

THE TURNER SURVEY POST - A MYSTERY SOLVED

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INTRODUCTION

Who amongst you has solved a mystery? Who would not welcome the chance to solve a mystery? I have. How did it come about?

This is the story of the Turner Survey Post.

The story begins, or so I thought, in 1965. I was then a trainee Surveyor and working with my Master Surveyor, Mr Basil J Marshall, on the subdivision of the Big Desert in Victoria. It may come as a surprise to Europeans to know that Victoria has a desert, in fact it has three, the Big Desert, Little Desert and the Sunset Country, all in the north west of the State. They are vast tracts of sand dunes, originally covered in dense Mallee scrub with no rivers or watercourses.

In the 1950's discoveries of trace elements which could bring the desert soils into production were made in South Australia where there is similar country. This led in the 1960's to the development of part of Victoria's Big Desert for grazing land. A Lease of 2310 square kilometres was issued to a large Insurance company which undertook the conversion of 'desert' into farmland.

Surveyor Marshall was given the contract to subdivide the Lease into Roads, Reserves and Allotments on behalf of the company. This involved the traversing of many kilometres (measured in miles in the 1960's) of new boundaries and a re-establishment survey of that part of the 36 degrees parallel of Latitude South which crossed the Lease area to its western side on the South Australian Border. A Vermin Proof fence had been erected along much of the parallel to keep wild dogs (dingoes) and rabbits out of settled country south of the fence. However towards the South Australian Border the fence had swung to the south to include desert.

The re-establishment of the 36 parallel meant traversing the line marked in 1884 by Authorised Surveyor Tom H Turner. Most of his survey marks had burnt off at ground level but I found an iron Survey Marker Post near the Border, still intact and standing after 81 years. Surveyor Turner had marked the line as a Government contract as the framework for a subdivision of the northwestern part of Victoria.

In 1999, nearing the end of my survey career in the State Government, I was posted to Melbourne, the capital city of Victoria as Acting Deputy Director, Valuation & Survey Services. In the foyer of the Surveyor-General's office was the upper portion of an old iron post. A card on it said 'Survey marker post placed by Mr T H Turner Authorised Surveyor, in July 1884 on the 36 parallel of Latitude South between Lake Hindmarsh and the South Australian Border'.

Was this the post I had 'found' in 1965, how did come to be on the floor of the office and who was T H Turner anyway? He was clearly a surveyor but what was his

background and training, where did he come from, why survey across a desert, why use iron posts, were there descendants, and many other questions.

These matters were a mystery. The first clue, the remains of a 115-year-old iron post. Initially, the post was refurbished for proper display. It was mounted on a red gum plinth with a brass plaque setting out the details described above. Figure 1 shows the refurbished post.



Figure 1.

RESEARCH

All journeys begin with a first step. I contacted Peter Knights, retired Survey Investigations Officer of the Surveyor-General's Office. He had written an article in a Surveying Journal in 1994 on 'Survey Marks and Monuments' which included comment on Turner's iron posts. It stated 'When considering the exploits of early Crown surveyors, Turner must rank as one of the most resolute and tough'.

Peter's advice was 'Rightly or wrongly, a percentage of Crown surveyors bought land in which they were involved in the survey of – a NAME SEARCH for Tom H Turner should be made at the Land Titles Office to see if he held land'.

This revealed that Turner had owned many Allotments in areas he had surveyed but no definitive answers. A search was then made of the Victorian Surveyors Board Register, a huge bound volume guarded by the Assistant Secretary and containing the names and details of all Victorian Surveyors since 1895. Prior to the passing of the first Surveyors Act in 1895, Surveyors were authorised to effect surveys for the Board of Lands and Works under the regulations of the Land Act 1869.

Tom Turner was listed and the Register gave a date of his death as 17 April 1918. A Death Certificate was then obtained which gave much additional information. This included his age, place of birth, parents' names, the name of his wife, his age when married, where buried and the names and ages of his five children.

The two sons listed, Rockley Leahy and Tom Langford, were both found to be in the Surveyors Register with a date of death for the latter.

Next, a visit to the Springvale Cemetery and the location of the Turner grave. Cemetery Administration was able to supply the number and row and a walk amongst the headstones soon revealed a substantial granite monument. It had the inscription 'In Loving Memory Tom H Turner, Fellow of the Institute of Surveyors Victoria', and the dates of death of his wife, eldest son Rockley and daughter Hazel.

A search of the Newspapers of that time revealed an Obituary in the Horsham Times dated 19 April 1918 for Tom Turner. It said he had seen the Wimmera pass from a sheep run to its present state of prosperity. The minute books of the Institute of Surveyors Victoria in Melbourne from 1880 were then perused and gave much information on Turner's involvement and his election as a Fellow in 1918.

Now, it was known where and when Tom Turner died and some details of his family. What remained were his early days and tracing any descendants.

The search then went into the State archives. The Victorian Government has documentary records since the beginning of white settlement in the 1830's and much of this is recorded in the Government Gazettes. Detailed indexes are held at the Latrobe Library. Many hours were spent in the evenings looking for references to Tom Turner and later his brother, Edwin Woodward. Early employment of Tom H as Temporary Mining Registrar (1872) and Wardens Clerk (1873) were found both in the absence of Edwin Woodward. Tom H obtained his certificate of competency as a surveyor and was authorised as a Surveyor in 1875 whilst living at Benalla. He had trained with his brother who was also at Benalla.

Tom H Turner's Marriage Certificate gave details of his marriage in 1876 to Eva Leahy from Ireland. Edwin had married her sister Josephine and their brother, Alfred Leahy, was best man at Tom's wedding. Leahy was the family name of well-known surveyors in Victoria's western district. Was there a connection? Subsequently, it was found that Alfred was the father of the western district surveyors, Alf and Harold Leahy.

How to trace the descendants of Tom Turner? His immediate family was gone; the next generation might still have survivors. A name search for his sons gave a result for Tom Langford Turner. A telephone call revealed an elderly gentleman who was the grandson of Tom H Turner but he could not assist with information. However his son was traced and contacted. The great grandson of Tom H Turner lived in Melbourne and was interested in the research. He also had some family mementoes.

A visit to the great grandson provided me with a copy of 'The Turners of Augusta', a family history of the Turner family, particularly that of the grandfather and father of Tom H. It included a letter written in 1854 describing an aunt's assistance at the birth of Tom H himself.

The great grandson had the original theodolite and draughting instruments of his surveyor grandfather, T Langford Turner. They had been inherited from Tom H Turner. T Langford Turner had died in 1948 and for many years the theodolite had been kept on a farm in a hay shed. T H Turner's great grandson recovered it after 30 years.

The story of Tom H was largely solved. What then of the survey across a desert and the placing of iron posts?

SURVEY RECORDS

The original Field Notes of Turner's 1884 survey were located in Departmental records and gave relevant dates and details of the survey.

Information on the purpose of the survey was found from the Nhill Historical Society and histories of the development of that part of the State. A newspaper account of a journalist's visit to Turner's survey camp in 1884 was found from Knight's article.

The Departmental file on the survey of the Victorian – South Australian Border was searched and gave background on Turner's retracement of the Border.

The iron posts were Turner's innovation because the desert was subject to frequent bush fires and wooden posts would have been destroyed. He was right; the iron posts were still being located in surveys in the 1960's, 80 years after they were placed.

Are any of the iron posts still standing? This led to an expedition to the Big Desert to search for remaining survey posts using Global Positioning System technology. Was the post in the Surveyor-General's Office the one I 'found' in 1965? Yes, the Surveyor-General some years ago after a farmer had reported it as fallen had recovered it.

FIELD INVESTIGATIONS

A colleague and myself undertook a field expedition into the Big Desert. Equipment included a four-wheel drive vehicle, real time GPS receiver and metal detector. Preliminary work involved checking of survey records to determine condition of the iron posts when found, decisions on which marks would be worth searching for and calculation of provisional co-ordinates.

The GPS survey commenced at the starting point of Turner's survey. It was a road intersection 15 km north of the small town of Jeparit and a three-hour drive from Ballarat. The fences on the 142 meridian of Longitude east and 36 parallel of Latitude south were lined out and co-ordinates taken see Figure 2. To enable comparison with modern adjusted values, a nearby coordinated Permanent Survey Mark was observed.



Figure 2.

We had a starting point for the survey. Our observed values for the corner were $141^{\circ} 59' 45''$ Longitude and $35^{\circ} 59' 58''$ Latitude compared to the 1884 figures of $142^{\circ} 00' 00''$ Longitude and $36^{\circ} 00' 00''$ Latitude. It must also be considered that Turner's location was based on the then known figure of the earth, whilst our determination was based on the 1964 Australian Geodetic Datum.

We then travelled to the west, skirting around the shores of Lake Hindmarsh over which Surveyor Turner had carried his survey by triangulation. A slight detour brought us up a lonely track to a grave of 'Mrs Jardine and child' of 1847. Jardine had a sheep run on the fringes of the Big Desert and his wife had died in childbirth. At that time, the nearest medical assistance would have been two weeks journey away in Melbourne.

Back on the west side of the Lake we came onto the line of the Vermin Fence and Wire Netting Road. A check co-ordinate was taken on the corner with the Latitude as $35^{\circ} 59' 58''$. We were on the right line. Now came the difficult part. We carefully drove along the fence for a distance of 3.7 kilometres to locate Post 2, at $141^{\circ} 48'$. Turner had intended to place the iron posts at one tenth of a degree of Longitude intervals but the first had fallen within deep waters of Lake Hindmarsh.

At the odometer distance we stopped the four-wheel drive and assembled our equipment. We found that sand drift had almost covered the original fencing and a modern fence had been erected along the top of it. That meant, if the survey post still existed, it was fully buried. The GPS receiver was used for an approximate co-ordinate and then the metal detector brought into play, fine-tuned on a metal plate. Great excitement when it started to beep loudly within half a metre of the GPS fixes. Careful scraping away of the sand to a depth of about 15 centimetres revealed the caved in cap of the iron post. We excavated down the sides to a depth of about half a metre and found the post to be in good condition, 116 years after it was placed. It was photographed, coordinated and respectfully reburied for posterity. See Figures 3 and 4.



Figure 3.



Figure 4.

Post 3, 9 kilometres further to the west and into real desert was found destroyed and lying on the ground. After a unsuccessful attempt to drive over steep sand dunes, a detour to the south and west brought us back onto the Vermin Fence, 2.3 km west of the calculated position of Post 4. This post was found to be still standing and in almost mint condition, see Figure 5. The only problem was that it had two bullet holes in the side and was occupied by a hive of bees. An extremely careful approach from behind allowed it to be coordinated.



Figure 5.

The following day, the search resumed for the post at $141^{\circ} 00' 00''$ of Longitude, 90.17 kilometres west of the starting point. The remains of the iron post were found under a fence line in farmland and coordinated, see Figure 6. Two further posts were then located and coordinated, number 11 at Turner's establishment of the Victorian - South Australian Border and number 12, 6.66 km to the north.



Figure 6.

Comparisons were then made over the measured length of the lines. The Co-ordinates of Post 10 were observed to be $140^{\circ} 59' 45''$ Longitude and $35^{\circ} 59' 58''$ Latitude as against Turner's values of $141^{\circ} 00' 00''$ and $36^{\circ} 00' 00''$. Effectively, this meant that Surveyor Turner had held his Latitude and Longitude exactly, across 90 kilometres.

The measured distances of Turner's survey agreed to 1 part in 4517 between Posts 2 and 10, across 72 kilometres of steep sand dunes.

CONCLUSION

Field investigation has established:

1. Five of the 1884 iron survey posts were located, photographed and coordinated in the course of a two-day expedition.
2. The terminals of the 1884 survey were determined, enabling comparisons with modern dimensions.
3. The 1884 survey was of an extremely high level of accuracy, even by modern standards.
4. This research project has not only solved the mystery of the Turner Survey Post but has revealed the competence of our professional predecessors.
5. Victoria is fortunate in that our original survey records remain intact and old survey marks can still be found with modern equipment in a very short space of time.

There is further scope for research into early surveys and survey methods in Victoria.

It is important, looking forward into the future that we do not overlook the past. Properly monumented surveys are essential for the maintenance of the State's cadastre.

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