PRESENTER: GEOFF SANDFORD

• B. Tech. (Surveying), Adelaide, 1969
• M. Sc. (Surveying & Geodesy), Oxford, 1973

FORMERLY:

• Geodetic Adviser, Land Services Group, Department for Transport Energy & Infrastructure, Government of South Australia, 1993-2011
• South Australian delegate to the Intergovernmental Committee on Surveying & Mapping (ICSM), Geodesy Technical Sub-committee, 1994-2011
• Lecturer in Geodesy, University of South Australia, 2001-9
INTRODUCTION

• In 1891 Sir Thomas Elder, a wealthy South Australian pastoralist, financed a scientific expedition to explore the Great Victoria Desert. The trip was convened under the auspices of the Royal Geographical Society and carried out many other geological and botanical duties.

• This aim of this expedition was to confirm or otherwise the suitability of this region for pastoral activities.

• This huge tract of land was left unexplored between the expeditions of Forrest, (1873-4), to the north and Giles (1875), to the south.

• Search for traces of Alfred Gibson, lost on the Giles expedition.
TRAVERTES ACROSS THE GREAT VICTORIA DESERT 1891-2 ELDER EXPEDITION

Forrest – 1874
Gosse – 1873
Maurice – 1901
Giles – 1870’s
THE ELDER SCIENTIFIC EXPEDITION OF 1891.

LARRY WELLS 2ND FROM LEFT
Expedition leader Lindsay took the main party from Beltana to the north-west across the Everard and Birksgate Ranges. From Ranges Lindsay sent his surveyor, Mr Wells, on two “flying traverses” to cut across the Great Victoria desert, then rejoin and report to the main expedition party.

THE FLYING TRAVERSES IN DETAIL - EAST & WEST MARKS

OVER 60 YEARS WOULD PASS BEFORE THE COUNTRY WAS VISITED AGAIN
Leonard (Len) Beadell, OAM, BEM, 1923-1995, was a surveyor, road builder and author, responsible for opening up the last remaining isolated desert areas. He built 6500kms of road in some 2.5 million square kilometres of central Australia from the 1940s to the 1960s. Len is sometimes called "the last true Australian explorer".

See slide 26
This extract shows the remoteness of the area from all known civilisation.

Remember this point
The first comprehensive topographic maps of the Great Victoria Desert were compiled from positional information given by astronomical information – see NMA/E/32 (National Mapping Astronomical station). The only man made feature on this map, apart from the Anne Beadell Highway(?) (1962)

Wild T4 a 2-man astronomical theodolite used for positioning.
The two-way levelling traverses were carried out in 1966 by contractors working for the National Mapping Department. This is one of most longest and remote stretches of levelling in the Australian Height Datum.
The trig traverses run in the 1965 era were excellently reconnoitred – line lengths of up to 50 kilometres were achieved. Thus triangulation chains in South and Western Australia were joined and adjusted.
SHORED WATER HOLE - GREAT VICTORIA DESERT
THE INSCRIPTION “NATIONAL MAPPING” IS IN THE SHADOW
In 1981 Simon Coxon and Geoff Sandford went looking for one of two lonely trees blazed by L.A. (Larry) Wells. However, they discovered evidence that lead them to believe tribal aboriginals still inhabited the area. Widespread disbelief lead the authors to remain silent on the matter for years.
The search for the tree marked by explorer Larry Wells, “the most lonely marking of any explorer in Australia” was a temptation the authors could not resist. (Extract from Christopher Steele’s book)

At the southernmost point of this reconnaissance, Wells marked a desert gum as follows: Located some 10 miles east of the boundary between South Australia and Western Australia at latitude 28°.

Wells was surprised to see the distinct track of a bullock made in the three months since rain had fallen. The beast had obviously strayed some hundreds of miles from the nearest settlement in the south.
THE METHOD OF LOCATING THE BLAZED TREES

1. UTM coords of tree derived from computation of Wells’ traverse - these computations were
   • based on trig point coords (new) from which Wells commenced
   • Corrected in bearing for change in magnetic declination since 1891
   • Adjusted onto observed latitude and closing trig point coords (new)

2. Derived UTM coords were plotted on 1:250,000 topographic map

3. Aerial photography and topographic map were compared and points plotted on enlarged aerial photos, (92cm square!)

4. Authors navigated to derived locations, by counting sand hills on a south to north seismic line, and locating area on aerial photos, then struck camp

5. Latitude observation taken to locate Wells’ position, corrected for error and pegged

6. Stakes were laid out due east and west of correct latitude peg

7. Likely trees matching description were checked and marked on photographs
The distance between crests of sand-hills were accurately recorded, in chains, in Wells’ diary. These sand-hills are visible in current aerial photography. Thus the authors were able to navigate to campsites on the aerial photographs.
The sand-hills were also accurately plotted, via planimetric means only, in the early 1960’s. This enabled the authors to derive coordinates for the camp sites.
THE FLYING TRAVERSE - EASTERN POINT

Blazed tree        LAW 14.7.91
Latitude 28° 22′ 12″

Total distance
• from latitude obs = 83.6 miles
• from estimates = 82 miles
• agreement = 2%

Location of nardoo stone in May 1981

Water hole & encounter with aboriginals at 2 miles

Total distance
• from latitude obs = 76.6 miles
• from estimates = 75 miles
• agreement = 2%

Mt Agnes – July 18
27° 15′ 54″

Mount Watson – July 9th
Camp 17 - 27° 20′ 19″

July 17
19 miles

July 16
20 miles

July 15
17 miles

July 13
19 miles

July 12
11 miles

July 11
18 miles

July 10
18 miles

July 1
19 miles

July 27
020′ 19″

July 12
15′ 54″

July 10
20′ 19″

July 11
18′ 12″

July 12
15′ 54″

July 13
19 miles

July 14
16 miles
### REPEATING WELLS' LATITUDE OBSERVATION

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An even number of north and south stars were observed

| c.f. Wells | 28 | 22 | 12 |
| Error in position | 23 |

So I had some walking to do $\sim 23 \times 30$ metres $\sim 700$ metres north
The picture shows an aboriginal nardoo stone, (seed grinding stone), similar to the broken one found by the author on May 8th 1981 at the location shown on the previous slide. That stone found by the author has been returned to the desert.
A MOST LIKELY KURRAJONG TREE – EAST POINT
An eight year old Alice Sandford won seven Brownie Badges for her two weeks of camping in the desert.

Many rules were put in place on the 1986 trip to keep her safe but she turned out to be the hero – saving her lost father!
July 14th.—Few light showers last night. Let camels go at 4.20 a.m. Breakfast. Made start at 7.30 a.m. on same course, passing over same class of country as yesterday. At three miles passed old warleys on rise, and immediately afterwards came upon basin in sandhills, with a splendid rockhole at south side of sand-

there was good feed here for several miles for an hour instead of staying for lunch. Aneroid here at 9 a.m., 28.825, ther. 56°; 1,100 ft. above sea level. Calm, and fog just clearing off. A few mulga

our bearing. At three miles passed a low flat 1,000 ft. above sea level. At five miles a high point 1,275 ft. above sea level. At six miles top of ridge, 1,250 ft. above sea level. At twelve miles camped on south-east side of sandhills. At 3 a.m. the camels being very...
EXPEDITION SUMMARY

The observations made by Lawrence Wells were completely vindicated by later surveyors:

• Yes you can see for up to 50 kilometres from some sand-hills – this was proven by the later trig traverses.
• His claim to have seen 20 miles to the south from the blazed tree was correct.
• This exactly covered the region to where Giles had explored – the purpose of his “flying” traverses.
• The distances calculated from his camel paces were extremely accurate and enabled individual sand-hills to be identified.
• The Great Victoria Desert was subsequently declared unsuitable for pastoral purposes.
• Wells’ treatment of, and respect for, the local aboriginals was exemplary and showed him to be a man of great integrity.
• The artefact discovered by the authors had been found in the same area where Wells had encountered aboriginals in 1891.
• The artefact was left by the descendants of these Western Desert people?
• The last remaining tribal aboriginals treated “white-man” with the same caution shown by their ancestors
Aborigines see ‘white ghosts’

This was six months after the authors left the area & 5 years after the finding of the Broken Nardoo Stone.

KALGOORLIE — The seven Aborigines found in WA thought white people were ghosts existing only in the stories told by an old man.

The aeroplanes they saw in the desert sky made them realise that civilisation existed beyond the fringes of the Great Victoria Desert in the eastern corner of WA.

But they would not venture out of their tribal territory.

This remarkable situation has been revealed after a group of Wankatja Aborigines discovered relatives they thought were dead, wandering in sandhill country south of Blackstone, about 700 kilometres east of Kalgoorlie.

Seven people — four men (three brothers), two women and a little boy — have lived in the desert for 25 years. In that time, they have had no contact with the outside world.

Except for the eldest man, none had ever seen white people or modern civilisation.
The seven nomadic aboriginals. Pictured with two distant relatives who were required to translate their tale into English.
A water hole near the South Australian & Western Australian, (see a previous slide), border, previously known to only a few. The photo from May 1981 shows a depth of 1.2 metres. Until then this hole was had never been dry.

In May 1986 the hole was completely dry – drained by wild camels. Since this date water drums, then a tank have been placed at the site.
EPILOGUE

• Wells lost both relatives and expedition members, and had close encounters with death himself. The expedition was lucky to reach Victoria Springs in mid-summer. Camels had not drunk for nearly two weeks.

• Laurence Wells died after being struck by a train at the Blackwood railway station in 1938 – he was still actively involved in exploration at that time.

• The tribal aborigines found in 1986 could not acclimatise to “civilised society”. Most of those who did not die in the short years after drifted off into the desert and were not seen again.

• The man with the wheelbarrow!
A COMMEMORATIVE PLAQUE TO L.A. WELLS, “LAWARENCE OF AUSTRALIA”.

NORTH TERRACE, ADELAIDE