



SteamRanger's Heritage - an insight into our past

BACKGROUND

*Written by SteamRanger's then Infrastructure Manager
this article was published in three parts in successive issues of "Catchpoint".*

*It describes in great depth the construction of the line from Mt Barker Junction to Strathalbyn
and the branch to Milang, concluding with key financial details.*

THE CONSTRUCTION OF THE MT. BARKER JUNCTION - STRATHALBYN RAILWAY AND THE SANDERGROVE - MILANG RAILWAY

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The contract for the Mt Barker Junction to Strathalbyn railway was signed in June 1882 by Messrs Walker & Swann who agreed to carry out the works to the satisfaction of the Engineer in Chief for a sum slightly in excess of 143,000 pounds. It was not until September 1882 that the navvies made their appearance and the first sod was turned. The extent of the work was 19 miles 40 chains extending from a point on the second section of the Nairne line 31 miles from Adelaide to the terminus at the Strathalbyn Tramway.

The portion of the line which lies between the Junction and 20 chains in the middle of the McGraths cutting at the foot of Littlehampton was sublet to Mr L.T. Watts, the agreement being to finish the earthworks and deliver them to the original contractors by the end of March 1883. The largest cutting of that portion of the line between the Junction and Mt Barker Station is that known as McGraths and only half of this to a point 2 miles 20 chains from the Junction was included in the sub contract taken by Mr Watts. The cutting which gave him most trouble is that about half a mile from the commencement point from which nearly 16,000 yards of earth was removed.

Within a few months fully 12,000 yards had been removed and deposited on the adjacent banks of which number 5 containing 10,000 yards of filling is the largest. There was little work of any magnitude on this portion of the line, both the earthworks, cutting and the bridge over the creek at Littlehampton were completed within 6 months. The ruling gradient of the line is 1 in 45, the descent into Littlehampton appearing very steep. On the side of the hill above the brewery, Messrs Walker & Swann were fortunate in opening 3 excellent ballast pits and the work of quarrying and breaking was steadily pushed forward. Within 6 months over 4,000 yards of metal had been stacked on the side of the line. As the average mile of railway line consumed 3,000 yards of ballast, the capacity of the quarries were severely tested by the contractors. The contractors directly employed a maximum of 800 men in the section starting from the end of Mr Watts subcontract at 2 miles 20 chains to a point at 14 miles.

The contractors having almost completed the earthworks from the Junction to Mt Barker by mid August 1883, received instructions from the Government to push on with the work of plate laying on that portion of the line. The Mt Barker Station, triangle and sidings were requested to be completed with as much speed as possible so that the opening of the railway to Nairne and Mt Barker could be performed concurrently. The Government believed the extra expense in accelerating the schedule was justified. Mr Walker, considered it better to concentrate his men on one section of the line at a time than to scatter them over the full extent of the contract in lesser groups. The work in McGraths cutting which contains 19,541 yards of excavation and in the 14 chains embankment containing 15,816 yards of earth between that and Mt Barker Station gave employment to a great many men and several horse teams. Extensive clearing made for the station yards and surroundings provided business for several more.

Plate laying began at the Mt Barker Junction end of the Mt Barker railway during the first week of November, 1883. The contractors employed a double gang of men in order to ensure 16 hours labor each day on the 3 miles of line. When the permanent way has been laid as far as the ballast pits at Littlehampton the contractors locomotive began working from that point and the work of ballasting rapidly carried out. Much of the plate laying at the Mt Barker Station had been completed and the sidings and switches completed when the platelayers from the Mt Barker Junction reached here. Between the station and goods shed a stockpile of 12,000 gum sleepers were adzed and bored mechanically, using a portable steam engine for power. As the sleepers arrived in trucks, they were adzed and bored at the rate of 1 per minute, stockpiled, then removed along with rail and ballast as required by the contractor's locomotive and trucks. During this time Messrs Bailey, Davis & Wishart, the contractors for the Nairne line, were within a mile of Nairne with the rails.

A special train took Messrs Mais and Patterson, Government Engineers up the line as far as the Junction and both these gentlemen urged on the contractors the necessity of hastening up the works but were informed that the only reason of delay as far as Walker & Swan were concerned was the difficulty in procuring the necessary materials for the plate laying from the Government.

From the Mt Barker station 34 miles from Adelaide, the line skirts the southern portion of the township the ground, level. Mt Barker Creek is crossed by a single span iron bridge of 40 feet length, with abutments of bluestone. Here was sited a force pump with horse works which supplied 3 elevated 400 gallon tanks for the contractors engine, the tanks being emptied 3 times per day. Very little surface forming had to be done until the small cutting about a mile distant is reached. This had been completed by March 1883 as had the necessary work of lowering the crown of the intersecting district road. Near here was another stockpile of sleepers supplied by Messrs Harvey and Wilkins of Wistow. Approximately 2,000 sleepers were required for each mile of railway.

The first work of any magnitude is that known as Bob Summers cutting (number 19) which over 19,000 yards of earth were removed. From here on, heavy cuttings and long embankments are the order of the day. The works here were under the control of Mr Summers. The red and sandy soils taken from this cutting forms a contrast to the white clay taken from the next cutting, number 20. On the hill above cutting number 20 which is set down as containing 6,427 yards of earth it was intended to establish the main camp and the principal stables, store and some of the vestiges of the navy metropolis but unfortunately water was not obtainable in the vicinity and they were forced to seek other localities. The office of the Government Engineer was situated on the summit of the hill above this cutting and from this can be obtained a splendid view of the country as far as and beyond the lakes in one direction and to Mt Barker.

The largest cutting (number 21) on the line is at Philcox Hill. This contains over 20,000 yards of excavation, is 12 chains in length and a maximum depth of 33 feet. The contractors laid a tramway to facilitate this large excavation. The method of filling and emptying the trucks was such as to ensure the greatest economy of both time and labor. A drive 10 feet square was taken into the face of the hill on the line of the permanent way and openings left in the timbering at the top through which the spoil was loaded into the trucks which are ran underneath. As the face of the cutting was removed, the drive extended. So efficient was this system that although the formation is composed for the most part of hard stone, nearly half of the total excavation had been removed in less than 2 months. The trucks were self acting, emptying themselves over the embankment as they struck a block at the end of the tip so that the number of men required was minimised. So well had the contractor's engineer performed his work and so complete had the ganger in charge of the cutting carried out his instructions that the works were not even an inch in error. This cutting which is the deepest on the entire length of the contract was completed within 6 months.

Just beyond this cutting a high embankment was widened for the Philcox Hill station then, narrowing meets the embankment formed by the earth from the next relatively small cutting. Some of the material being excavated from cutting number 26, 11,506 yards, was stockpiled and men employed in breaking it up for ballast. Number 27 cutting which only contains 763 yards and the following cutting (2,357 yards) provided the material for the long embankment between them. Near this point 8 miles 50 chains from the Junction is Bugle Ranges station and here the Macclesfield people who patronised the railway had facilities for the receipt and discharge of their produce. Cutting number 29 is 7,290 yards is long but not deep.

This cutting is curved to the 16 chains radius and the line from this point surfaces gracefully around the hill, the sharpest turn between the 9th and 10th mile being to a 10 chain radius. From here, the country becomes more open and the view, instead of being confined to the adjacent hill sides stretches over a very wide range of tree covered and undulating plains to the left of the hill while the right is abruptly shut off by the steep sides of the Bugle Ranges. The next cutting (number 30) contained 1,619 yards of soft and easily removed soil the work of excavation being performed with a plough drawn by 9 yoke of oxen. This more than counterbalanced the difficult nature of the formation in cutting number 31 which is composed of nearly 4,000 yards of soft rock of which gun powder had little effect. A large gang of men were employed for 14 weeks on the works in connection with the cutting. Just beyond the cutting the Wistow - Strathalbyn road crosses the line at 9 miles 40 chains and 10 chains further on again a gang of 8 men were employed in laying down a 3 feet concrete culvert.

By November 1883, the earthworks on this section of line had been completed, platelaying and ballasting almost completed. From here, a party of 26 men and 2 boys under the control of ganger Campbell were engaged upon 3 large cuttings through very difficult stony country. The first contained 8,000 yards of earth provided more than 2,000 yards of good ballast. The second cutting at 10 mile 30 chains contained 12,000 yards of excavation and this was also, for the most part through a hard rock but provided 8,000 yards of ballast. The ballast from these two cuttings (10,000 yards) was stacked, the contractors laying down a siding for their own use to load the rock and distribute it elsewhere.

In addition to ganger Campbell's men, 20 stone breakers were at work on this portion of the line. These men were paid by the quantity of rock crushed, being their own employers. The third cutting under the control of Mr Campbell contained about 7,000 yards of earth. Situated close by was the main 11 mile camp where the stables, a great many tents and a few of the inevitable sly grog shops were located.

The payment of the different gangs was greatly simplified by the method adopted by the contractors. The time keeper, having ascertained from the different gangers the number of hours worked by each of their men, the amount of wages earned was calculated and enclosed in a small packet, these packets being distributed in small canvas bags bearing the name of the different gangers and by these means, all confusion and much loss of time in the actual payment avoided. As the names of the men were called out, the time keeper checked the amount on his books and avoided any danger of dual payments. The time taken in paying a gang of 20 men was about 5 minutes, the liability of mistake being minimised by the calculations being carried out in a quiet office instead of amid the hurry and bustle of a camp. There was very seldom any rumbling and never any dispute.

At a distance of 11 miles 43 chains from the Junction, 19 men under the direction of ganger Brake were employed with a cutting containing 7,000 yards of terrible and hard excavation. There is a ridge of rock running traversely across the line and although this did not look very formidable, it had been a source of great delay. All through the winter, Brake and his men toiled at this spot and during that time 6,000 yards of teasing stone removed and placed into the embankment beyond. At 11 miles 50 chains a party of 30 men under ganger James worked in the midst of undulating sheoak country. The cutting contained 11,000 yards of fine flaky stone which was difficult to loosen and cumbersome to handle. Even after blasting this 20 feet deep cutting was one of the most troublesome on the line but fortunately here too, some 2,000 yards of the material was suitable for ballast, being broken up on site and stacked until the plate layers arrived.

In the following embankment, a subway was constructed allowing Mr Gemmels cattle access between paddocks. The side of the hill which descends from Brake's cutting in the direction of Strathalbyn required benching to keep the embankment from slipping bodily into the valley beneath. The next cutting is 12 mile 18 chains involved the removal of 3000 yards of mica rock, heartbreaking in its stubborn resistance to the efforts of powder and dynamite and just beyond it, the district road ascends the hill, the railway line running parallel with it. Here was situated the quarry from which the splendid stone used in the base and arches of the Mt Barker Creek Bridge originated.

A very extensive quarry was opened up on the hill at the base of which the line passes and the stone used to construct the bridges over the creek at Burnside and the river at Strathalbyn. The quarry was one of the most valuable means of obtaining reliable building stone for foundations and other heavy work in the colony. The stone also found use in kerbing at Pt Adelaide and King William Street. It was proposed to erect a station a few hundred yards past the quarry but the Government decided the site should be by Mr Gemmell's property.

At 12 miles 13 chains the railway by means of a cutting and embankment forms the circuit of quarry hill and from this point, a splendid view can be obtained. At the limit of the horizon, a silver line denotes the presence of the lakes while the wide belt of living green which fades imperceptively into blue marks the of the Murray scrub. Strathalbyn may be seen lying at the foot of the gorge. Huge blocks of stone from the quarry above lay on the side of the shallow cutting around the foot of the hill, awaiting the contractors use. These were carted to Strathalbyn and deposited on the site of the bridge, the drays on the returning journey bringing sand for use in culverts and elsewhere.

As may be judged by the nature of the country, the work of the navvies was difficult and slow here but the stone made good ballast. The elevation of the ground and its rapid descent to the watershed beneath prevents the rain from soaking in as it does on the plains, the heavy weather did not have a delaying influence on this part of the contract as it had elsewhere. In some of the heavier cuttings especially those that had been taken out stepwise on the downgrade the downfalls of winter had accumulated and formed miniature lakes. These had to be drained off before the works proceeded. There were other works such as the fencing on each side of the line undertaken during winter.

The cutting and embankment around the quarry hill as well as the larger works at 12 miles 50 chains was under the control of ganger Rolfe who supervised 25 men. The following cutting contained 7,000 yards of easy excavation being curved of radius 12 chain. At 13 miles 27 chains ganger Simmons and 19 men were engaged on a comparatively easy cutting of the 8,000 yards. A station was provided beyond the adjoining embankment. The principal camp on the line was situated here, a canvas town on the high ground to the right of the line, accommodation being given in the tents for approximately 100 men. The ever present sly grog (illegal alcohol) shops were here also and as a result of bad liquor much time was lost by the men who frequented them. The contractors believed that had the Government allowed legitimate trading of alcohol at these sites, much of the absenteeism due to bad alcohol would have been avoided.

Just beyond the camp is an embankment containing 24,000 yards of spoil formed, partly from the earth from Simmons cutting and partly from that of the next excavation. At 13 miles 60 chains is the Stirling Hill cutting excavated by ganger Bob Summers who had 40 men under his control. The cutting required the removal of 26,000 yards of earth, the formation level is 30 feet below the surface at the deepest part. The ground is of a stony character and work advanced slowly. Owing to the direction of a stony ridge which cuts traversly across the line, work had to be started right at the lower Strathalbyn end of the cutting. This necessitated the spoil being carted a considerable distance before being tipped to form the bank previously mentioned. The men, having reached the formation level then engaged in cutting a passage wide enough to allow the drays to pass through the hill and when this had been completed, work connected with both cutting and embankment progressed with far greater rapidity.

There is a small embankment on the Strathalbyn side of the cutting and through this a large opening was built for the convenience of Mr Stirling's cattle. Just beyond Stirling's Hill the railway curves away to the right in order to get the distance necessary for the descending grades into Strathalbyn.

At 14 miles 25 chains on the down grade to Strathalbyn, ganger Thompson and 30 men were employed for some weeks on a cutting containing 4000 yards of comparatively easy excavation. Twenty chains further on ganger Tyner had 30 men hard at work on a large cutting from which 19000 yards of earth were taken. The formation level here is 25 ft below the surface at the deepest part and the embankment at the Mt Barker end absorbed 13000 yards of earth from the cutting. From here, a very extended view of the surrounding country is obtained and the streak of silver which marks the lakes is both broad and long.

Beyond this point the line takes a more decided curve to make distance for the descent to the plains and the ruling grade for some chains is 1 in 45. A small embankment 600 yards from the Strathalbyn end of Tyners cutting gave men employment in wet weather when other work sites were flooded out. Beyond here, a company of men under the charge of ganger Carpenter were engaged in laying concrete culverts, these men being designated the pioneers of the line for they always worked in advance of the body of navvies so that there was no delay in building embankments through these close valleys which contain the natural water courses of the country.

A Mr Merchant on whose property Tyners cutting was situated was a breeder of stud cattle and horses, he viewed the light iron posts and the scarcely perceptible wires of the railway fence with disapproval from the first. Fearing his stock could breach the fence, possibly being killed by trains, he made representations to the Engineer in Chief with the result that a substantial post and wire fence be provided for the full extent of his property 3 miles while those paddocks being devoted to cattle and horses were further secured by the addition of the top rail, the extra expense incurred by this alteration being borne by the land owner. Parts of this fence are still visible today.

At 16 miles 34 chains a district road crosses the railway line. Beyond this, the work consists of surface forming of some distance. The portion of the line which was originally sublet to Mr Jenner is reached at 17 miles 32 chains. Mr Jenner finished this particular piece of excavation before abandoning his subcontract. The only major bridge on this section of the line is that at Burnside having 5 openings each of 11 ft span.

On the opposite side of the creek, 18 bullocks yoked to a plough cut the shallow cutting through rock, the material being used to form the adjacent embankment. At 18 miles 15 chains ganger Gardener and 30 men were employed on a cutting which contained about 1200 yards of easily removed earth. From here the grade lessens considerably to 1 in 97 and this soon abates to 1 in 200 and subsequently 1 in 300 entering Strathalbyn on the level. Strathalbyn is reached at 19 miles 45 chains from the junction 49.5 miles from Adelaide. The original line which was surveyed, fenced and otherwise prepared for the navvies made a detour to the left from Gardeners cutting and missing the town altogether reached the station by a somewhat circuitous route,

The Angas River is crossed by a bridge consisting of 2 spans each of 40 ft supported on 2 ft 3 inch diameter cast iron columns embedded in concrete foundations. The rocky bed of the river formed a splendid base on masonry, in fact some of the materials for the backing up courses were quarried on the spot. The contractors in order to economise labor and time erected a crane using it for both the quarry which was in the bed of the river and the bridge works. The time specified for the completion of the line from the Junction to Strathalbyn 19 miles 45 chains was by June 30th 1884 and the contract price for the work is 14,377 pounds 16 shillings and 8 pence. At the peak of activities about 800 navvies were employed and in addition to these there were 15 men engaged in concrete work, 3 or 4 in charcoal burning, about 60 in stone breaking and 70 working on reservoirs. Wages averages 10 pounds per week (40 hour). There are 72 cuttings requiring the excavation of 375,000 cubic yards while there are 74 embankments totalling 100,000 cubic yards. About 8000 cubic yards of concrete was required for culverts, bridgework etc.

The Mt Barker Junction to Strathalbyn line opened without ceremony on 15 September 1884. The Engineer in Chief made an inspection a few days prior to the opening, arranging for the transfer from the contractors to the Government. The last train to Mt Barker on the Saturday was extended to Strathalbyn to start the service on the following Monday. The only alteration to traffic as a result of the extension of the service was that the evening train to Mt Barker arrived an hour later and the fourth train from Adelaide on Saturdays was cancelled.

SANDERGROVE - MILANG BRANCH LINE

Construction of the Sandergrove - Milang branch line began during September 1882. At the Sandergrove camp, construction proceeded steadily. The first embankment at Sandergrove posed a problem. It was necessary for the earth to be taken from, alongside the work, being dragged up to form the bank. At the start of construction about 100 men were employed, some working ahead in clearing etc. The supply of water was a great problem. 400 to 500 gallons per day being required and, as a result, the camp had to be moved earlier than planned. Mr Hudson, the sub contractor decided to move the camp some 5 miles further on. This gave the Milang traders a considerable spurt as that township then received the benefits the navies money offered.

Construction proceeded smoothly. By December 1884 the railway was completed by the contractors Messrs Walker & Swan. The Government did not begin using it until three weeks later. The country over which the line passes is throughout of a flat and sandy nature and was covered with a monotonous scrub. The route was so straight that, except for a large culvert near Sandergrove and some smaller ones at various points along the line, the construction of the railway was of a very easy and straight forward character. In order to get into Milang, a complete semicircle was ascribed by the line which touches the limit of the town immediately opposite the jetty. The local press reported the railroad was built in first class style with the contractors engine and trucks running smoothly over it at over 30 miles per hour. The line was opened on 17th December 1884, a special train being run conveying dignitaries to Milang.

The next station on the line to Victor Harbor is Finniss (once called Queen's Own Town). A little over a mile past here is the Finniss River. The pits from which Messrs Walker & Swann obtain the ballast used by them on the Sandergrove to Milang railway originally provided ballast for the tramway. Situated on a Mr Rodgers property near the river Finniss, the pits lay abandoned for many years. The tramway level here was some feet above the natural level of the ground and in order to run the trucks down into the pits the contractors had to put in nearly a mile of rails including all necessary curves and sidings. The quarry was situated in the valley of the Finniss River, just below the Railway bridge and were approached on a branch line from the main rising on a grade of 1 in 33 for a couple of hundred yards to shunt onto another roadway falling with the same grade into the valley beneath where it branched into several shunt roads. Watering facilities had to be provided for the steam engine which worked the quarry, an old tree which had fallen across the river provided the stage for the lift pump which was worked by horses. The water was pumped to an elevated tank which also found use for engine washouts. A pit and ash pit were sunk for engine maintenance purposes. The contractors engine was capable of hauling 6 to 8 truck loads of ballast up the incline. The work of putting down the rails for obtaining the ballast involved the contractors in an expense of 1,200 pounds but they were amply repaid by the quantity and quality of the material. The firm who built the original tramway line also quarried ballast here, the hills and depressions marked the spot where they took the ballast for this work.

Strangely, from some of these mounds, which were formed from the screenings of the accepted ballast were obtained the finer gravel necessary for proper binding. Messrs Walker and Swann took all of their ballast from one wide excavation and had as many as 100 men working there at one time. The quality of the material was proved by the excellent condition of the Milang railway and the other lines on which it was used as the Government had no ballast pits for maintenance purposes on the southern lines at that time. The stone also was used in the construction of Strathalbyn Station, the Bank of Australasia in Mt Barker, and the Barr-Smith residence also in Mt Barker.

On the other side of the Finniss were the pits from whence Messrs Fry took the ballast for the line from Currency Creek to Goolwa. Horse traction was used to drag the loaded dray from the pits to a stage alongside the tramway where it was transferred to ballast trucks.

Within a few months of opening, a document was produced in answer to questions of cost increases in the construction of the Nairne, Strathalbyn and Milang Railway lines : -

The following was laid on the table of the House on the motion of Mr Matisons MP., Chairman of the Railways Commission. Adelaide - Naime railway :

Mt Barker - Strathalbyn - Milang

Amount authorised for construction	£215,754
Expenditure to date	£162,450
Works in hand or to be completed	£ 97,240
Deficiency	£ 43,936

This deficiency is accounted for thus :-

Engineer in Chief estimate	£ 8,631
Alteration in working Milang branch	£ 12,500
Works with no provision made	£ 4,088
Excess on land purchased	£ 15,500
Total	£ 40,719

Mt Barker - Strathalbyn line

Of this line it may be said that had the Engineer in Chief's estimate been allowed to go before the Parliament as prepared by him and only the works contemplated and estimated for been carried out. there would have been very little excess. As it is there will be a deficiency of 44,000 pounds and is accounted for as : -

1. The estimate submitted by the Engineer in Chief for the construction of the line to Strathalbyn with branch to Milang was reduced 8613 pounds by order of the Commissioner.

2 The branch to Milang was originally to be worked by horse traction. The late Minister responsible gave instructions that the line was to be worked by steam, this necessitated the provision of locomotives and wagons, conveniences, watering facilities and engine shed, water supply etc amounting to 12500 pounds in addition to the estimate.

3 The stations etc included three in addition to the number authorised by

Parliament and provided for in the estimates had to be made on this line. It was the extra expenditure of 4088 pounds, the amount has exceeded the estimate by 15500 pounds. The estimate for this railway was prepared in such haste there was no time for the valuator to walk over the ground. In addition a late change in the plans for the railway in entering Strathalbyn has resulted in additional expense of 5000 pounds.