



SteamRanger's Heritage - an insight into our past

BACKGROUND

This lengthy article written by a previous long serving SteamRanger Operations Manager and manager of the 1990/1991 line rehabilitation gives an excellent insight into the establishment of the SteamRanger Heritage Railway between Mt Barker Junction and Victor Harbor.

It describes the Victor branch line in some detail; its initial building and early railway services, discusses the incremental closure of the line by Australian National and includes a detailed chronological account of the physical rehabilitation of the line to operate as a heritage railway

The printed version of this article was published in three successive issues of the *ARHS Bulletin* and contains a large number of photographs, tables and diagrams which, if included in this website version, would result in a very large file which would be difficult to navigate through and would have a long download time. Only some representative photographs and diagrams are included in this file and a full set can be downloaded by accessing a second file listed on the website.

The text in this online version has had a number of additional subheadings added to make it easier to scroll through the article

THE VICTOR HARBOR LINE

by Dean L. Harvey, O.A.M.

ARHS Bulletin Vol 43 Nos 657-659 July, August, September 1992



Loco 723 at Mt Lofty heading towards Victor Harbor, January 1950
Photo: Lionel Bates (NRM archives)

The Victor Harbor branch line leaves Australian National's main South line at Mount Barker Junction. It is 82 km long and traverses a veritable kaleidoscope of scenic country en route to the former seaport of Victor Harbor

Part 1 - History

The section from Goolwa to Port Elliot, 11 km distant, was built in 1854 and, although horse traction was used, it is recognised as being Australia's first public railway. The line was built to convey produce, brought down the River Murray by paddlesteamer, from Goolwa to the proposed ocean terminal at Port Elliot. One of the two intermediate crossing loops provided was at Middleton and this station was to become important 15 years later.

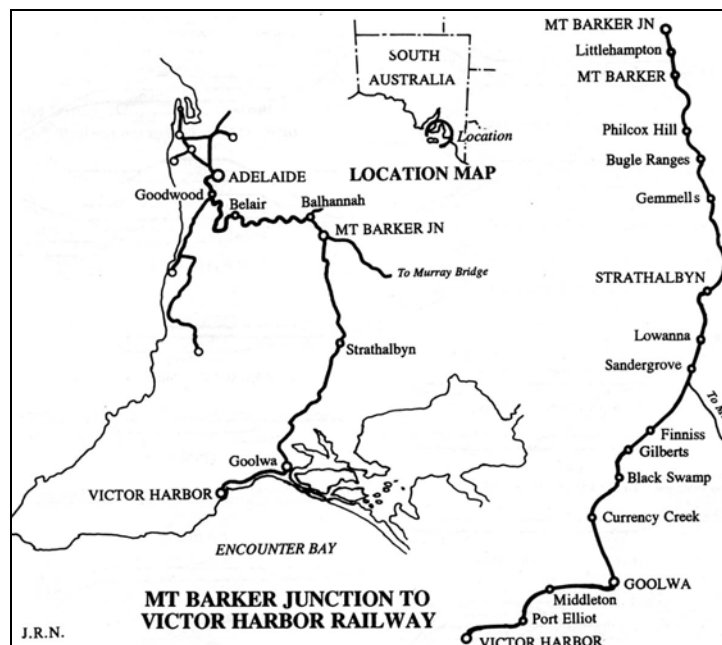
Unfortunately Port Elliot proved to be an unsafe harbor with seven ships being wrecked in the first ten years. So, in 1864, an extension of the railway to Victor Harbor was opened. In 1869 a branch was opened from Middleton to Strathalbyn but still horse traction was used.

In March 1883, the first section of the Intercolonial Railway from Adelaide to Melbourne was opened for traffic as far as Aldgate. Work continued at a rapid rate and on 28 November 1883 a further section to Nairne and a branch to Mount Barker were simultaneously opened.

Five hundred men were employed on the difficult terrain between Mount Barker and Strathalbyn which was opened on 15 September 1884. This completed the rail link between Adelaide and Victor Harbor but work was necessary to strengthen the line beyond Strathalbyn to make it suitable for steam traction and also to construct a deviation from Currency Creek to Goolwa. On 17 December 1884, the deviation from Currency Creek was opened and the more direct route to Middleton was closed. Steam traction from Adelaide to Goolwa was inaugurated on that day and finally made it right through to Victor Harbor on 1 April 1885.

Even with the new deviation to Goolwa, the new route still had its drawbacks as it involved a back shunt of about 1/2 km from Goolwa Junction on the western edge of the town to the station and was a time consuming operation. It was not until 12 January 1915 that the present route through Goolwa was opened. This deviated from the old route at the northern side of Goolwa and swung round to the left in a giant semicircle through the town coming into the station parallel to the wharf and at right angles to the old alignment.

Part 2 - Along the Line



At **Mount Barker Junction** (50.0 km from Adelaide) the Main South line swings away to the left while the Victor Harbor line curves right and heads in a southerly direction down 1 in 45 grades to Littlehampton (53.5 km) which was closed in 1971. Grades then ease and the line passes through a 315 feet (96 m) long Armco tunnel below the South Eastern Freeway.

Mount Barker (55.0 km) is an impressive station in a picturesque setting surrounded by tall trees. Besides the station buildings, which include a cottage attached to the Station Master's Office now used as a crew rest house for AN crews, there is a large stone goods shed and a 25,000 gallon (113,750 L) overhead tank. The tank services water columns at each end of the platform which are used by SteamRanger steam trains. The town has a population of 8000 and many people commute to Adelaide for work.

Leaving Mount Barker, the line travels for 3 km on easy grades, then commences the 1 in 45 ascent to the former siding of **Philcox Hill** (61.5 km). Apart from Mount Barker Junction, which is still in AN territory, Philcox Hill is the highest point on the line with an elevation of 1304 feet (400 m). The station was closed for goods and parcels on 1 June 1959. However, the siding was removed many years before that. It is an overnight stop for the *South Coast Explorer* train run by SteamRanger and is located in a beautiful secluded spot where no roads go by.

From Philcox Hill the line descends almost continuously for 20 km to Strathalbyn. Between 63 km and 76 km there is only a total of 1.7 km of straight track spread over 10 short lengths. Curves are predominantly 12 chain (240 m) radius. Huge embankments are commonplace on the Mt Barker-Strathalbyn section often making road access for track maintenance quite impossible. On a clear day some of these embankments afford marvellous views of Lake Alexandrina 30 km away.

Bugle Ranges (64.1 km) was closed for goods and parcels on 1 July 1973. However, the two sidings were left intact for train crossing purposes. Both sidings were eventually withdrawn from use on 23 June 1981. The old station yard has the longest distance of dead level track, $\frac{3}{4}$ km, between Mount Barker Junction and Goolwa. The short siding at Gemmels (70.2 km) was closed in 1964 but a station nameboard still proudly proclaims its former existence.

Curves become less frequent after 77.4 km and there is only one 60 chain (1200 m) curve, about 0.3 km long, through to 80.6 km. This section has always been known as the "Mad Mile". Actually it is 2 miles (3.2 km) long and engine drivers usually open the regulator as a measure of relief to passengers and drivers alike after the long distance of tortuous curves where speed is limited to 50 km/h.

At the 80 km post, the grade eases to a gentle 1 in 200 and at 80.5 km the facing switch to Laucke's siding is passed. Laucke's siding was constructed in 1963 to serve the flour mill of that name and the silos of South Australian Co-operative Bulk Handling Ltd. The last grain train worked in October 1987 but SteamRanger still maintains the switch in good order.

Just prior to Strathalbyn the line crosses the **River Angas** on a fine bridge with two spans each 48 feet (14.63 m) long. Strathalbyn is a delightful heritage listed town nestling either side of the river and has a population of 2000. Barley, wheat, sheep and cattle are the main pursuits in the area but there are a large number of farmlets where the owners keep horses for racing, trotting, polo and show purposes.

Strathalbyn (81.5 km) usually recorded about 50% of the goods and livestock traffic on the Victor Harbor line and has an extensive station yard with loco watering facilities and a 53 feet (16 m) turntable. Apart from one short dead end siding to the former loco shed, the track layout has survived unscathed for a century and is unique in South Australia. The impressive station buildings are almost identical to those at Mount Barker and were constructed in 1884 at a cost of £2235 (\$4470). The stone goods shed was constructed in the same year at a cost of £1500 (\$3000).

For over 30 years until 1968, daily use was made of the turntable to turn the Model 75 railcar which operated the Strathalbyn-Milang service. Between 1986 and 1989, AN crews worked SteamRanger trains from Adelaide to Strathalbyn where volunteer crews took over. From 1990 onwards the changeover point became Mount Barker.

After Strathalbyn the line traverses undulating country which itself slopes down towards Lake Alexandrina. At the end of the longest straight on the line (5.64 km) is **Sandergrove** (89.8 km), the former junction station for the Milang line which was closed in June 1970. Sandergrove was closed for goods livestock, passengers, parcels and mails on 1 July 1973. These days there is only a station name board and a Train Control phone box - the sidings have long since gone.

The thick Finnis Scrub precedes **Finniss** itself and has rare flora not found anywhere else. Finnis (97.0km) is a tiny settlement of some half a dozen houses. Straight away after leaving the station the track descends to the Finnis River which is crossed on the original bridge built for the "tramway" and subsequently strengthened in 1904 and again in 1926 with a new 90 feet (27.4 m) steel span suitable for heavy steam power. **Gilberts** (99.3 km) still has a passenger platform but no sidings.

Tookayerta Creek, the only stream on the line which flows all year round, is crossed at **Black Swamp** on a viaduct constructed in 1926 consisting of two 64 feet (19.5 m) spans and two 60 feet 10 ½ inch (18.6 m) spans on concrete piers. The foundation of the old overhead water tank can be seen as the line climbs away from the creek.



Loco 526 races across Currency Creek bridge with the up *South Coast Limited* special on 18 Oct 1969 Photo: Dean Harvey

Currency Creek station is passed at 106.7 km and at 107.6 km the railway crosses the creek of that name on a 282 feet (86 m) long bridge which stands 76 feet (23 m) above the creek bed. Originally built in 1866, it is the highest bridge on the line. In 1926 it was rebuilt in order to carry heavy steam locomotives and as such it consists of seven spans supported by two abutments and two central piers.

SteamRanger's **Goolwa Depot** (112.5 km) is seen on the left at the northern outskirts of Goolwa and fits just nicely within the triangle constructed in 1986-87.

Goolwa itself is one of the fastest growing country towns in South Australia and exists mainly as a retirement village and as an important tourist centre. The station (114.4 km) is located just a few metres from the River Murray on its last big bend before entering the sea. The paddlesteamer *Mundoo* and the *M.V Aroona* start their cruise trips at the wharf adjacent to the station and the paddlesteamer *Oscar W* is also usually tied up at the wharf. The line swings round to the right on a long 10 chain (201 m) curve, then curves left and heads out along a 5.2 km straight towards **Middleton**. At Middleton (122.5 km), the breakers of the Southern Ocean appear on the left and, following a sharp dip, the line climbs up a 1 in 60 grade to Port Elliot at 125.7 km.

Port Elliot is a quaint seaside village and the station building is licensed out by SteamRanger to the local branch of the National Trust which, in return, sells tickets for the *Cockle Train*. Immediately after the station, the line draws closer to the sea and the traveller is treated to an ocean vista with few equals anywhere in the world. Granite Island sits like a jewel in the sea with the towering mainland Bluff in the background. For several kilometres the railway is just a few steps from the beach and long sleeper retaining walls have been built to minimise storm damage.

South Australia's first concrete arch bridge, built in 1906 to replace the wooden bridge originally used by the horse tram, is located at 127.4 km and spans the windy Watson's Gap. Just over 3 km further on, the railway crosses the **River Hindmarsh** on a 5-span concrete bridge constructed in 1907 on the beam and slab principle. The Hindmarsh bridge was Australia's first rail bridge of this type.

The facing switch at Victor Harbor is located at 131.6 km and on the right can be seen the 85 feet (26 m) electric turntable built by Perry Engineering in 1926. On the left, the two loco sidings are intact. However, the single track shed was removed back in 1962.

The Coral Street level crossing just before the station platform is protected by manually operated timber gates which are heritage listed. The imposing brick station building is located 132 km from Adelaide and was built in 1926. The line continues on over a timber causeway to Granite Island but only horse trams proceed beyond the mainland. An impressive stone goods shed is a landmark just beyond the platform and these days is used to house the three horse trams which ply a frequent daily service to the island for tourists.

Victor Harbor is one of the State's leading tourist attractions and, although the resident population is just over 2000, this more than doubles during the summer holiday period.

Part 3 -Traffic

Passenger trains have always been the main traffic on the line, although in earlier days considerable tonnages were hauled over short periods to clear produce for shipment through Victor Harbor. The demise of the River Murray trade began in 1890 and goods out of Goolwa fell to 1000 tons (1020 tonnes) by 1910. As it happened, 1910 was the best year for goods on the branch line as a whole with totals of 15,271 tons (15,576 tonnes) inwards and 35,514 tons (36,224 tonnes) outwards. Livestock peaked in 1957 with 80,805 inwards and 110,482 outwards.

A local passenger service operated between Goolwa and Victor Harbor from 1854 through to the late 1920s. Until 1885 horse-drawn cars were used, then the diminutive G class 2-4-0 tank engines took over. From 1886 onwards the train was cancelled in the "off season". G class engines reigned supreme until 1894 when the new H class 4-4-0 tender engines worked the train if the load exceeded 70 tons (71 tonnes), usually during the Xmas-New Year's Day holiday period.

Goolwa beach was famous for giant sized cockles and the train became known as the *Cockle Train*. Between 1913 and 1919 the Cockle Train was worked with a Caldwell Vale railcar but this was not successful and steam was used again until a Model 55 class railcar was substituted in 1925.

As many as 26 passenger movements per week operated from Adelaide to various parts of the Victor Harbor branch line in 1926 and 13 of these continued right through to the terminus. These services were further augmented on holidays and on New Year's Day 1918, for example, no less than 14 trains operated. The service just prior to Australian National ceasing operations between Strathalbyn and Victor Harbor in April 1984 comprised five return movements per-week which were usually worked with 250 class diesel passenger motors ("Bluebirds").

The Fast Ones to Victor

Victor Harbor was always a mecca for holidaymakers and as far back as 1890, a Saturday afternoon express train from Adelaide was introduced for the summer tourist season with a return movement on Monday mornings.

The Down movement in 1890 was scheduled to take 4 hours 45 minutes but this was dramatically reduced to 3 hours 15 minutes in 1909 following relaying the Strathalbyn to Victor Harbor section with 60AS and 61 lb/yd (30.5 kg/m) rails. In 1910, the journey time was reduced to a staggering 2 hours 58 minutes and intermediate station times were given to the nearest half minute. In 1915, the Up schedules became even more precise with times shown on the timetable to the nearest quarter minute! This was probably the first use of fractional passing times in Australia.

Rebuilt Baldwin N class engines worked the Victor Harbor Express in 1908-10 and from 1911 Rx class were more commonly used. Load of the Express on Saturdays was limited to 145 tons (148 tonnes) comprising five side-loaders ("dogboxes") and a bogie brakevan. The normal 45 mph (72 km/h) speed limit for Rx class was lifted to 60 mph (97 km/h) for the Victor Harbor Express only. Working to these fast schedules was indeed a remarkable achievement with Rx class engines, two of which have been preserved in working order by Steam-Ranger.

After 1915 the journey time for the Express was gradually increased by including a 10 minute refreshment stop at Mt Barker and stops at eight additional stations. By 1917 the journey time had risen to 3 hours 33 minutes. Following relaying of the line with 80 lb (40 kg) rail and strengthening of the bridges in 1926, the heavier Webb engines were introduced to the line. A determined effort was immediately made to reduce the running time for the Victor Harbor Express and a record time of 2 hours 40 minutes was scheduled in November 1926.

This was to be the fastest schedule ever set for a head-end train over the entire life of the line. It surely must have been an exhilarating experience, particularly as the possibility for high speed travel exists only in the final 30 miles (48 km)! This train was worked by a 600 class engine and the load was restricted to 180 tons (184 tonnes) whereas the normal passenger load on the line for these engines was 280 tons (286 tonnes).



Brill Railcar 58 and a down goods train hauled by steam loco 505 stand at Victor Harbor in May 1951
Photo: I K Winney

Model 55 class passenger motors, or railcars as they were usually known, were introduced on the Victor service in 1924. In 1926 the larger Model 75s made their first appearance and by 1929 had replaced head-end trains to Victor completely except for holiday services. The Express Passenger Motor on Saturdays was scheduled for a 2 hour 42 minute run to Victor Harbor. This was only bettered with a railcar by the 9.20 a.m. service on Mondays to Fridays in 1948 which raced down the track in 2 hours 37 minutes.

Unfortunately the rough riding of the 75s was a deterrent to passengers and patronage declined considerably after their introduction which also coincided with the Depression. By 1936 steam was back on the Express with a 3 hour 13 minute schedule but with the advent of World War II this train became just another stopper with a 3 hour 50 minute schedule.

The Express was reintroduced in 1946 with a 3 hour schedule and 500 class locomotives were initially used for the service. Later, 520 class engines became the usual power. Sadly the dizzy 1926 schedules were never matched again but it was still a sparkling performance behind a 520 class engine in 1952 working to a 3 hour 5 minute schedule. One wondered how they could possibly have cut another 25 minutes off the trip!

Part 4 - Closure - Strathalbyn to Victor Harbor

The line was first investigated for closure in 1931 but the Transport Control Board decided to leave it open. Things looked pretty grim in 1969 when the Board recommended to the Public Works Standing Committee that the Strathalbyn to Victor Harbor and the Sandergrove to Milang portions be closed to all traffic. Following intense public opposition, the Public Works Standing Committee announced that only the Milang Branch would be closed. SteamRanger operated the last train to Milang on 15 June, 1970 using steam locomotive Rx 224.

In 1978 the newly formed Australian National took control of all country lines in South Australia including the Victor Harbor line. Almost immediately AN started moves towards closure and ceased operating freight services beyond Strathalbyn in 1980. The last goods train to Victor Harbor ran on 23 April 1980 and was hauled by engine 843. In July 1982, AN recommended closure of the Strathalbyn-Victor Harbor section to the Commonwealth Minister of Transport and suspended passenger services from Adelaide to Victor Harbor on 30 April 1984.

The State Government opposed closure of the line and, under the terms of the Railways (Transfer Agreement) Act 1975, an Arbitrator was appointed on 5 October 1984 to settle the dispute. On 16 November 1984 the Arbitrator, Mr R. J. Pascoe a former WAGR Commissioner, found in favour of closure. He made one proviso, that formal closure be delayed for two years to enable "interested parties to give further consideration to the line (or part of it) being used by some organisation, other than AN, for the purpose of running a tourist railway". AN was not required to carry out any maintenance work on the line in this intervening period.

SteamRanger, the train operations arm of the South Australian Division of the Society, was at the forefront of proposals for the future use of the railway. After exhaustive investigation by several State Government Committees and Departments, SteamRanger was finally appointed by the State Government to take full responsibility for the Strathalbyn to Victor Harbor railway and to provide tourist train services. Grants totalling \$2,000,000 were obtained to replace 29,000 sleepers and build a new steam train depot with turning triangle on the outskirts of Goolwa. The depot was provided for the proposed Goolwa-based Cockle Train service. The work was carried out in 1986-87 as a Commonwealth Employment Program (CEP) project.

Part 5 - SteamRanger Services 1986 - 1989

The State Government instructed that the line between Strathalbyn and Victor Harbor was to be known as the Victor Harbor Tourist Railway (VHTR). After partial completion of track upgrading, SteamRanger reopened the VHTR on 18 October 1986. Two separate steam trains from Adelaide combined at Mount Barker and engines 621 and 520 double-headed the train to Victor Harbor. Volunteer crews took over at Strathalbyn for the first time.

During the period from 28 December 1986 to the end of March 1987, eleven trains operated and were powered by SteamRanger 900 class diesel electric locomotives.

Regular Southern Encounter steam services from Adelaide to Victor Harbor operated each Sunday, certain Wednesdays and some public holidays from mid-April to mid-June and from mid-August to the end of November during 1987. The same locomotive and consist worked a Cockle Train movement from Victor Harbor to Goolwa and return prior to working the Up Southern Encounter to Adelaide.

Goolwa Depot was completed in July 1987 and Rx 207 worked a special to Goolwa Depot on 6 October 1987 staying there to work 11 Goolwa-based *Cockle Trains* over the 3-day Holiday weekend. On 23 December 1987, twin 900 class diesel electrics 909 and 907 hauled a heavy transfer movement from SteamRanger's Dry Creek Depot to Goolwa Depot. This train included locomotives Rx 207, Rx 224 and D.E. 351 plus carriages and goods loading. Goolwa depot became the permanent home for the Cockle Train which was powered by one of the Rx engines. Transfers to and from Adelaide were made only when major work was necessary on a carriage or locomotive. Except for total fireban days, the *Cockle Train* operated three return trips daily from Goolwa to Victor Harbor during January 1988.

As the condition of the AN track between Mount Barker Junction and Strathalbyn had deteriorated, the summer Southern Encounter service, with 900 class locomotives from Adelaide, was cancelled for 1988. Prior to AN banning all trains between Mount Barker Junction and Strathalbyn in September 1989 and since re-opening as a new part of the VHTR in September 1990, the service generally has been as follows:

Southern Encounter

Sundays - 1 May to June Holiday weekend and mid-August to end of November.

Cockle Train

Sundays - Each day the Southern Encounter operates.

Daily - 28 December to end of January.

School Holidays - Selected days April and September/October.

Public Holidays - Easter and Labour Day weekend (Oct.).



Rx224 works an early SteamRanger Cockle Train along the coast to Victor Harbor on 10 May 1975
Photo: Geoff Doecke

In addition to the previously established services, a new weekend tour train named the **South Coast Explorer** operates on selected dates. This train is an upmarket trip with restored non air-conditioned ex Overland sleepers and the Bowmans tavern car. It spends the Friday night in an isolated spot in the Bugle Ranges, then on Saturday after a barbecue breakfast meanders down to Strathalbyn for an entertaining 1/2 hour stop. There is a guided nature walk in the Finnis scrub, then on to Goolwa for a genuine paddle-steamer trip. The train spends Saturday night 10 steps from the beach between Port Elliot and Victor Harbor. It returns to Adelaide on the Sunday afternoon.

Following the purchase of the lighter axle load 930 class diesel electric locomotive 958, a limited number of summer diesel trains are to be offered from Adelaide. Steam trains are not permitted to operate through the Mount Lofty Ranges from December to April inclusive. 900 class locomotives with their 21 tonne axle load are now restricted on the VHTR to emergency use only to minimise track damage.

The length of railway operated and maintained by SteamRanger is now 82 km and is believed to be the longest volunteer manned tourist railway in the world. A list of SteamRanger rolling stock is shown in Table 1.

Table 1 SteamRanger Rolling Stock

LOCOMOTIVES		
Steam engines	621 520 Rx207, Rx224	Duke of Edinburgh Sir Malcolm Barclay Harvey
Diesels	350 507 907,909 958	
CARRIAGES		
Wooden Cars	Centenary Cars End and Centre Loaders Baggage Cars BE Class Brakevans	60,61,62,63,65,66,52,53,54,56 70, 71, 72 81, 83, 426 16, 18, 24 GB40, GB4420
Steel Cars	Side corridor Centre Aisle Tavern Car Brakevans Sleepers	503 (First), 606 701, 704,706,710, 712 602 "Bowmans" AVAY5, AVAY7, AVAY10, AVBY2, AVBY6 Finniss, Inman, Coliban, Lowanna

Note:

With the exception of shunting diesels 350 and 507 all other locomotives and rolling stock listed have worked on the Victor Harbor branch line in SAR days. Apart from the BE class cars and the sleepers the rest were frequent visitors at various periods. SteamRanger also has a fleet of over 80 servicable goods vehicles

Safeworking

Originally the Absolute Block system was used between Mount Barker Junction and Strathalbyn and Permissive Block between Strathalbyn and Victor Harbor. In the period 1912 to 1914, Electric Staff working was progressively introduced throughout the branch. In November 1926, the Train Order system replaced the Electric Staff and is still used to this day. Train Control has been provided by STA since SteamRanger took over responsibility for the railway

Rails

Between Mount Barker Junction and Victor Harbor the majority of rails are 80AS laid in 1925 and staggered joints are the norm. The curves between Mount Barker Junction and Strathalbyn have been railed using 82AS steel. There is 4 km of 94 Ib (47 kg) welded rail along the coast between Port Elliot and Victor Harbor

Part 6 - Closure - Mount Barker Junction to Strathalbyn

In November of 1987, Australian National called me in to advise that they intended to take steps to close the Mount Barker Junction to Strathalbyn railway. Although there had been some prior rumours to this effect, it had always been denied. In fact both the State Government, Commonwealth Employment Program (CEP) and ourselves had gone ahead with rehabilitation of the Strathalbyn-Victor Harbor section on assurances in 1984-86 that AN intended to continue freight operations to Strathalbyn. There was a fairly stable grain movement in and out of Strathalbyn and a considerable amount of superphosphate was carried as well.

Apparently the reasoning was that the line was run down and the estimated revenue would not match the maintenance costs for the foreseeable future. It's the same story with almost every branch line in Australia—they never did pay but State Government controlled railways kept most of them going as a community obligation and for the overall benefit of the State. AN has never been bound by such burdens and is progressively closing down all branch lines in South Australia. They do not need to take into account the impact of heavier road maintenance costs which invariably result from rail closures.

The process of closing a railway is usually long and drawn out involving the Federal and State Governments responding to AN's recommendations. To my knowledge, no joint meeting of the three parties was ever held to attempt to resolve the issue. Nevertheless, SteamRanger could see that AN was not likely to be deflected from its objective in the long term and both the Council of the SA Division of the Society and SteamRanger Management unanimously agreed with my recommendation to begin work immediately towards incorporating the line in the Victor Harbor Tourist Railway. We reasoned that it would be ridiculous to simply sit by and let the 32 km section be scrapped, thus isolating our tourist railway from Adelaide.

Going back to earlier days, we had already fought and won the extremely difficult battle to stop the Strathalbyn to Victor Harbor railway from being scrapped. I had secured over \$2,000,000 in grants from the State Government and the CEP to rehabilitate this run down 50 km railway. The work was carried out in 1986 and 1987 and had only just been completed when Australian National dropped the bombshell about the Mt Barker Junction to Strathalbyn railway. SteamRanger too, had heavy financial involvement in the bottom end and also there had been enormous volunteer input to run the line since it was reopened.

Of course it is one thing to acquire the railway but a quite different problem to restore it to good working order. Both tasks proved to be very difficult indeed and stretched our resources to the very limit.

The SteamRanger Office Manager, Daryl Havard launched the "Win a Train" raffle in February, 1988 and I came up with a sleeper donation scheme for SteamRanger. For \$25.00 the public could donate a sleeper and identify themselves with saving the railway. Each donation was rewarded with a handsome certificate. It was to become the best fund raiser ever for SteamRanger and drew attention to our plight to save the railway perhaps more than any other initiative.

I wrote personal letters to everyone SteamRanger did business with and lots of other companies as well and this was very productive. Rex Leverington and Keith Conlon of Radio 5AN competed with each other to see who could sell the most sleepers. Rex won and Keith's penance was to work as fireman on the Southern Encounter for part of its journey to Victor Harbor. Channel 9 contributed to the sleeper appeal with free publicity and this they did in great style. At last count, the value of TV time given to our cause had reached \$77,000!

Simultaneously, the SteamRanger Fund Raising Subcommittee began a number of other initiatives which resulted in a most worthwhile input.

Meanwhile, I was negotiating with the State and Federal Governments for support in our aim to take over and upgrade the railway. The State Government naturally did not want to see the line closed but certainly did not wish to contribute any funds to prevent this. In December 1987, we offered to provide Australian National with 5000 new sleepers as a stopgap measure to tackle some of the worst sections. However, AN declined to accept this offer.

Our trains continued to run to Victor Harbor in 1988 and during most of 1989 but the speed restrictions became progressively worse with a maximum speed of 20 km/h between Mt Barker Junction and Strathalbyn. In a number of places we were limited to 10 km/h and our trains took 2 hours to traverse this section alone! Although some passengers took this in good part, many potential customers including large groups declined to travel because the journey time for the 132 km trip had become excessive.

Besides running SteamRanger and the VHTR, complying with the extraordinary administrative requirements of the State Government for our initial 3-year term with VHTR, I was busy making numerous submissions to the State Government and others concerning the future of the AN line to Strathalbyn.

There were seemingly endless hours of meetings, preparation of cost estimates and viability studies. I became a regular visitor to the Department of Transport, Department of Tourism and Department of the Premier, not to mention the Lands Department and others.

Finally, in March 1989 the State Government approved a grant to SteamRanger of \$275,000 towards upgrading the line and gave its blessing to the project. This grant was conditional on a number of other matters including:

1. SteamRanger to contribute \$275,000 towards the upgrading.
2. AN to contribute \$100,000 in services towards the project and to hand the railway over to the State intact.

I had been successful in negotiating a 15-year lease of the line as, obviously with the level of input we would be making, there needed to be stability of tenure. Apart from the actual difficulty of raising the \$275,000, we had no problem with the requirement to contribute this amount as, in fact, SteamRanger would need to raise a lot more than this.

Unfortunately Australian National would not agree to provide \$100,000 assistance to the project and little further progress was made for 6 months. Our hands were tied but we did not give up. The sleeper campaign continued apace and in August 1988 there was an Open Day at Dry Creek to raise funds. A great deal of effort by a lot of people for the Open Day ensured the day was reasonably successful and it did help to keep the issue alive.

Late on 8 September 1989, Steam-Ranger received a letter from AN's Managing Director, Russell King, advising that the line was now considered unsafe for passengers and consequently no train operations would be permitted from 11 September onwards. This was an unexpected development without any prior warning and caused the loss of more than \$150,000 worth of bookings prior to the recommencement of services.

I organised a bus connection from Keswick Terminal to Strathalbyn where passengers changed to rail behind Goolwa-based engine Rx 224 for the run to Victor Harbor. Not surprisingly most passengers did not find this alternative to their liking and required refunds. Nevertheless, from 17 September to 19 November we did operate five successful trains in this manner and, by offering something, we at least kept faith with our supporters.

The action of AN caused a tremendous public reaction, particularly as the State had already indicated its intention to allow SteamRanger to take over the railway after the official closure. At a time when we were flat out raising dollars for the track upgrading project, our finances received a major blow with the need to refund so much money to passengers booked for the 1989 Southern Encounter trains. The dumping of a large mound of raw earth over the line at the Victor end of Mount Barker Junction yard made it impossible to transfer locos and rolling stock to Goolwa Depot for our summer Cackle Train services.

From receipt of AN's "deathblow" letter, I was in contact with the State Government seeking an urgent resolution regarding the future of the line. The Minister for Tourism, the Hon. Barbara Wiese, MLC, responded and immediately began direct dialogue with AN's Chairman, Dr Don Williams. The Minister deserves great credit for persistence and skill shown in these negotiations and finally AN reversed its earlier decision and agreed to make the \$100,000 contribution to the upgrading project. Substantial agreement on all items was reached on 31 October and was formalised in February 1990.

The line from Mount Barker Junction to Strathalbyn was officially closed on 28 February 1990. However, train services ceased well before that. The last AN goods train operated on 15 October 1987 and was hauled by engine 951. AN stopped SteamRanger passenger trains running on the line after the passage of train 1520 (Up *Southern Encounter*) on 10 September 1989 on account of the track condition.

The way was then clear for SteamRanger to begin upgrading the line. This was to be the biggest single undertaking ever tackled by SteamRanger. The battle to save the line had been won but now SteamRanger had to show that it was capable of restoring it to good working order. Many people, including some in high places, doubted whether we could achieve it and openly said so. For my part I could see that the whole future of SteamRanger depended on it and I was determined that we would succeed. SteamRanger wasted no time and began resleepering work on 12 March 1990.

Part 7 - The Upgrading

The task was to replace approximately 16,000 sleepers including retimbering two bridges, to regauge the remaining sleepers as necessary and to render numerous blocked cesses (drains) operative.

For such a task one needs a good stock of sleepers, dogspikes, baseplates and a range of track equipment and tools. All these items normally have a long lead time before delivery can be expected. Fortunately I had looked ahead and in fact purchased our first sleepers in January 1989. Further orders were issued in April and September 1989 to ensure a continuity of supply.

Sleepers don't come cheaply and jarrah for example cost \$40 each. Over 6000 jarrah sleepers were purchased and these were intended for the steeply graded 12 chain (241 m) curves which abound on the line. By contrast I was able to purchase 2178 new creosoted pine sleepers by tender for only \$9 each. I also secured 4300 second-hand pine sleepers from a contractor pulling up the Hallett-Peterborough line. These cost \$12.50 each delivered to Goolwa and were in good condition. Creosoted pine sleepers are ideal for straight sections of track and white ants just hate them. I was also successful in obtaining 3600 premium quality red gum sleepers for an average price of \$30 each.

I have often been asked why we did not use concrete or steel sleepers. In both cases, to achieve and retain a smooth top it is necessary to use 100% on face—all sleepers in a sequence must be replaced. This was not necessary or financially possible anywhere on our line. The reason for needing 100% on face is that they both pack differently to timber, being less flexible. Others have tried to mix sleepers but invariably this has led to maintenance problems. The STA had a trial of one steel sleeper in four between Dry Creek and Kilburn some years ago but even with frequent tamping, the section was under speed restrictions most of the time. Another problem for us with steel sleepers is the great difficulty in packing them by hand and, as we do not have tamping machines, this makes ongoing maintenance unsatisfactory.

Concrete sleepers are too heavy to handle manually and their installation can only be carried out by use of very expensive machines, way beyond our means. Both concrete and steel sleepers with their specialised fittings are vastly more expensive than timber and this factor alone places them beyond our reach.

Being an essentially volunteer manned tourist railway with very limited funds, we needed a highly motivated team of paid workers to expedite the upgrading task. I appointed retired AN engineer Dean Carver, as Project Engineer and Steve Parsons as Ganger in Charge. Dean Carver was employed on a part-time contract with an expectation that he would liaise with the Ganger in Charge two or three times a week. At peak times, he sometimes worked up to four days a week and, besides the supervisory role, assisted in running ballast with our road-rail truck.

With myself as overall Manager of the project, work commenced at Hurling Drive, Mount Barker on 12 March 1990. Appropriately, the Hon. Barbara Wiese, MLC, helped install the first sleeper and the event was well publicised.

We started with a 6-man track gang and worked steadily towards Philcox Hill. Initially, the only mechanical aids we had were motorised borers to bore out the holes for dogspikes. The old spikes were removed manually using either an "Annie's Foot" or a "snatch". Sleepers were removed and inserted manually which was sheer hard work. New spikes were driven in using a long-handled 14 pound (62 N) hammer. Really, apart from the borers, we turned the clock back to the 19th century but even so the work proceeded very well indeed.

For security reasons, our main sleeper stores were located at Goolwa Depot, the Goolwa Goods Shed and Strathalbyn. Sleepers were initially transported by the road-rail truck and distributed, with dogspikes and plates, alongside the track at marked positions.

Gradually some mechanical aids were introduced for the work. A heavy duty rail trolley was constructed to carry our large compressor, still complete with road wheels. It could be converted back to road use merely by lifting it off the trolley using our Caterpillar 920 front-end loader. Because of the rugged terrain of the railway, road access is rarely feasible and this is why the rail-mounted compressor was devised. The compressor supplied air for our pneumatic spike drivers which were a carry-over from the 1986-87 upgrading further south. This made life a lot easier for the gang and production increased.



Volunteers Philip Neville and Kim Critchley unload sleepers at positions indicated by Dean Harvey (walking alongside) near Gemmels on 15 July 1990 Photo: Andrew Gramp

Perhaps the most valuable acquisition was a motor-driven spike puller which was rail mounted. This made short work of pulling spikes out on the straights which were usually not plated. It also did a great job on the curves too but spikes rusted on to steel baseplates often proved reluctant to budge unless loosened up manually first with one or two hammer blows on a snatch. Many of the sleepers on the straight sections were so bad that dog-spikes could often be removed by hand.

In April, the gang was supplemented twice a week with Community Service offenders who undertook various tasks. Initially they trimmed foliage which was trespassing over the tracks and then we found they could do a good job fork packing ballast under new sleepers. This saved the gang doing it and was another significant boost to our production rate. We also used Community Service offenders to collect scrap dogspikes and baseplates which we accumulated at Strathalbyn and later sold for scrap. The proceeds were of course used to buy more sleepers.

My aim with the project was to use first class materials throughout. There was no merit in installing poor quality sleepers even though they were cheaper and much easier to obtain. It was considered that the labour cost component dictated that only top quality sleepers should be used so that we could obtain maximum track life for our efforts. Likewise, I decided that every sleeper, even those on the straights, should be baseplated using double-lip baseplates. Only the curves on this railway had been base-plated in the past and then only with the much inferior single-lip plates which allow the plate to pivot on one corner reducing the holding power on the rail.

Baseplates serve to spread the load on the sleepers and reduce sleeper cutting. They also make the inside dogspikes effective in resisting lateral forces and reduce the working of the dogspikes in the sleepers. The extra cost will ensure longer life for our expensive sleepers.

The width of some cuttings was insufficient to allow sleepers to be pulled out and in these cases we removed the rail on one side to facilitate the task. One such location was at Philcox Hill in the tallest cutting on the railway. Either side of Philcox Hill, I let a contract for the removal of used sleepers from the trackside - they paid us! The contractor cleared extracted sleepers from 5 km of track after resleepering had been completed by our team. In other sections we removed the replaced sleepers using Community Service offenders with one of our men, Terry Garbett, on the front-end loader. Terry was an old acquaintance and had worked on the 1986 project.

In April, a 3-man gang started replacing the 78 timbers on the River Angas bridge at Strathalbyn. This was a tedious task which had to be carried out with great precision, rebating the huge jarrah timbers exactly the right amount in each case to ensure a dead level track. Because of the stepped nature of the girders, every timber had to be tailored to fit its particular position. The timbers alone for this bridge cost \$11,000 and installation took nearly 6 weeks to complete, working right through Easter and Anzac Day. Terry Garbett proved invaluable with his expertise on the Cat. 920, dropping the heavy timbers precisely in the desired position—often removing and replacing one timber several times until it was planed down sufficiently. The final result is excellent and should give us an effective timber life of 35 years.

Come winter and the output slowed down considerably with the first heavy rains. The trials of resleepering in winter are numerous:

- Working on high embankments in gale force winds sometimes having to lean forward about 45 degrees into the wind to remain upright.
- Working in very soggy areas, for example, in Bugle Ranges yard where the road bed was so saturated, we actually floated the old sleepers out and the new ones in.

We had been averaging about 560 sleepers a fortnight in good weather but now it was just over 400. Nevertheless, by mid winter, performance surged again with the gang achieving the staggering total of 1410 for one 4-week period. They were rewarded with a well deserved bonus. Soon the worst of the season was behind us.

At Bugle Ranges, six lengths of rail were replaced with rail obtained from a disused siding at Littlehampton. We ran two very unusual rail "trains" to transport the rail. They consisted of our road-rail vehicle as prime mover hauling two section-car trolleys which were not coupled to each other and had a large gap between them. This was necessary as the rails were a great deal longer than the combined length of the two trolleys and, in fact, formed a tow bar for the second trolley. The rails were securely chained to each trolley effectively converting them into one long unit.

On 16 and 17 August, the AN Track Chief ballast regulator worked from the Junction to 71.3 km pulling up shoulder ballast as much as practicable. On 20 and 22 August, AN ballast trains worked from Tailem Bend with 14 hoppers on the first day and seven on the second day. Granite ballast was supplied by SteamRanger ex Murray Bridge and loaded by AN at that station before despatching to Tailem Bend for weighing. Because of our zeal in reducing ballast to the minimum, it was necessary to add further ballast in many places using one of our two road-rail vehicles working from a stockpile at Mount Barker. Dean Carver and myself took it in turns assisting Terry Garbett at various times, often working until dark. It was a race against time to have sufficient ballast run out before the tamper arrived.

On 28 September, the AN "Beaver" tamper and the Plasser regulator began work on the resleepered track at 50.2 km, near Mount Barker Junction. Before we commenced resleepering, the alignment of the track was generally OK on the curves but all over the place on the straights. After disturbing the track, pulling out and inserting sleepers, it was all ups and downs everywhere. I decided that an average lift of 30 mm would be necessary to give us a good top. In most cases this was adequate but the long straight between 51.65 km and 52.3 km (halfway from the Junction to Littlehampton) had particularly sharp dips and holes. In this case we had to lift the track a total of 100 mm in three separate tamps to achieve a good result.

For those not familiar with the operation of tampers, the "Beaver" operates by first lifting the rail and sleepers to a new level by a preset amount, e.g., 30 mm to give a smooth top. The machine also slews the track by pushing the sleepers sideways to give a good line without kinks etc. The actual tamping is carried out by tamping tynes which come down on each side of the sleeper and on each side of both rails (eight tynes) and these tynes vibrate vigorously forcing the ballast tightly under the sleepers. We used a double tamp for each sleeper to ensure best results. The "Beaver" can also be programmed to lift to a superelevation or cant on the outer rail of curves.

I provided the tamper crew with a list specifying the particular cants for every curve on our line, some curves required as much as an 80 mm cant. The "Beaver" is also a switch tamper and has specialised lifting hooks and tilting and traversing tynes to allow tamping in restricted spaces along the turnout. Even though the "Beaver" is 12 years old, it is still a rather remarkable piece of machinery.

The regulator is a second unit which follows along behind the tamper. It is used to smooth the ballast to a uniform cross-section following tamping. It can move ballast along the track a short distance; across the track from between the rails to the shoulders and pull back ballast from the far limits of the shoulders using an adjustable plough on the sides. Finally, it uses its rotary broom to sweep the ballast evenly over the top of the sleepers and "hey presto" the job is done.

Lifting the track creates a need for extra ballast and, with a 30 mm lift, we usually average about 250 tonnes per kilometre. Hence the need for ballast trains prior to tamping operations.

Despite some serious breakdowns with the tamper and the regulator, the tamping program resulted in an excellent top and by 27 September we had fully restored the track from 50.2 km to 53.3 km; from Mount Barker (55.3 km) to 56.0 km and from 56.7 km continuously through to 71.3 km. The tamper worked on the line for just over 11 days in this period.

Beginning on 8 September, the gang was split into two with Butch Collett and Graham Kuchel working behind the tamper replacing any sleepers broken during the tamping process and redogging remaining old sleepers where necessary. A total of 79 extra hardwood and 54 extra pine sleepers were installed plus 39 existing sleepers were redogged in the 18.4 km tamped in 1990. The extremely vigorous lifting and shaking action of the tamper soon sorts out any remaining sleepers in poor condition.

Steve Parsons, Rolf Lamkin, Nick Shiers and Geoff Kelly carried on with new work in the Mount Barker area but moved to 71.3 km on 25 September and continued towards Strath-albyn. Meanwhile, Butch and Graham had transferred to 76.5 km and begun new work, initially replacing rotten sleepers with good pine ones. After reaching 77.55 km, they began working uphill towards the other gang. Both gangs achieved high outputs and, on one exceptional fortnight in each case, recorded an average of only 0.37 man-hours per sleeper replaced. A time honoured maxim for manual sleeper replacement has been 1.0 man-hour per sleeper but Government railways rarely achieve that these days. So our 0.37 was great stuff! During the latter part of 1990 the 2-man gang averaged a very creditable 0.58 man-hours per sleeper.

In early October, with both gangs working towards each other, I set a target for each team to reach the 75 km post by 4 December. The spirit of competition between the gangs was tremendous and they both arrived at the 75 km post within a short time of each other on 3 December.

Steve and his gang were then transferred to Mt Barker to complete two sections, one between Alexandrina and Wellington Roads and the other from the Freeway tunnel (54.0 km) to the start of Mt Barker yard (54.9 km). This suited them well as they all lived in the Stirling-Bridgewater area and 75 km was starting to get a long way from home. Butch and Graham were assigned to replace extra sleepers which were deemed necessary between 71.3 km and 73.5 km.

Resleeping work finished for the year on 19 December and did not start again with a full-time gang until 11 March 1991. Dean Carver and Steve Parsons finished up in December 1990.

During the year, Graham Bull and his small band of volunteers, working on Saturdays, replaced over 400 sleepers with second-hand pines in the Mount Barker-Littlehampton section in addition to normal trackwork between Strathalbyn and Victor Harbor.

But things never stop on a project like this and I had negotiated for AN trains to run ballast on the sections resleepered but not yet tamped. This was necessary to give holding power in the summer heat for the disturbed track which, in this condition, is prone to buckling.

The first ballast train worked on 17 December and was to have been powered by diesels 931 and 957. Unfortunately 931 broke down at Monteith and two 830 class diesels were sent to the rescue from Tailem Bend. The load of the train at Monteith comprised 12 loaded ballast hoppers, a ballast plough, two brakevans plus three flat wagons with AN sleepers bound for the RoadMaster at Balhannah. With this load plus dead loco 931 (all up 1100 tonnes), the working diesels made hard work of the grades and lost time badly.

SteamRanger staff manned the ballast plough and operated the valves on the hoppers to run the ballast on these AN trains. My task was to communicate with the loco crew advising speeds desired during the ballast run, stopping, starting etc. The speed was all important to ensure accurate and even ballast running. Also, from my inspections, I knew the locations where greater or lesser amounts were needed. Ballast is an expensive item and if the train runs too slowly, it does not take long to waste a lot of dollars! A good driver who can respond quickly and accurately is an asset.

The SteamRanger team had been waiting at Mount Barker Junction since 6.00 a.m. but it was close to 9.00 a.m. before the train finally arrived ready to go on the branch line. Coupled with all the other problems, it had encountered a signal failure at Balhannah while shunting to detach the AN sleeper wagons.

To make matters worse, a huge front-end loader had been hired to go to Gemmels to assist in reloading the ballast train a second time after running out the load brought from Tailem Bend. We were not able to contact the contractor to amend the times and avoid paying \$80 an hour for the long wait at Gemmels. Well, it was a very long day indeed and naturally we were not able to fully reload the train as planned. 957 also played up quite a bit during the trip and it did eventually break down but fortunately this did not occur until the homeward journey to Mount Barker when the hoppers were empty and the two 830s were able to handle the remaining load.

Following representations, AN offered to substantially reduce the cost of running a second train, scheduled for 10 January, to compensate for the problems which occurred on 17 December. Imagine my dismay on the eve of this second train to learn that 931 and 957 were again rostered to haul it! However, 931 failed in preparation at Tailem Bend and two 830 class units were quickly substituted, so the delay was a lot less than before.

At various times during the project, I arranged for SteamRanger engines to haul our own ballast train which was based at Strathalbyn. Usually this was combined with a sleeper dropping operation. Volunteers manned these trains which usually worked on Sundays. Our five diminutive Z hopper wagons could only carry a total of 120 tonnes of ballast, whereas a 14-hopper AN train could carry 770 tonnes. Nevertheless, our train proved very useful on a number of occasions topping up sections when an AN train was not warranted. It was a lot quicker than running trips with our road-rail tipper which only carried 5 tonnes. They each had their place in the overall scheme of things depending on the circumstances prevailing at the time. To reduce time lost by the gang in distributing track materials, work trains manned by volunteers were arranged to drop sleepers, spikes and plates alongside the track precisely where each had to be installed. In all, 17 such work trains operated, the first being on 18 March, 1990. This train originated from Goolwa Depot and proceeded to Mount Barker where the engine reversed for the return run, dropping track materials between 57 km and 62 km. Like a dozen others, it was powered by diesel electric locomotive 351.



After running one train load of ballast DE351 pauses at Gemmels so that three of the SteamRanger Z class hopper wagons can be reloaded Photo: Roger Currie

A lot of work went into the running of these trains and started well before the day of operation in each case. A complication was that four different types of sleepers were being used; jarrah, red gum, new creosoted pine and second-hand pine. It was necessary to preload the correct number of each type on to wagons either at Strathalbyn or Goolwa. At the latter town, Goolwa Transport donated the use of their forklift for loading while at Strathalbyn we used the SteamRanger front-end loader fitted with forks.

A typical example was the train worked on 24 June 1990. Engine 351 hauled flat wagons AFFA 8553 and AFFA 8696 loaded with sleepers from Goolwa Depot to Strathalbyn and then picked up open wagon OF 5 with baseplates and AOWA 3144 and AFFA 8696 loaded with sleepers. Bags of dogspikes were placed on the running board of the locomotive for ease of unloading. The train then proceeded to Purcell Road (65.5 km) and then reversed towards Strathalbyn dropping sleepers as shown in Table 2.

	Red Gum	Jarrah	Pine
65.5km to 66.1km	7	59#	
66.1km to 66.5km	42	30#	
66.5km to 67.0km	100	103	
67.0km to 67.5km	31	138	67
67.7km to 67.8km			29

Note: # other sleepers had been dropped at these sections earlier

TABLE 2 - SLEEPERS USED ON UPGRADING PROJECT

Even with the short sections above, it was not simply a matter of dropping the total red gums, jarrahs or pines in a sequence because specific types were designated for particular track locations. While one group of volunteers was busy dropping sleepers, a second group was tossing out baseplates, two to every sleeper and a third group was engaged in dropping two bags of dogspikes (50 per bag) for every 25 sleepers.

As indicated earlier, some runs involved doubling back to Strathalbyn after dropping sleepers to pick up the SteamRanger ballast train and then going up the hills again to run ballast. On 24 February 1991, diesel electric locomotive 909 was en route back to our Dry Creek Depot hauling steam locomotive 621 and diesel 351 (both dead) plus other loading including used sleepers for lighting up steam engines.

Advantage was taken of this movement to schedule a work train from Strathalbyn. The power then at our disposal enabled us to combine the ballast train and track materials consist into one movement saving a lot of time. Incidentally diesel 351 had sustained a failed big end bearing on a work train to Gemmels on 27 October 1990 and was being transferred back to Dry Creek by 909 in an unserviceable condition. Steam engine Rx 207 was used on work trains on two occasions, once in conjunction with diesel 351 and once solo.

The weather was not always kind to us on these work trains and on several occasions we had to work in pouring rain and howling winds but still the job was done. Even in such difficult conditions, everyone pulled their weight because they realised track-work could not proceed without the materials being delivered by the work trains.

Fishplate seatings need to be oiled periodically to ensure that the fishplates are "working". This allows normal expansion and contraction to take place and reduces the incidence of buckling in the hot weather. Butch Collett and Graham Kuchel were called in and sent out to oil joints from 64 km to 82.5 km just beyond Strathalbyn. They got a good system going and on their best day covered 8.3 km. Volunteers working with Graham Bull oiled joints from 50.2 km to 64 km.

During the summer I was busy on the track, marking out sleepers for replacement and examining and assessing switch timbers in Strathalbyn yard. This yard has the biggest track layout on the VHTR and has 18 switches (cf. Victor Harbor eight switches) and has been intensively used during the upgrading project. There is an additional switch, known as Laucke's switch, out on the main line to serve the silos. It was not uncommon to see up to 25 wagons in Strathalbyn yard—some with new or used sleepers, baseplates, scrap steel and of course the five ballast hopper wagons and ballast plough. In addition, there were M vans loaded with dogspikes and a rake of spare rolling stock stored in the yard.

Once a budget had been drawn up for work in 1991 and approved by SteamRanger Management, I had to call tenders for additional sleepers, dogspikes, baseplates etc. In practice it is not quite as simple as that and it is necessary to do quite a lot of chasing round to get suppliers of good quality materials at the lowest possible prices. Worn out track tools had to be replaced and, being specialised items, they were often hard to obtain.

In February and early March, Butch and Graham worked on five odd days replacing more sleepers between 73.5 km and 74.0 km which were in poor condition and should have been replaced in our initial run through. On 11 March, the two fettlers started again full time and, what happened, it rained solidly for 3 hours! First rain for 3 months but even so they still managed to put in 30 new sleepers.

Work still to be done on the project after 1990 comprised:

1. Finish the main line between 77.55 km and 82.5 km.
2. Finish the main line between 54.6 km and 55.3 km.
3. Finish the main line between 53.3 km and 53.9 km.
4. Retimber Swamp Creek bridge.
5. Switches and goods sidings at Strathalbyn.
6. Switches and goods sidings at Mount Barker.

Available funds were nowhere near adequate for all this work but I was determined to get as much done as practicable, leaving hopefully only a small distance of main line for 1992.

After the rainy start, work went along well and we introduced the Community Service offenders to pull out sleepers, dig out the beds for new sleepers and put the new sleepers under the rails ready for dogging up. Although they usually worked only 2 days a week, their input was very worthwhile and they continued to fork pack as before. These workers were also used to clean out numerous culverts, drains etc. which were often completely clogged up after years of neglect. The security of the railway in times of heavy rains depends on effective drainage of water away from the track and it is essential that the cesses alongside be kept clear.

The sleeper condition in the remaining 5 km to Strathalbyn was worse than anything encountered so far and hovered around 50% needing replacement. In a ½ km, 63% were replaced. In addition sleepers under a number of level crossings were in poor condition. In all, we completely resleepered four level crossings.

Swamp Creek bridge at 79.1 km, about 2 km before Strathalbyn, presented quite a challenge. The old timbers were removed on 15 April and new jarrah timbers arrived on time the same day. Now that the girders were fully exposed, I observed serious corrosion and pitting on the upper face where the rotten timbers had been sitting. This was worst on the span above the point where the creek normally flowed. With some difficulty, a Murray Bridge contractor was persuaded to bring his industrial sandblasting equipment out in the bush. We could not take the bridge to him! An access track had to be formed with our front-end loader on the railway reserve from the nearest road so that the contractor could get his truck close to the bridge. In one day, the 5-span bridge girders were meticulously sandblasted and spray painted with an epoxy coal tar preparation which is suitable for protecting steel in submersible situations.

I persuaded railway designing engineer, Roger Wyatt, to inspect the bridge and take caliper measurements of the girders in the areas affected by corrosion. He spent the weekend on calculations and presented me with a comprehensive report indicating that the bridge girders were still in excess of M220 (equivalent to Coopers E50) standard. The whole of the Victor line is constructed to the E50 standard so this was a very pleasing result. SteamRanger is indeed fortunate that the girders were grossly overdesigned in the first place or we would have been faced with a considerable expense in replacing them.

My specification for the new bridge timbers called for a depth of 200 mm with a tolerance not greater than ± 2 mm and this had been stressed as a critical dimension throughout the length of each timber. The supplier had been confident of achieving this. When we measured up the timbers delivered from Western Australia, it was found that from timber to timber they ranged from as little as 189 mm to 208 mm and they were not even constant in a particular timber, sometimes varying by as much as 10 mm at the four points measured. In fact, some of them were visibly wedge shaped rather than rectangular and this was rather alarming.

The bridge is situated on a 1 in 90 grade and of course the rails needed to sit on timbers exactly on this grade. It is in the middle of one of the longest straight sections on the line and our job had to be top class. Consideration was given to taking the timbers to a suitable mill for reworking to a constant depth all round. As it turned out, only one mill had precision thicknessing machinery suitable for such large timbers and this was booked out for some time ahead. We had to work out an alternative as trains were due to run again in just two weeks.



Butch Collett hard at work on the "dog knocker" at Swamp Creek bridge on 30th April 1991 Photo: Dean Harvey

Another problem had also arisen. The bridge consisted of five spans each 12 feet (3.7 m) long but these did not present an even grade as desired, rather five sections, each with slightly different grades. Further, the girders on one side of the bridge were often lower than the other side and on a different slope. The severe pitting of some girders also posed problems—altogether a real can of worms.

I borrowed accurate surveying equipment and we took numerous readings along the whole length of both the right-hand and left-hand side girders. As can be imagined, the number of permutations and combinations meant we had to resort to complex mathematics to determine the optimum position for each of the previously numbered timbers, 45 in all. The aim was to provide the top of each timber on a constant 1 in 90 grade. Some timbers were simply not deep enough to start with for certain positions on the bridge but finally a spot was identified for each timber where the minimum amount of wood needed removal to sit correctly on the girders. The fact that a number were wedge shaped, meant we would have to rebate these on a slope to ensure that the top presented a level face for the baseplates and rail to sit on firmly.

Our team, comprising Graham Kuchel, Terry Garbett and Butch Collett, quickly got to work with chisels, saws and an electric planer and tackled the long list I provided. At times when things did not go quite right, a flow of colourful words addressed to the timbers or anyone who happened to be around, seemed to work wonders!

Near the end of all this but before the rails were refitted, I needed to make an urgent trip by section car to an isolated part of the line in the hills. As there was no working section car on the Mount Barker side of the bridge at that time, the front-end loader was called on to transfer one across the bare timbers. This unorthodox procedure was repeated on my return. There's always a way to keep the wheels rolling on a railway. It is quite remarkable that, commencing on 22 April, the bridge was finished complete with refitted rails in just seven working days. The first train would not have to terminate at Swamp Creek as some had predicted!

The badly rusted bolts which originally held the timbers to the girders were the old hook bolts which are no longer made. After assessing alternatives, most of them quite expensive and involving time consuming installation, I decided to try something new to railway structural practice, namely "Lindapters". These are ingenious devices precision made in UK and essentially convert a simple bolt to a hook bolt. They are now widely used in structural steel construction work and eliminate the need to drill girders to fix other members, in our case bridge timbers, to them using an ordinary bolt. So far the Lindapters are doing a great job on our bridge.

Overall the bridge is now in excellent condition and the rails sit firmly on the timbers at the desired 1 in 90 grade. After finishing the bridge, resleepering proceeded at a rapid rate and as usual there was the ever present need to regauge a lot of the remaining old sleepers. Our predecessors apparently were not too fussy about gauge and it varied from 18 mm undergauge to 32 mm overgauge.

On 13 July, we began work on a series of switches in the yard at Strathalbyn. In all, six out of the 18 switches in the yard plus the switch to Laucke's siding out by the silos were retimbered to a safe condition. Switch No. 1, near the Angas River bridge, required 40 long timbers and No. 12, at the extreme Victor end of the yard, required 48 timbers, the longest being 16.75 feet (5.1 m). The rotten timbers we removed certainly would not have carried trains for another season—most of them just fell to pieces as we pulled them out.

On 26 August, another AN ballast train arrived with 660 tonnes of granite ballast which was run out mainly between 78.3 km and 82.5 km. It had been estimated accurately to the last tonne and proved to be just sufficient. On 4 September, the AN tamper and regulator started work at Mt Barker (56.3 km to 56.7 km), then transferred to 71.3 km and began working towards Strathalbyn. Tamping proceeded without hitch to 73.7 km which was reached at 10.20 a.m. next day but then the machines travelled to Strathalbyn for the weekend off. The tamper team normally work during their lunch hours, taking it in turns operating the machines and in this way build up sufficient hours to knock off at 11.00 a.m. on Fridays. We had drawn the crow so to speak, as they were also due for a rostered day off this particular week and hence the early shut down that occurred on the Thursday.

Tamping began again at 73.7 km on 7 September and by the 12th, all tamping including four main-line switches at Strathalbyn had been completed right through to 82.5 km about a kilometre beyond the station. Late on the Thursday afternoon the machines retraced their steps as fast as possible to Mount Barker where they stabled overnight. "As fast as possible" are probably the key words because on our 1 in 45 grades the tamper can only manage 13 km/h flat out, so the journey back took nearly 2 hours. On 13 September, the machines tamped between 54.8 km (Adelaide end of Mount Barker platform) and 54.0 km at the Freeway tunnel, completing the scheduled work. By 11.00 a.m. they were back on the main line speeding down the hill to Balhannah.

Apart from refuelling and routine greasing, the machines only lost 30 minutes on account of the tamper being unserviceable in what was equivalent to six full days working. This was an exceptionally sweet run from our previous experience, considering both machines are subject to extraordinary stresses due to the very nature of their function. The quality standards achieved met our own exacting requirements fully and we now had a really excellent railway in the sections upgraded. Apart from 0.6 km not yet touched at Littlehampton and also Mount Barker yard, the main line from 50.2 km (at the Junction) to 82.5 km (beyond Strathalbyn) has been fully upgraded. Outside track experts who have examined it say that, overall, it has not been this good for at least 40 years.

The ballast trains and the tamping were Australian National's contribution to the project and ensured that all our hard work in resleepering resulted in a sound track with an excellent top and alignment. The severe dips, kinks and twists resulting from traffic over the line during the past 15 years plus the disturbance of the track by resleepering have been eliminated. It was indeed a most appreciated and worthwhile contribution from AN.

After completion of the tamping by AN, the SteamRanger team still had a lot of work to do. Firstly it was necessary to follow the tamper, replacing broken sleepers and redogging where necessary. This took 2 weeks with 93 sleepers replaced and 88 others redogged. Sleeper replacement then commenced on the main line at Strathalbyn yard and also on the loco sidings which were, in part, 40 mm overgauge. We had never intended to machine tamp this work on account of the low speed involved. It was, of course, thoroughly fork and beater packed. Our paid team ceased work on the 8 November. However, I was involved in work finalising the project until the end of December.

In all we replaced 16,080 sleepers, regauged a large number of the remaining ones, used 78,000 dogspikes, 33,500 baseplates and rehabilitated 31.2 km of a run-down railway. The total cost of the project was \$902,427 including the AN work valued at \$100,000. SteamRanger provided \$527,427 of the total plus volunteer input. With its steep grades, high embankments, sharp curves and lack of road access, the line is regarded as one of the most difficult railways to work on in South Australia.

Before reconditioning, it took 2 hours running time to negotiate the Mount Barker Junction to Strathalbyn section if the speed restrictions were strictly observed. Now, apart from the untouched section at Littlehampton, the ruling speed is 50 km/h on the sharp curves and 80 km/h on the long straights just after Mount Barker and the last 3.5 km before Strathalbyn. It is now almost possible to revert to the 1952 steam timetables which provide for a running time of 40 minutes on the Down journey—an improvement of 1 hour 20 minutes!

Acknowledgments

The assistance of Kim Bird with early station diagrams and Peter Lovell with closing dates of stations is gratefully acknowledged.

Naturally, a lot of people outside the Mount Barker to Strathalbyn restoration project helped me in this task. I am particularly grateful for the advice and assistance given by the Government Inspector Ron Stewien (former Chief Engineer of STA), retired AN RoadMaster Lionel Maynard and Barry Prescott of STA.

Attachments

As explained in the introduction to this downloaded version of Mr Harvey's article a large number of photos, diagrams and other illustrations have not been included in this file, but can be downloaded from a companion file.