Garuda dwelt on the lands to the south. Travel there was to be avoided at all costs.

The Chinese also traded in Timor around this period, and traces of porcelain have been found on the northern shores of Australia to indicate that some of their unfortunate travellers may have been blown across Wei-Lu, the Unknown Sea, to our inhospitable shores.

The first Europeans to visit were the Portugese who believed they had bought the exploration rights to Australasia through the Treaty of Tordesillas in 1497. That year, Spain and Portugal set up a meridian line of demarcation from pole to pole, 100 leagues west of the Cape Verde Islands. Spain was given exclusive rights to the west of the line, and Portugese colonization was to keep to the east. The anti-meridian line ran through the Moluccas and Western Australia, somewhere between 129^oE and 135^oE.

A later agreement, known as the Treaty of Saragossa (1529), saw Portugal pay Spain to have this line shifted eastward a further 17 degrees which then placed virtually all of Australia and Indonesia within Portugese domain.

It is understood that no other European power officially accepted this papal division of the globe, however the Portugese immediately took up their exploration rights. By the mid-1500's, they were known to be plundering slaves from Melville Island (130^o East Longitude), and would certainly have carried out some probing of the coastline of Terra Australis at the same time.

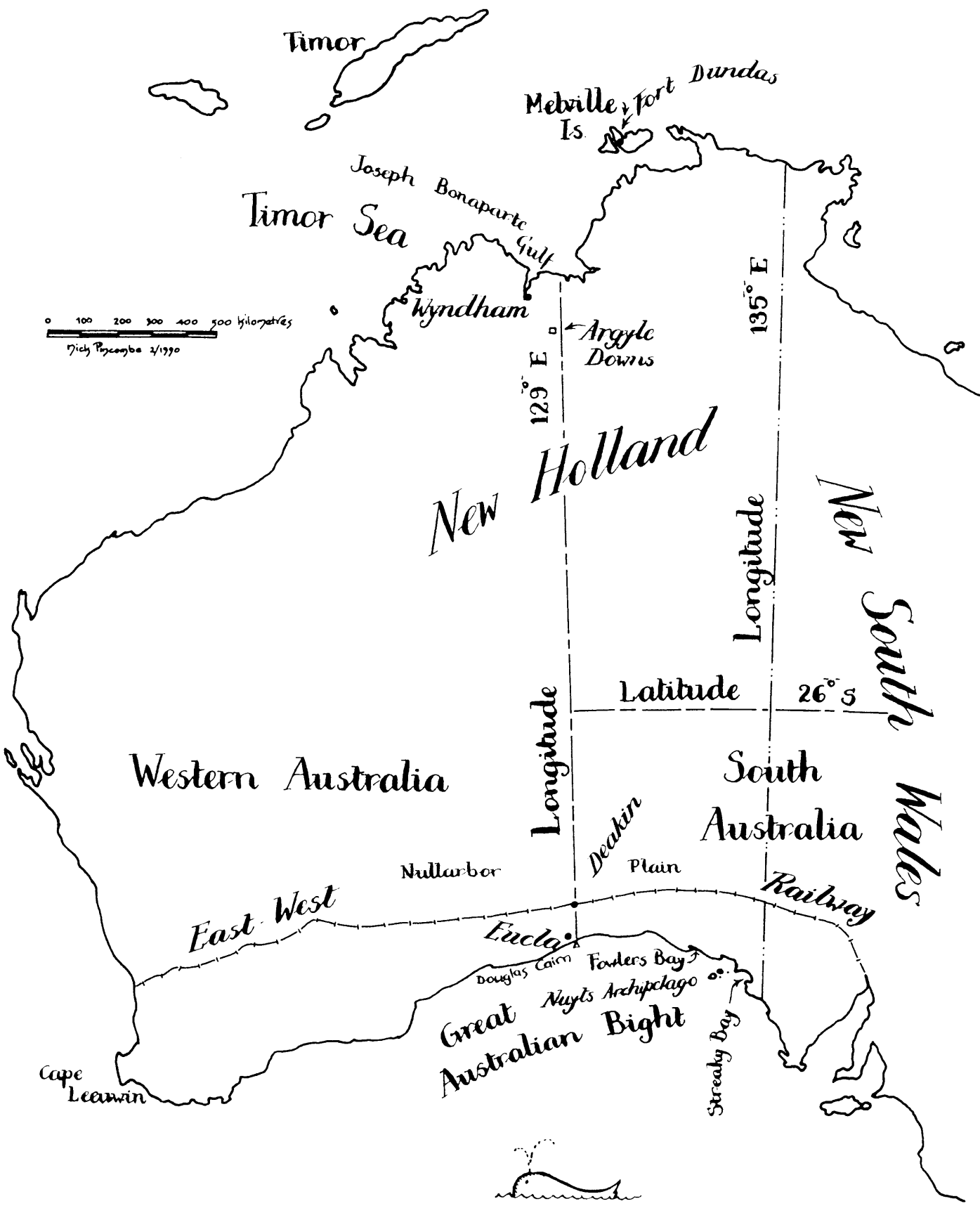
Yet it was the Dutch who started to put the western portion of Australia on the map, initially through the actions of a Captain Hendrik Brouwer. In 1611, he rounded the Cape of Good Hope, but instead of travelling north along the African coast before heading towards the East Indies, he headed out due east from the Cape. This cut the time of travel from Europe to the Indies from 12-15 months down to 6 months.

Naturally, all Dutch traders followed this new route, and as a result of their inability to measure accurate longitudes, were soon making contact with our western shores.

One of these was Pieter Nuyts, Councillor Extraordinary of India and newly appointed Governor of Formosa, who had sailed from Holland in 1626 in the Gulden Zeepard under the captaincy of Francis Thijssen.

Passing south of Cape Leeuwin, previously discovered during another Dutch voyage, the Gulden Zeepard moved into uncharted waters along the south coast. Nuyts and Thijssen became the first Europeans to view the cliffs of the Nullarbor Plain and the head of the Great Australian Bight. Their furthest point east was a small group of islands, adjacent to present-day Ceduna, which Matthew Flinders was later to name Nuyts Archipelago (133^oE longitude).

Explorations by Tasman (1644) and William Dampier (1700) completed the survey of the western shores of Australia, and it is interesting to note that maps showing part of Terra Australis as New Holland were produced around this time, indicating 135^oE longitude to be the eastern boundary of this territory.



The apparent poverty of the country and its natives discouraged the Dutch East India Company from colonising New Holland, and when Captain Phillip arrived in Botany Bay in 1788, his explicit instructions were to proclaim New South Wales only as far west as 135° East longitude and to leave New Holland well alone.

In a vague way, the British thus gave some recognition to a Dutch claim for the balance of Terra Australis.

At the turn of the nineteenth century, there was a flurry of French and British coastal exploration, with D'Entrecasteaux revisiting the head of the Great Australian Bight and Baudin, Flinders and King filling in the gaps on the map.

Eventually, it was the British who showed a first real interest in colonizing New Holland when in 1824 Captain Gordon Bremer of New South Wales was despatched to Northern Australia to establish a settlement and take possession of the coast of the Cobourg Peninsula as well as Bathurst and Melville Islands (between longitudes 130°E and 133°E)

One of the main purposes of this settlement, which was based at Fort Dundas on Melville Island, was to forestall French, Dutch or even American intervention or annexation of the area.

In 1825, the western boundary of New South Wales was moved from 135°E longitude to 129°E longitude to incorporate the Fort Dundas settlement within British sovereignty.

When Captain Stirling established the new Colony of Western Australia, the remainder of the lands of New Holland were included in it, and longitude 129°E became the eastern boundary. England thus became possessed of the whole Australian continent in an "apparently careless manner".

3. SOUTH AUSTRALIA AND 129 DEGREES EAST

By Letters Patent on the 19th February 1836, the Colony of South Australia was proclaimed, with borders that reached to 132° East longitude on the west, and 141° East longitude on the east.

It is unclear why 132° East and not 129° East was chosen as it left in the hands of New South Wales a two degree corridor of land between the South Australian and Western Australian Colonies.

During the early coastal explorations, Nuyts and others failed to find a safe harbor at the head of the Great Australian Bight, and Fowler's Bay near Nuyts Archipelago (132°E) was the only known anchorage available. It is therefore likely that the choice of 132°E for the border was simply to ensure that Fowler's Bay was within the new Colony.

During the 1800's, Australia witnessed a number of epic land explorations as the various Colonies endeavoured to find suitable land and establish viable economies from an agricultural and pastoral base.

South Australia looked to the west, and considered the likelihood of a stock route to Western Australia. However, the "westerners" were not quite as enthusiastic about the proposal.

"What is South Australia to us? They have their self-supporting system, they have revelled in moonshine long enough If we wish to see them, we can soon find our way and we require no puffing advertisements from the neighbouring colony of high-minded pretensions. We will not be licked by the dog that has bitten us"

Regardless of this lukewarm support, South Australia pressed ahead with its plans, and Edward John Eyre left Streaky Bay in 1840, crossed 129° East, and eventually completed the inaugural trip from Adelaide to Perth by land. His pessimistic report of the country he'd crossed put the brakes on expansion in that direction for some time.

Minor explorations to the interior of Eyre Peninsula later indicated a more promising future for the area, and the government of South Australia decided in 1858 to petition Queen Victoria for the annexation to South Australia of the corridor of New South Wales land between 129° East and 132° East.

Its claim for this territory was two-fold. Firstly, the land would soon be settled by pastoralists, and protection of life and property would need to be provided from the outpost at Streaky Bay. Secondly, the nearest ports of shipment for produce from the district were in South Australia.

In 1861, an Act of Parliament legalised the claim, and 129° East longitude became the common border between South Australia and Western Australia.

In regard to future intentions to mark this line on the ground, this Act also introduced the proposal that adjoining Colonies could determine or alter common boundaries by agreement.

"Whereas the boundaries of certain of Her Majesty's Colonies on the Continent of Australia may be found to have been imperfectly or inconveniently defined, and it may be expedient, from time to time, to determine or alter such boundaries it shall be lawful from time to time for the Governors of any contiguous Colonies by an instrument under their joint hands and seals, to determine or alter the common boundary of such Colonies".

4. EARLY SURVEYS TO MARK 129 DEGREES EAST

The first attempt by surveyors to place any form of mark on the SA/WA border occurred back in 1866 when the South Australian government let a special contract to private surveyors A. and E. Delisser. They were to commence from Eyres Depot near Fowlers Bay (132°30') and run a traverse westwards a distance of approximately 330 kilometres to the Province boundary. A chain and prismatic survey of the coastline to the border was also to be made.

In a report to the Surveyor-General, Surveyor E. Delisser stated that:-

"In consequence of having to run the line from the west, I was not able to plant a trig on the boundary, but I have carefully surveyed the coast to a few miles beyond it, and fixed certain positions which are near to it"

Delisser's survey was connected to the South Australian trigonometrical network, and he used this connection to fix a post on the border.

In his report, he also identified a safe harbor near the Eucla Sandhills, and requested that a marine survey be carried out immediately so that any advantages for pastoral expansion in the area could be exploited by South Australia.

Lieutenant Douglas in the Schooner Flinders duly arrived in May 1867, and after carrying out the necessary soundings and fixings of the harbor, placed a cairn on the SA/WA border near the cliffs. On the centre pole, he nailed a copper plate with the following inscription:-

"South Australia. Provincial Marine Survey - Lat $31^{\circ}41'0.85''$: long $129^{\circ}0'0''$ East; var $1^{\circ} 52'$ East. Being the boundary between the Provinces of South and Western Australia".

A later connection between Delisser's survey and the Douglas Cairn established a longitude for it of $129^{\circ}01'54''$ East which placed it well inside South Australia. Even so, the new harbor at Eucla was definitely in Western Australia, and this put a dampener on South Australian aspirations in the area.

To confuse the issue, Captain Howard in the H.M.S. Beatrice visited the area in 1880 and, exchanging telegraph signals between Adelaide and the Eucla Telegraph Station, ascertained that in his humble opinion the longitude of the cairn was $128^{\circ}59'58''$ East, just inside Western Australia.

With the extension of the trigonometrical networks from Perth and Adelaide, two more values were eventually established:-

$129^{\circ}00'39''$ East - from South Australian Networks
 $128^{\circ}59'21''$ East - from Western Australian Networks

Because of this indecision, pressure was being applied at the turn of the century to have the 129° East Longitude specifically laid out by surveyors. In the south, Western Australians were leasing land right up to the Douglas Cairn which South Australians believed was at least 800 metres inside their Province. In the north, pastoralists had settled land in the Kimberleys for 450 kilometres south of the coast. They were anxious to fence those properties that abutted the border of what was then the Northern Territory of South Australia, and there were prospects of oil and gold discoveries in the area.

Apart from some general discussion between the Government Astronomers of Perth and Adelaide on the use of radio signals to establish 129° East, nothing substantial occurred in the ensuing years to satisfy the anxieties of the pastoralists.

However, in 1907, agreement was reached for the development of a Trans-continental Railway, and this attracted surveyors to the southern part of the border in the following year.

The Engineers Report to Federal Parliament in 1909 described the survey work carried out from Kalgoorlie to the border under the control of W.A. Surveyor R.J. Anketell:-

"At the crossing point on the South Australian border, a substantial post was put in with the terminal mileage stamped thereon. A substantial bend mark was also put 100 links south of the terminal peg, with the reduced level distinctly marked thereon. Close to the terminal peg a substantial cairn was erected which can readily be seen one mile from any direction".

The Chief Surveyor in charge of the South Australia section of the railway survey had no difficulty finding this border cairn as he reported to the Adelaide "Advertiser" on his return in April 1909:-

"When we reached the border, we saw the cairn erected by the Western Australian surveyors, marking the finishing point of their survey. Upon it was erected a flagpole from which was fluttering the remains of the Western Australian flag. We hoisted the South Australia flag alongside of it, and when we left they were both flying in the breeze."



The S.A. and W.A. flags on the East-West Railway

It is interesting to note that the level misclosure at the border was 0.85 metres in 2328 kilometres, with mean sea levels being transferred from tide gauges at Fremantle and Port Augusta. It is easy to understand, therefore, that when the railway surveyors connected to the Douglas Cairn and established a longitude for it of 128°59'37", all argument about its position in relation to the border seemed to dissipate.

The Deakin Obelisk

In October 1918, questions relating to the permanent marking of 129° East were raised once more in the South Australian parliament. The portion of interest at that time lay between the sea coast and about 80 kilometres north of the East-West railway, and the government was urged to enter into immediate negotiations with Western Australia to cooperate in this work.

As a result, the transmission of radio-telegraphic, longitude signals to Australia directly from Greenwich was attempted with the help of the Astronomer Royal of England.

The results encouraged more practical application, and in November 1920, the South Australian Government Astronomer G.F. Dodwell and Surveyor C.M. Hambidge left Adelaide for the SA/WA border. At the Deakin Siding they erected three observing pedestals and took astronomical observations to fix longitude by three different methods;

- meridian transits
- equal altitudes, $7\frac{1}{2}$ degrees from the zenith
- Almucantar transits

Two portable masts, 14 metres high, and a two-wire aerial, 91 metres long, were erected prior to the observations, and these were used to receive radio signals from Lyons in France. The same signals were received simultaneously in Greenwich, Adelaide, Sydney and Perth. Deakin also received sidereal clock beats from the Adelaide Observatory.

As the method adopted for longitude determination had proved to be a great success, another more extensive series of observations was carried out, again at Deakin, in April 1921. The value of the East longitude of the pedestals was determined to be $128^{\circ}58'00''.63$. This placed them approximately 2.8 kilometres west of the border.

Following an agreement in 1922 between S.A., W.A. and the Commonwealth of Australia (which had taken over administration of the Northern Territory from South Australia), Surveyor Hambidge returned to Deakin for a third time in 1926. He accurately chained along the East-West railway to the border, and constructed there a two-metre high concrete survey pillar, now known as the Deakin Obelisk, 45.8 metres north of the centreline of the rails. A smaller obelisk was also erected on a low rise 1.7 kilometres due south.



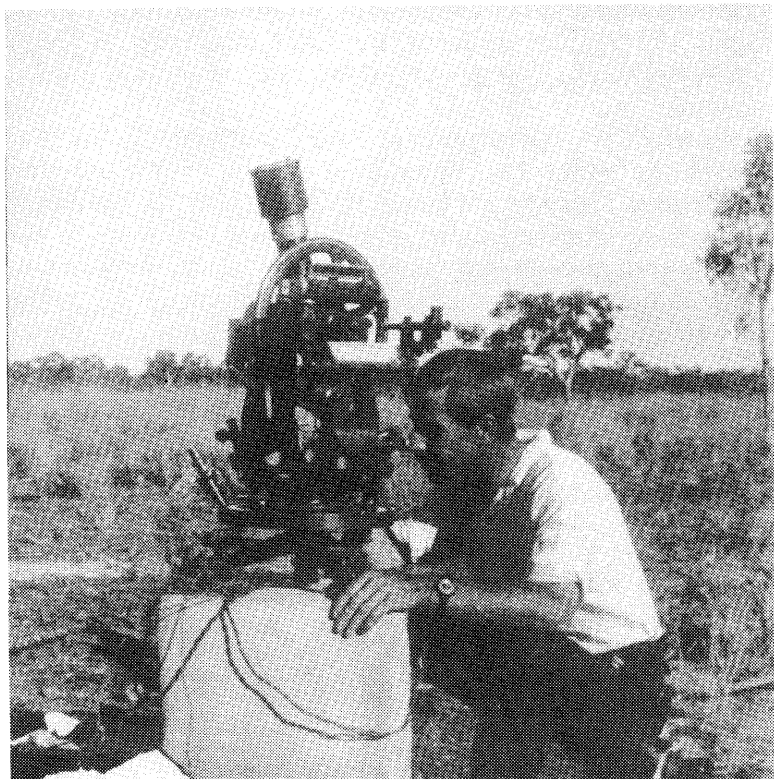
The Deakin Obelisk

The longitude of the Deakin Obelisk is now accepted as $129^{\circ}00'01''.8584E$ (1965 spheroid, Australian Geodetic Datum) which places it 49.8 metres east of $129^{\circ}E$ East.

The Austral Pillar

On completion of the astronomical observations at Deakin in 1921, Surveyor Hambidge travelled with the Government Astronomer of W.A., Mr. H.B. Curlewis, to Wyndham and on to M.P. Durack's station at Argyle.

By June 20, 1921, the wireless masts and aerial had been erected at a point considered to be close to $129^{\circ}E$, and astronomical observations immediately commenced. Transit and almucantar instruments were used simultaneously on two adjacent concrete pedestals, and once again time signals were received in Australia from Lyons. Preliminary results showed that the observation stations were approximately $1\frac{1}{2}$ miles east of the border.



*Surveyor C. M. Hambidge
at the Argyle Observation
Pedestal*

Following the 1922 Agreement, the Austral Pillar was installed at a longitude now accepted as $128^{\circ}59'57''.2933E$ (Australian Geodetic Datum).

During the 1930's, a surveyed line was produced due south of this pillar to a point known as the 207 Mile Post, which is approximately 1270 kilometres north of the Deakin Pillar. This post is 79.1 metres west of $129^{\circ}E$ East.

5. THE 1922 AGREEMENT

On 4 November 1922, the three involved governments agreed that it was "desirable to determine definitely and permanently the position of the boundary between the State of Western Australia on the one hand and the State of South Australia and the Northern Territory of the Commonwealth on the other hand."

For this purpose, a Board was appointed consisting of the three Surveyors-General, and the Agreement required that this Board should:-

- "2. (i) From information supplied by the Government Astronomers of New South Wales, South Australia, and Western Australia as to the positions of the astronomical stations in the vicinity of Deakin on the railway from Kalgoorlie to Port Augusta and in the Kimberley District in the north of Australia and from any other information available, determine to the best of its ability the position of the 129th Meridian of East Longitude in relation to the aforesaid stations.
- (ii) Establish and permanently mark on the ground points on the said Meridian in the vicinity of the astronomical stations aforesaid and connect such points to the trigonometrical survey or other standard survey marks of the survey systems of the Commonwealth or of the States.."

This work was duly carried out with the establishment of the Deakin Obelisk and the Austral Pillar.

The Agreement went on to state the following in Clause 4:-

- "4. NOTWITHSTANDING what any future observations may show to be the exact position of the said meridian within the Commonwealth the points referred to in paragraph (ii) of Clause 2 shall for the purpose of determining the boundaries as aforesaid be deemed to be on the said meridian."

To me this clearly indicates that, for the purposes of establishing the State borders, the Deakin Obelisk and the Austral Pillar were to be deemed to be on the 129th meridian of East Longitude. This view is also supported by Surveyor J. Kean who had this to say about clause 4:-

"Clearly what this is saying is that it matters not one iota that our meridian within the fullness of time will be found to be not quite north-south, and not quite on the 129th meridian. That is inevitable, but gives us no reason to abandon our original line for something more perfect. After all, if that were the case, what would there be to stop us next year opting for an even more accurate delineation of the 129th meridian?"

If we accept this tenet, then the interpretation of the following Clause 5 should have been straight forward, and should have resulted in a straight border with the 26^o parallel of latitude merely cutting this straight line and delineating where the South Australian section stopped and the Northern Territory began.

- "5. (a) A line through the point in the vicinity of Deakin aforesaid true South to the coast and true North to the 26th parallel of South Latitude shall be accepted by the parties hereto as determining for all time the boundary between the said States; and
- (b) A line through the point in Kimberley District aforesaid true North to the coast and true South to the 26th parallel of South Latitude shall be accepted by the parties hereto as determining for all time the boundary between the State of Western Australia and the Northern Territory of the Commonwealth."

However, Clause 5 introduces ambiguities, particularly in the use of the terms "true North" and "true South". As surveyors, we regard these as 360° and 180° along the true meridian, yet we are also aware of the inaccuracies that exist in our field methods and equipment.

The line joining the Deakin Obelisk and the Austral Pillar is a mere handful of seconds from true north. Indeed, if the border was treated as a normal cadastral boundary in South Australia, rounding the bearing off would result in it being recorded as $360^{\circ}00'00''$.

Therefore, in practical terms and keeping in mind the accuracy of surveying equipment in 1922 when the Agreement was signed, the line joining the two survey monuments runs north/south. The reading of Clause 4 in conjunction with Clause 5 should have caused no difficulty in accepting it as the State border.

Clauses 6 & 7 of the Agreement required an instrument to be prepared "under the joint hands and seals of the Governor-General of the Commonwealth and the Governors of the said States". Royal Assent was then to be obtained and the approval proclaimed in the Commonwealth, S.A. and W.A.

Clause 8 required that any survey of the State boundary was to be marked in accordance with the principles from time to time laid down by the Board.

When the Board met for the first time in August 1923, it agreed to the manner in which the border was to be fixed on the 129° East meridian at Deakin and Argyle, and to the type of permanent monument to be erected there.

The minutes of the meeting indicated that "the work should be carried out with a reasonable degree of accuracy at a minimum of cost, and that an academic result was not to be sought after, with a high and fanciful degree of accuracy".

These were wise words indeed, indicating a practical approach to a difficult survey exercise.

The Board went on to indicate that the ranging of the border from the permanent obelisks (Deakin and Austral) should be true north/south with azimuths checked continuously by stellar observations on "circumpolar stars at east and west elongations when obtainable, extra-meridians, or almucantars".

In stating this, the Board assumed that the longitude of the two permanent obelisks would be very nearly on 129° East and that any discrepancies discovered in ranging a straight line between them could be readily removed in the field by offsetting the intervening marks. The minutes of the Board state:-

"The intervening points on the ranged line should be offsetted to conform to the corrected direction, provided the error does not exceed 2 links to the mile, otherwise the line to be rerun".

Two links to the mile roughly constitutes an error of $0^{\circ}01'$ in azimuth. The difference between true north and the meridian joining Deakin Obelisk and the Austral Pillar is well inside this tolerance.

To date, marking on the ground has been carried out for 333 kilometres due south of Austral Pillar to the 207 Mile Post, and 126 kilometres north to the coast. In addition, there has been the fixing of the intersection of the SA/NT border at Surveyor-Generals Corner.

Because the survey south from Austral Pillar was carried true south and not towards Deakin Obelisk, the 207 Mile Post is roughly 26 metres west of this line, while the survey north to the coast places the fencing roughly 10 metres east of the line at the Joseph Bonaparte Gulf.

Currently no proclamation of the 129°E longitude border has occurred.

SURVEYOR-GENERALS CORNER

Due to the possibility of large scale mineral discoveries and pastoral developments in the area adjacent to the north-west corner of S.A., a survey to mark the 26° south parallel of latitude (the SA/NT border) was commenced in June 1963 from Mount Hearne Trigonometrical Station.

The termination of this survey was to be at the W.A. border at 129°East, and this required the fixing of a further permanent obelisk on that meridian.

In 1967, the Director of National Mapping indicated to the Board that the longitudes of Deakin Obelisk and Austral Pillar were not the same. He expressed the opinion that if the Board's interpretation of the 1922 Agreement was adhered to "there will be a permanent reminder of the inaccuracies of early surveys as is the case of the Victorian/South Australian borders."

He suggested that the sensible thing to do was to set out a meridian in the terms of the Australian Geodetic Datum.

Unfortunately, at the Board meeting in March 1967, his proposal fell on unsympathetic ears. As the Surveyor-General of W.A., H. Camm put it, "this could only be done if provided for in a new Agreement, but there would be difficulties at the northern end where nearly 300 miles have been marked and adopted as boundary. In some cases improvements have been erected and the boundary has been fenced."

And so the meeting unanimously resolved that there was no justification in seeking a variation to the Agreement. There was definitely no thought given to re-examining the intention of the Agreement.

Consequently, it was determined that two marks were to be placed on the 26°South latitude, one due north of the Deakin Obelisk and the other due south of the Austral Pillar.

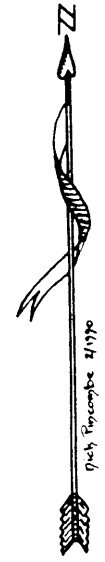
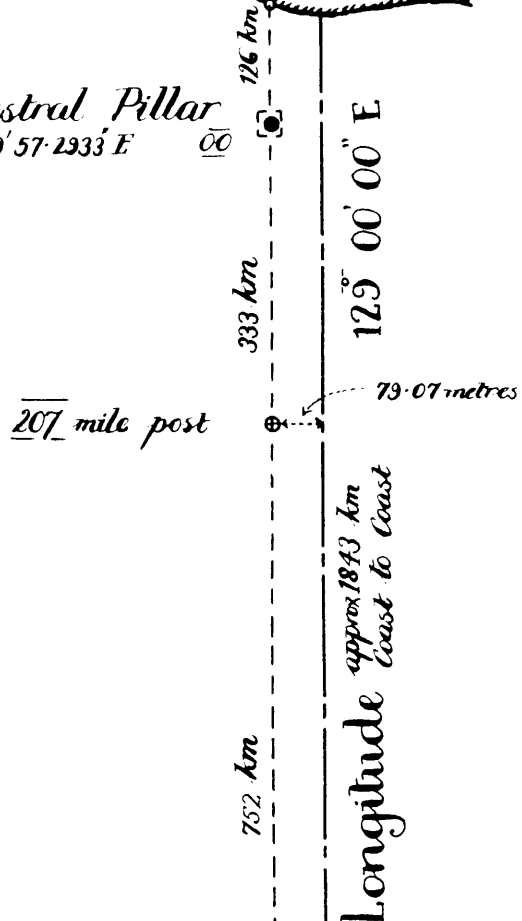
*Left to right: H. M. Hocking,
Supervising Surveyor, Alice
Springs; R. Comber,
Surveyor, Alice Springs;
Acting S.G. N.T. P. J. Wells;
S.G. S.A. H. A. Bailey;
S.G. W.A. H. Camm;
Acting Director of Lands
N.T. (formerly S.G. N.T.)
V. T. O'Brien*

*4/6/68 Surveyor-General's
Corner*



W. L. Fisher
Joseph Bonaparte Gulf

Austral Pillar
Long: $128^{\circ} 53' 57.2933'' E$



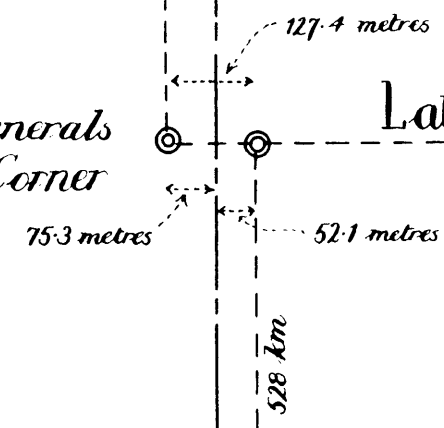
Longitude $129^{\circ} 00' 00'' E$

207 mile post

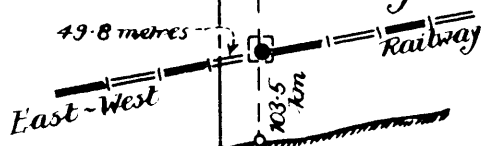
Longitude

Surveyor-General's Corner

Latitude $26^{\circ} 00' 00'' S$



Deakin Obelisk
Long: $129^{\circ} 00' 01.8584''$



W. L. Fisher
Great Australian Bight

On 4 June 1968, two concrete pillars were completed to mark Surveyor-Generals Corner in the presence of V.T. O'Brien, Acting Director of Lands, NT; P.J. Wells, Acting Surveyor-General, N.T.; H.A. Bailey, Surveyor-General, S.A.; Harold Camm, Surveyor-General, W.A.; and B.M. Allwright, Surveyor N.T.

By this action, the concept of a 127.4 metre step in the eastern boundary of W.A. became a definite possibility.

7. WHY NOT A STRAIGHT LINE?

Surveying of the SA/WA border in the near future is more likely now that global positioning system techniques have enabled large cost reductions to be introduced for such a venture.

The question of which line to be marked needs to be resolved. A return to the 1922 Agreement and a proper interpretation of Clauses 4 and 5 together suggests that the line should be a meridian between the Deakin Obelisk and the Austral Pillar. And it is important to keep in mind the intention of the Agreement which was definitely not to introduce a 127.4 metre step at the 26° South latitude.

The Board in 1922 was also firm that "an academic result was not to be sought after with a high and fanciful degree of accuracy", yet that appears to be exactly what we have done.

As Surveyor J. Kean has recently pointed out, if the survey of the eastern boundary of WA had been carried out before the NT/SA project materialised, there would be not step at Surveyor-Generals Corner today.

If we adopt the Deakin Obelisk/Austral Pillar line for the SA/WA border, it can readily be ranged south of the East-West Railway without substantially affecting existing occupations. However, ranging the same line north of the Austral Pillar to Joseph Bonaparte Gulf appears to be out of the question because of the occupations. Similarly, it may be unacceptable to change the WA/NT border between the Pillar and the 207 Mile Post which would require a shift of roughly 26 metres to the east to be on the meridian.

Perhaps the answer lies in a compromise, with the border becoming a meridian between the Deakin Obelisk and the 207 Mile Post. This would require the introduction of a bend in the border at the Post of something less than a minute of arc which would certainly not be visible to the naked eye.

While this does not completely satisfy the requirements of the 1922 Agreement, it certainly comes close, and it eliminates the "academic" step at Surveyor-Generals Corner.

As a bonus, it not only gives us a straight line 1383 kilometres long which is sufficient to beat anything the rest of the surveying world can produce, but it also removes visible evidence that can be misinterpreted by the uninformed as "the surveyors got it wrong again".

REFERENCES

Board of Surveyors-General Appointed Pursuant to the Boundary Agreement of 4 November 1922

- . Minutes of Meeting held in Melbourne 9 August 1923; S.A. Dept. of Lands docket 807/23
- . Minutes of Meeting held in Canberra 9 March 1967; S.A. Dept. of Lands docket 1286/67
- . Minutes of Meeting held in Hobart 6 October 1970; S.A. Dept. of Lands docket 2818/70

Dodwell G.F. 1921

Determination of Longitude in Australia, S.A. Govt. Printer, Adelaide

Halls C. 1971

The Voyage of the Gulden Zeepaard. Address to the R.G.S.S.A. 6 May 1971

Kean J.J. 1988

Surveyor-Generals Corner Revisited, tieline Volume 6 Number 3 & 4 I.S.A. S.A. Division August and October 1988

Lewis J. 1918

Western Boundary of South Australia; Annual Address of the President, R.G.S.S.A. Volumes 19, 20 and 21

South Australian Department of Lands

Dockets L & S 91/1923, L & S 807/1923, L & S 183/1926, DL 1286/67, and SD 4729

South Australian Parliament

- . Extension of Western Boundary of South Australia, PP 27 of 1858
- . Annexation of Additional Territory to South Australia, PP 180 of 1861
- . Survey of New Port in Great Australian Bight, PP 137 of 1867

Spigl H.S. 1940

The Survey of the 129th Meridian, The Australian Survey June 1, 1940

Threadgill B. 1922

S.A. Land Exploration 1856-1880, Hassell Press, Adelaide

Trounson A.D. 1988

Psita corum Regio (Region of Parrots). Fact or Fiction? The Globe No 30 1944