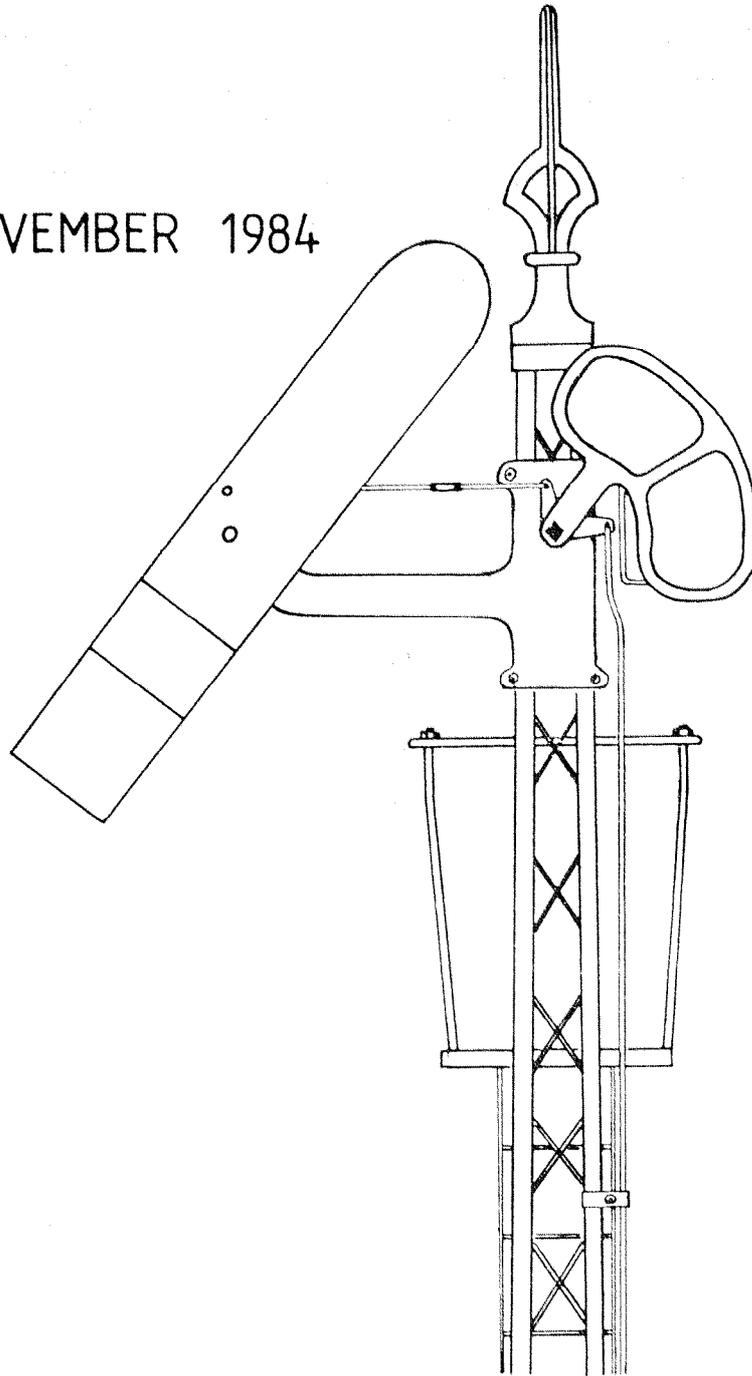


SOMERSAULT

NOVEMBER 1984



SRSV

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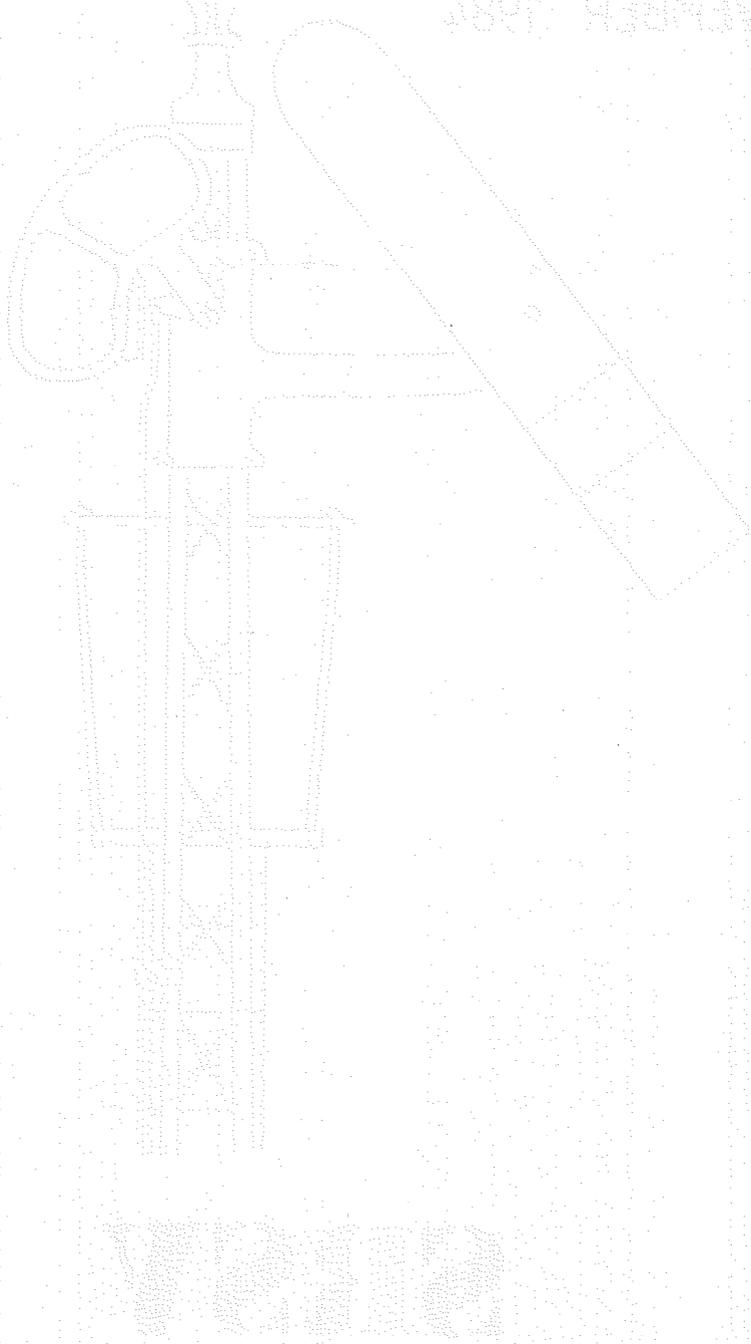
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NOVEMBER 1984



SIGNALLING ALTERATIONS

- WN 31/1984 SUBURBAN ELECTRIFIED AREA. Until further notice, Comeng suburban electric trains are now permitted to operate on all suburban lines with the exception for the following:
 * Newmarket-Flemington Racecourse,
 * Richmond-Sandringham,
 * Flinders Street-St. Kilda and Port Melbourne.
- ✓ 25/7/1984 ALBION-ST. ALBANS. Signalling diagram No 5/84 was issued and diagram No. 1/79 was cancelled. Boom barriers were installed at Furlong Road and pedestrian boom barriers installed at Furlong Road and the pedestrian crossing at Ginifer. Up automatic signal M564 was relocated to the up end of the up platform at Ginifer and renumbered M568. Stopping/Express push buttons were provided at St. Albans and are interlocked with Nos 9, 20 & 21 up home signals. A 5P key operated switch has been provided on the up platform at Ginifer so that M568 may be held at Stop in the event of a delay to an up train at the platform.
- ✓ 26/7/1984 WODONGA. The diamond crossing between signal posts Nos 3 & 8 has been removed and the standard gauge line straight railed. No 34 points were spiked normal and the disc signal on post 6 removed.
- ✓ 31/7/1984 ALLANSPORD. The points and signals were abolished.
- ✓ 1/8/1984 VIOLET TOWN. No 28 points (down end of yard leading from the main line to the platform) were relayed insitu and the lock bar No 29 replaced by a plunger with a lever lock fitted to No 29 lever.
- ✓ 8/8/1984 SUNSHINE. A lever lock was provided on lever No 23. (Points 23 lead from the back platform to the South Line at the down end.)
- WN 33/1984 DYSART-SEYMOUR. Instructions issued for the use of caution orders in lieu of pilot working between Dysart and Seymour "A" when signals have failed on the single line section. (The instructions were published in the September issue of Somersault.)
- ✓ 9/8/1984 WARRENHEIP. The down distant signal for the Geelong line has been fixed at caution.
- ✓ 12/8/1984 MENTONE. All sidings and the main crossover were abolished. The signals on posts 5B, 6, 7, 9 and the disc on post 5 were removed.
- ✓ 19/8/1984 MERLYNSTON-PAWKNER. Up home signal on post 62 was replaced by a light signal and the lever control of the signal from the platform quadrant at Merlynston was abolished.
- ✓ 19/8/1984 MOOROOLBARK. No 5 points (end of double line from Melbourne) were relocated 65 metres in the down direction.
- ✓ 20/8/1984 SHEPPARTON-KATAMATITE. A white diamond board has been erected at the site of Yabba South and up goods trains may be divided at this point. Both portions of the train are then taken into Dookie where the train is re-combined for the remainder of the trip.
- ✓ 23/8/1984 BATMAN-UPFIELD. New signalling diagram No 13/84 was issued and diagram No 24/82 was cancelled. Boom barriers were installed at Short's Road and Boundary Road. Pedestrian boom barriers were also provided at both crossings. A 5P key operated switch was provided at Merlynston to enable C400 to be held at Stop if an up train is delayed at the platform.
- WN 36/1984 NORTH GEEELONG "C"-WARRENHEIP. Commencing forthwith, where there is an interval between shifts at Lal Lal, Meredith, Lethbridge and Gheringhap, the signalman before ceasing duty must obtain a staff from the signal box in advance (up direction) and the staff must be placed in the staff exchange box. All signals applicable to up trains must also be cleared. The signalman at Lal Lal must also release a staff to Warrneheip who is authorised to use that staff for local or through traffic as required.
- ✓ WN 36/1984 MERBEIN. Commencing forthwith, Merbein may be opened as a Block Post in accordance with instructions.
- ✓ 28/8/1984 BAXTER-STONY POINT. Signalling diagram No 26/84 was issued. This diagram shows the arrangements at Baxter, Somerville, Long Island Junction, Hastings, Bittern, Crib Point and Stony Point and was issued in connection with the reopening of the line beyond Hastings, and the re-introduction of rail passenger services from 17 September. Flashing lights were provided at Warregine Road, Hastings and Woolley's Road, Bittern. A down two position automatic signal with a reflectorised letter "A" was provided at Woolley's Road and is restored to Stop by the operation of the

- staff/annett key exchange apparatus at the up or down end points, the signal may then be operated by the Normal and Reverse push buttons located at the up and down end points. Push buttons are located at the down end points for manual control of the flashing lights. A staff/annett key exchanger is located at both ends of the siding and the siding points are annett locked.
- ✓ 4/9/1984 DYSART-SEYMOUR. The Pilot Keys and boxes located at Dysart signal box and near post 46 at Seymour were removed.
- ✓ 6/9/1984 TALLAROOK. No 35 points were abolished and No 34 points were spiked normal.
- ✓ 12/9/1984 LETHBRIDGE. The down distant signal, post 1, was relocated 708 metres in the up direction. The signal is motor operated and is electrically repeated in the signal box.
- ✓ 13/9/1984 TALLAROOK. No 23 points were abolished.
- ✓ 15/9/1984 NORTH SHORE-NORTH GEELONG. New signalling diagrams Nos 27/84 (North Shore-North Geelong-Fyansford) and 28/84 (Little River-Corio) were issued and diagrams Nos 31/81 and 29/81 respectively were cancelled. Boom barriers were provided at St. Georges Road between Corio and North Shore, and at North Shore Road, North Shore. At Corio up home signal No 36 was renumbered U34 and a new up automatic signal for the East line was provided on the down side of St. Georges Road level crossing, the signal is numbered 36. At North Shore three new controlled automatic signals were provided to control movements across the roadway. Nos 1 and 5 for East and West line respectively control down trains and No 47 for the East line controls up movements. Pedestrian boom barriers were also provided at North Shore Road and at the pedestrian crossing near North Shore station.
- ✓ 22/9/1984 STRATHMERTON. The annett locks were removed from the platform quadrants and also from the quadrant lever at the down end points.
- ✓ 23/9/1984 MOOROOLBARK. The junction points (No 5) leading from the double line to single line at the up end were relocated 65 metres in the down direction.
- 25/9/1984 COLAC. Flashing light signals were provided at Cants Road level crossing at 155.026 km on the down side of Colac.
- ✓ 26/9/1984 WINCHELSEA. Flashing light signals were provided at Hesse Street (113.557 Km on the up side of the station) and at Cressy Road (114.076 Km on the down side of the station) level crossings. Two new light home signals were provided to control departure movements across both level crossings and are controlled by 5P key operated switches on the platform.
- WN 41/1984 CARWARP. Until further notice, the speed of trains departing from No 2 road must not exceed 15 kmh until the train has passed clear of the compound points in No 2 road. Notice boards have been erected in No 2 road suitably lettered.
- ✓ 8/10/1984 MURTOA. New signalling diagrams Nos 27/84 (Murtoa) and 30/84 (Murtoa-Dimboola) were issued and diagrams Nos 7/83 and 40/83 were cancelled. The mechanical frame and two position signals were abolished and replaced by three position signals operated from a control panel in the station building. The miniature electric staff instrument for the section from Lubeck and the staff ticket box for the section to Warracknabeal were relocated to the station masters office.
- ✓ 9/10/1984 CONDAH. The up and down home signals, and plunger locks were abolished and the main line points were secured normal.
- 11/10/1984 TERANG. Flashing light signals were provided at Kellambet Road level crossing at 222.406 Km on the down side of Terang.
- 11/10/1984 GARVOC. Flashing light signals were provided at Liang Road level crossing at 232.723 Km on the upside of Garvoc.

V.R. SIGNALLING HISTORY

No 41. HADDON

by Jack McLean

You may have noticed that I have a leaning towards little trains which run (or ran) through little stations where there is (or was) simple safe-working. Generally speaking these trains and these stations do not exist any more and we look to the past for examples. Haddon was one such place and although I only remember it on two occasions, I have found enough information to trace its rise and fall.

It was an original station when the line was opened from the first Scarsdale Junction to Scarsdale on 1 August 1883. It seems to have been a staff station from the beginning; at least it is shown as one in the Working Time-table of 19 January 1887. In those days, even small stations had stationmasters to attend to freight and passengers; in their spare time they might as well have interposed in the safe-working. It is likely that Haddon then only had the one loop in addition to the main line, but following the fashion of the era, the platform was set back from the straight, and there was space for two roads in between the main line and the goods siding. There were "semaphores" protecting the station from each direction, and the facing points were no doubt secured by hand locking bar and padlock which was the standard of the time.

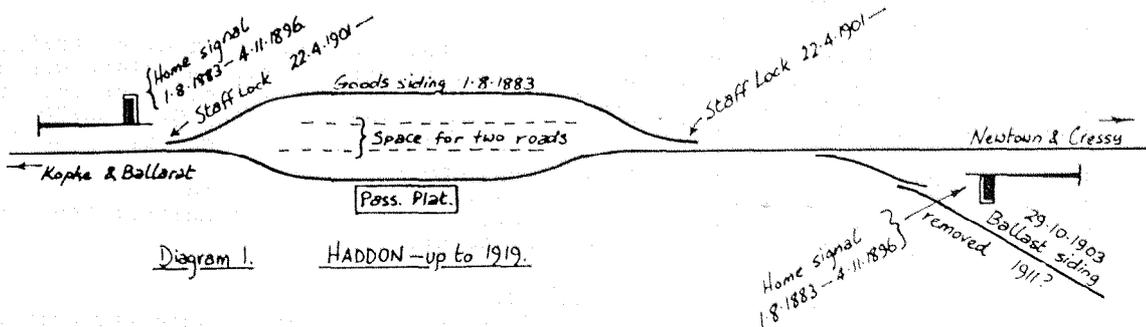


Diagram 1. HADDON - up to 1919.

Haddon was closed as a staff station on 8 September 1893, maybe without any crossings having taken place there, and the semaphores were "taken out of use" which probably means removed, on 4 November 1896.

On 22 April 1901, the staff for the section Scarsdale Junction-Linton was changed to a "Lock Staff" and the points in the main line at Haddon were "staff locked". The pattern of these staffs and locks then were much the same as the equivalent today.

BALLAST

As a result of gold mining activity in the area, large heaps of mine tailings remained, which were considered suitable for railway ballast. The first siding to remove this material was laid in on 29 October 1903; it left the main line a short distance on the down side of Haddon station. It was staff locked and ran in a south westerly direction. I have seen no records of ballast train working nor of the opening of Haddon as a staff station as this time and it would be interesting to know what train arrangements were made. The ballast at the 1903 siding had almost run out by November 1911 and another site was brought into use, this time near Kopke. (Kopke was known as Trunk Lead until 2 May 1910.) It had until then only a dead end siding facing down trains and as shown in diagram 2, the platform was off-set from the main line.

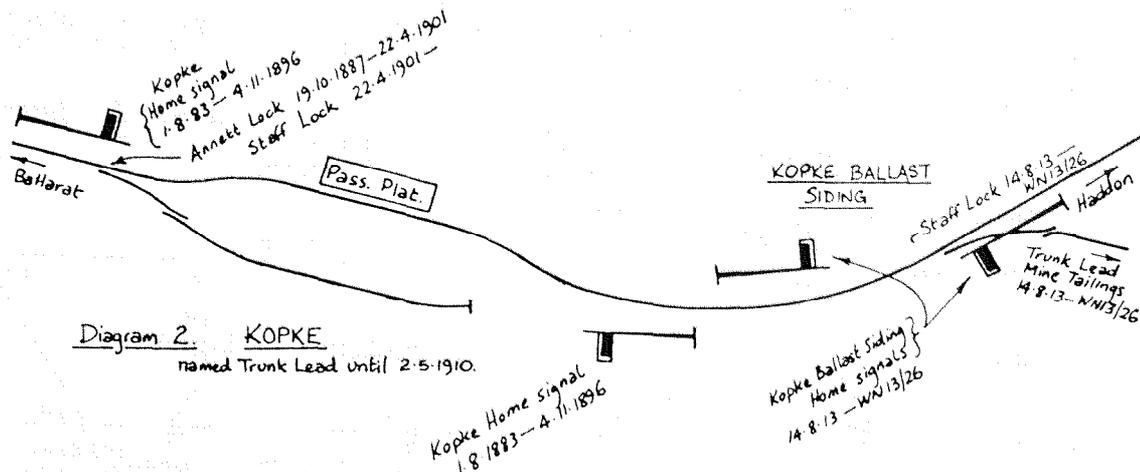


Diagram 2. KOPKE named Trunk Lead until 2.5.1910.

It had had one Annett Lock from 19 October 1887, which was changed to a staff lock on 22 April 1901. On 14 August 1913, a second staff locked turnout was laid in, a short distance beyond the platform, and led to a long siding towards the site of Trunk Lead Mine. Two home signals were provided and Kopke Ballast Siding was opened as a staff & ticket station (working with Linton Junction and Newtown) continuously from then until about September 1915 (WN 36), and again for about 15 weeks in 1917 (WN 37 & WN 52), when ballast went to Wingeel. It was possibly open at other times, but the supply was less than expected and after lying idle, the siding was closed and signals removed in 1926 (WN 13).

In the meantime, ballast operations returned to Haddon, and on 11 November 1919, a new staff locked siding was brought into use, facing down trains and at the down end of the platform. Weekly Notice 46 of 1919 shows that Haddon, once again, had two home signals and could be opened as a staff & ticket station when required.

On the down side of Haddon, Newtown had been made a staff & ticket station on 24 April 1911 in connection with the construction and later the operation of the line to Cressy. It must have (or at least seemed to have) been an important junction with its 40 lever interlocking frame (installed on 2 December 1913), and the tea stall serving passengers connecting between trains as well as those making a through journey. Since 25 September 1911, Ballarat to Cressy trains had been running through Haddon but the timetable was so arranged that they did not need to cross between Linton Junction and Newtown.

Over the next 25 years, Haddon continued to provide ballast from at least four different sites but in each case the junction was at the down end of the platform.

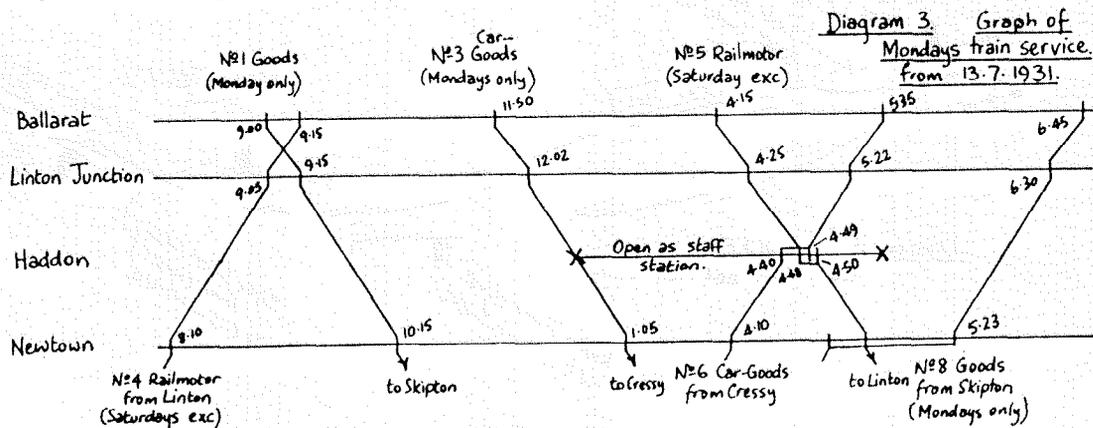
In 1921 (WN 2) there was a proviso that passenger and mixed trains were not to be placed in No 2 road to cross; in other words the place was still only open for the working of ballast trains. In the pre-railmotor years, it was open as a staff station during the following periods: WN 46/19-WN 30/20, WN 2/21-WN 24/21, WN 27/21-WN 35/21, late in 1922-WN 47/22, sometime in 1926, September 1929, January 1931 and July 1931 and probably at other times. During the WN 46/19-WN 30/20 period it was a staff station for the passage of the Prince of Wales' Royal Train on Wednesday, 2 June 1920, but neither the Royal Train nor the Pilot Train were scheduled to cross there.

THE RAIL MOTOR SERVICE

Between 1926 and 1930 there had been a rail motor passenger service on the Buninyong line. When the passenger service on that line ceased, the AEC was transferred to the Linton line and it commenced running on 27 October 1930. The running times were almost identical to the Skipton mixed which was the train replaced by the AEC. The service at this time consisted of a 7.50am Up Fridays excepted, a 12.45pm Down Saturdays, and a 4.15pm Fridays and Saturdays excepted. Fridays was probably maintenance day but was also the day when the morning up and afternoon down Cressy car-goods filled in part of the gap. In expectation of close following moves between Linton rail motors and Cressy car-goods trains, Haddon was listed as a telephone block post in Weekly Notice 42, 1930.

At this time, the northbound Colac-Ballarát car-goods connected at Irrewarra with the 6.30am down Warrnambool, and after leaving Newtown at 3.15pm, it was able to meet the Linton rail motor on the double line at Linton Junction. Some time in 1931, probably 13 July 1931, the car-goods was altered to connect at Irrewarra with the 8.20am down. Times were roughly an hour later and gave a departure from Newtown of 4.10pm instead of the previous 3.15pm. Haddon now became a regular crossing place between two "passenger" trains as the car-goods waited at Haddon for nine minutes to cross the down Linton rail motor. The rail motor from this date ran at 7.50am up and 4.15pm down Saturdays excepted.

As the cross took place only on Mondays, it would have been uneconomical for Haddon to be a staff station continuously, by either putting a man in charge there, or stopping all trains for the guard to do the safeworking. It was therefore opened on Mondays only, closing again the same day, the instructions being contained in circular A 1211/31. The train service on Mondays is shown on the graph in diagram 3.



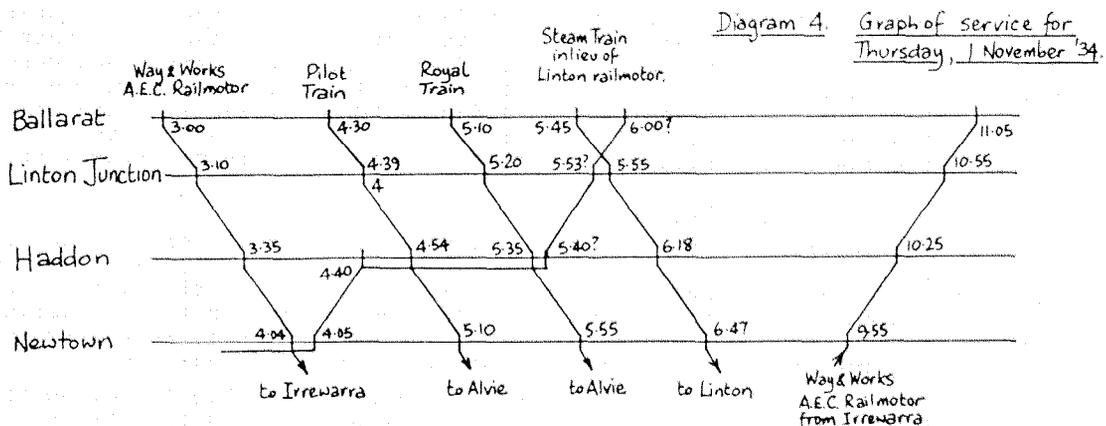
Haddon was to be opened by the 11.50am Ballarat-Cressy car goods and closed by the 4pm Skipton-Ballararat goods. The lock up box was apparently kept at Ballarat and contained the two short section staffs (Linton Junction-Haddon and Haddon-Newtown). To open Haddon, the long section staff was withdrawn and locked in the box, and at the same time the two short section staffs were released. The Haddon-Newtown staff had to be taken to Haddon as a signed for parcel.

The 'A' circular went on to say that there was only the main line and one siding at Haddon. In the event of there being trucks in the siding, No 6 car goods had to stop at the Up Home signal; No 5 rail motor was to be brought to the platform, set back and turned into the siding. After No 6 had departed, No 5 had to be set back again, to enable it to depart via the platform. No 6 was not allowed to shunt at Haddon because of the closely approaching rail motor. After the cross, the signalman had to set about closing the place as a staff station. He despatched the car goods on a ticket and would normally have waited at Haddon for the ACRE message from Linton Junction, but the long section staff had to finish up for the day at Newtown where it would be required to despatch the up Skipton goods on ticket and taken by the rail motor the next morning to Linton Junction. So the Haddon signalman had to accompany the rail motor to Newtown, taking with him the Haddon-Linton Junction staff as well as the lock up box containing the long section staff. The rail motor driver, of course, would have the Haddon-Newtown staff.

On arrival at Newtown, the two short section staffs were to be locked up in the box and the long section staff released. The signalman would then wait for the Skipton goods and after giving the driver a Linton Junction ticket and provided that he had received the ACRE message from Linton Junction for the car goods, he would join the train and take the lock up box back to Ballarat where it would remain until the next Monday.

The working timetables for these trains are interesting, as in contrast to the instructions in A 1211/31, it would seem that the time table people expected the car goods to arrive at the platform at 4.40pm and then the rail motor to arrive (straight into the loop?) at 4.48pm, which would enable the car goods to leave for Ballarat at 4.49pm. The rail motor could then set back and depart via the platform at 4.50pm. I noticed that No 5 was instructed to arrive first at the platform, whereas I thought it would have been just as convenient for rail motor passengers to join and leave the train at ground level, but the words "train in the siding" were used. No doubt, it was expected that the rail motor would be replaced by a passenger train during maintenance or holiday periods.

One of the occasions when the rail motor WAS replaced by a train was on 1 November 1934, when the Duke of Gloucester on his centenary visit, travelled from Ballarat to Alvie by Royal Train. The Linton motor was replaced by a train for a couple of days and during this time it was used to place Way and Works employees between Ballarat and Irrewarre, and to take them back afterwards. As you can see from the graph in diagram 4, the 3pm down rail motor



crossed the up Thursdays Cressy car goods at Newtown. The car goods then pressed on to Haddon, where at 4.40pm, it was side tracked for the Pilot train at 4.54pm, and the Royal train at 5.35pm. Haddon may not have had a crossing loop at that time. Did the car goods get side tracked in the goods loop?

After the Royal train had passed and the up end points unspiked, the car goods would have needed to make a fast run to Linton Junction to meet the Linton passenger train due there at 5.55pm.

On 20 November 1931, the interlocking at Newtown was re-arranged so that guards of departing trains could, in most cases, leave points and signals in position for the next arriving train. Until 1950, when the interlocking was

removed, instructions for guards were published in the working time table and showed which levers had to be pulled or put back, and whether the driver should get a staff or a ticket. These instructions have been of great assistance in working out what happened at Haddon.

Ballast trains were still working to and from Haddon, for instance during November 1932 and February 1933, and on these occasions, it would be opened as a staff station continuously, and the circular A 1211/31 suspended.

Some time in 1933, the up morning and down afternoon Cressy car goods trains were replaced by a mid-day down Wednesday running to the times of No 3 and by an afternoon up on Thursdays, running to the times of No 6. This meant that Haddon had to be open as a staff station for crosses on Mondays AND Thursdays. Although WTTs for the next few years state that it will "be opened as a staff station on Mondays and Thursdays to cross Nos 5 & 6", it could not conveniently open and close with trains, and the Newtown instructions referred to Haddon as the next staff station every running day except Friday. Certainly taxis were not considered for placing signalmen or opening or closing staff stations when no convenient trains were running, therefore, I must conclude that there was a permanent signalman there, and when the staff ticket exchange box was installed in 1938 (WN 33), specifically to enable No 8 Skipton goods to pass unattended, his hours might have been quite reasonably, say from 8am to 5.30pm.

THE CROSSING LOOP

Haddon DID get a crossing loop but it was laid in in a curious way and I do not know when. There was at that time a short dead end siding leading off the goods loop and facing down trains, its introduction does not seem to have been recorded in the Weekly Notice. In order to avoid the points crossing loop-to-No-3 being superimposed on the points No-3-to-the-dead-end, the former were placed on the down side and clear of the latter, and in fact, the crossing loop took off from the goods siding rather than vice versa. It is more easily shown in diagram 5. The date of its installation has eluded me. It was NOT there when A 1211/31 was issued on 2 July 1931, but it WAS there in March 1939 when I travelled on the line.

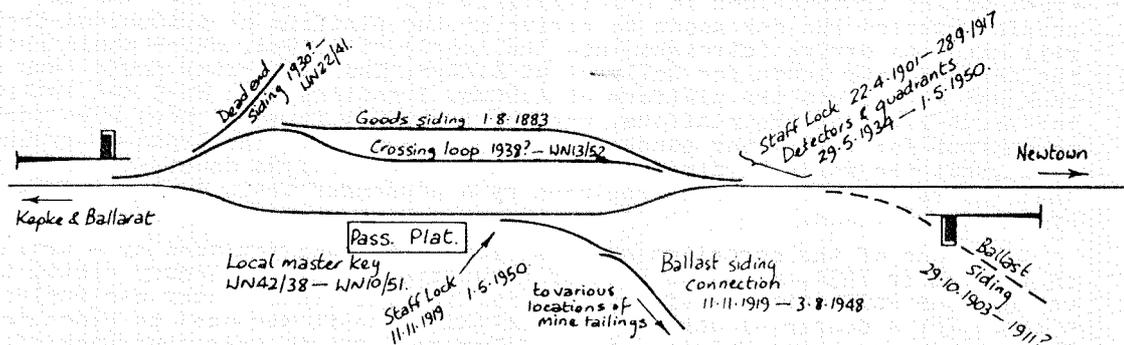


Diagram 5. HADDON - from 1919.

Could it have been installed on 29 May 1934 when the (still staff locked) main line points were equipped with detectors and local quadrants? (WN 24/34) Or was it installed around 1937 when the rail motor times were altered so that only one time was shown at Haddon, 4.57pm, in between the arrival and departure times of the car goods, 4.45pm-4.58pm? Or was it installed in 1938 (WN 42), when a local staff master key was provided so that the signalman could unlock the facing points without waiting for a train to bring a staff?

WARTIME AND AFTER

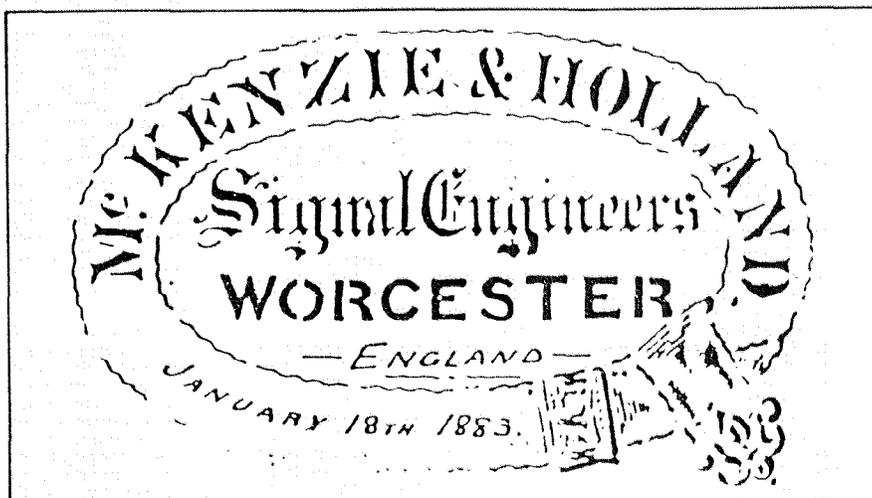
Collectors of time tables will know the difficulty or perhaps impossibility of finding out what trains ran during and just after WW2. There was an on-and-off coal shortage for most of this time. Summary time tables were issued occasionally and might have had a hundred amendments to them during their life time. Many railway enthusiasts, including myself, were overseas. Paper was scarce and added to railwaymen's problems then and mine now.

Train services through Haddon are almost impossible to follow now. It seems that the Ballarat-Colac car goods service was reduced from twice to once a week around June 1942. It ran south on Mondays and north meeting the rail motor at Haddon, on Wednesdays. Between Easter and Christmas 1944, the connection between the north bound car goods and the up Dimboola day train, which maybe no one had made for a year or two, was abandoned. The train was still a car goods but it really took its time and did not leave Newtown until 5.40pm after meeting the rail motor there.

After 13 years, there was no longer a need for Haddon to be opened as a staff station to cross the two "passenger" trains, but if time tables are to be believed, in the next four years, local ballast trains were running perhaps as often as daily. Just when the last ballast train ran I have been unable to ascertain but WN 31 of 1948 showed that ballast was no longer available.

(continued on p83)

A segment of railway signalling history



The above title block is a copy of that appearing on an inked linen tracing, in excellent condition, held in the Drawing Office of the Chief Signal and Telecommunications Engineer Queensland Railways.

The format of the title block, the name of McKenzie and Holland and the date of the drawing, truly suggests these are the ingredients of an interesting historical presentation.

Recognising the very different levels of engineering technologies, communications and organisational difficulties which engineers and entrepreneurs had to cope with in the second half of the nineteenth century, the development of the McKenzie and Holland Company and the technologies upon which its operations were based, and for which it became famous throughout the world, make interesting, if not fascinating reading.

It is, perhaps, appropriate to note that the company development has to be viewed in the context of the opening of the first steam worked public railway in England on the 26th September, 1825, when the engine, "Locomotion", driven by George Stephenson, first ran between Stockton and Darlington.

Some 16 years later, in 1841, a Mr. Hutton Gregory, engineer on the London-Croydon Line, adapted the established design of Pasley's apparatus used by H.M. Royal Navy for message exchange, to design, construct and erect at New Cross, South London, the first semaphore signal for railway use.

In 1859, a partnership was formed to purchase the Vulcan Iron Works in Worcester, England, the company being established as "Engineers, Millwrights, Brassfounders and Plumbers," engaged in the manufacture of "iron girder bridges and railways work in general."

The first specification of true interlocking between signals, namely, "the movement which is dependent upon another, cannot even commence until such other movement has been fully completed", was the subject of a device patented in 1860 (Patent No.31) by Mr. Austin Chambers, an employee of the North London Railway.

In 1861 and 1862 respectively, Walter Holland, previously employed by the Oxford, Worcester and Wolverhampton Railway, and John McKenzie, previously locomotive superintendent of the West Midland Railway, joined the Vulcan Iron Works partnership, and the company became known as McKenzie, Clunes and Holland.

Manufacturing Rights Secured

In 1862 the company was successful in securing the sole manufacturing rights for the period to 1867, for the patented Chambers design of locking frame (Patent No.31). This development proved to be so successful that a large new factory was built in Worcester to accommodate the business which arose.

In a parallel development during the same year, John Saxby, who was operating in partnership with John Farmer, took out Patent No.1754 for a mechanism which carried out the true principle of interlocking of points and signals. This patent did not, however, include the principle of the Chambers Patent No.31.

Name Change

The change of the Worcester company name of McKenzie and Holland occurred in 1865, and the following year, the company took out a further patent, No.1963, for interlocking between levers.

A year later, in 1867, the company experienced something of a setback, when the rival organisation, Saxby and Farmer, purchased outright, the original Chambers Patent

No.31, for the sum of 2,000 pounds Sterling.

During this period in the far away United States of America, a young George Westinghouse was serving as a junior engineer in the Navy of the Union Forces during the American Civil War (1861-1865).

In 1869, at the age of 22, George Westinghouse was working as a salesman, and in his spare time, he designed and patented the first compressed air brake for railway coaches. This device having been successfully tested in April of that year on the Pittsburg Cincinnati, Chicago and St. Louis Line (commonly known as the "Panhandle Division"), enabled George Westinghouse to form the Westinghouse Air Brake Company, Pittsburg, Pennsylvania, manufacturing air braking equipment for the Pennsylvania Railroad.

New Developments Continue

The next significant signalling development was that in 1875, when W. R. Sykes patented the lock and block system of working.

Signalling technology and production capacities were sufficiently well advanced and developed by 1878, to justify the long sea voyage to Australia by William J. Griffiths of McKenzie and Holland, for the purpose of organising a display by the firm at the International Exhibition of 1879-1880. The Exhibition is recorded as having been a great success, and the McKenzie and Holland exhibit was described in "The Record" as "working models of railway station and junction, illustrating the interlocking and working of points, signals and level crossing gates on railways". The exhibition judges were reported to have commented that, "this arrangement of interlocking etc. has the merit of great efficiency combined with moderate cost".

In 1880, Mr. W. Liley took up permanent residence in Australia as the official McKenzie and Holland representative, and was soon successful in securing a commission for the company to design, manufacture and install an interlocking system at the Campbelltown Junction of New South Wales Railways.

In the same year, the rival company, Saxby and Farmer, exhibited at the Melbourne International Exhibition, and won an award. Also in 1880, George Westinghouse invented a pneumatic system of interlocking signals.

George Westinghouse was responsible for many significant engineering developments and on the 7th July, 1888, he paid US \$1 million to secure exclusive rights to the patents plus royalties on equipment produced for the alternating current induction motor, a patent for which had been taken out on the 1st May, 1888 in the USA by a Croation, Nikola Tesla.

Queensland Railways Play Vital Role

The "Semaphore Iron Works" was established by McKenzie and Holland on 2 acres of land at "Spottiswoode", in Victoria under the control of Sidney P. Wood, and in 1888, the then Government of Queensland, extended an invitation to McKenzie and Holland, to establish a works in Brisbane for the manufacture and supply of railway signalling equipment. Within 12 months, arrangements had been completed for the survey of land at the then Northgate Terminus of the Brisbane railway system, after which, an area of land in excess of 1 acre was granted to the company as a site for the new works.

After negotiations, a 3 year contract for the supply of signalling equipment was signed on 1st July, 1890, between Queensland Railways and McKenzie and Holland, under which the Northgate factory traded as The Toombul Iron Interlocking Works.

The next major development in the Company's history, was the acquisition of the patents relating to electropneumatic signalling systems previously owned by the Westinghouse Brake Company Limited of London, which was then a subsidiary of the Westinghouse Air Brake Company of Pittsburg, Pennsylvania, U.S.A.

In 1900, George Westinghouse entered into arrangements with McKenzie and Holland, resulting in the subsequent amalgamation of the two companies.

During the period before the final amalgamation of the two companies, there was further rationalisation within the industry under which McKenzie and Holland, Saxby and Farmer Ltd., Dutton and Co. Limited and Evans & O'Donnell & Co. Ltd. all joined together to form Pneumatic Electric & General Engineering Company Limited.

The final rationalisation took place in 1907, when McKenzie and Holland Limited combined with the Westinghouse Brake Company Limited to form McKenzie, Holland & Westinghouse Power Signalling Company Limited, with the objective of developing the business of automatic power signalling with pneumatic equipment manufactured by Westinghouse at their Kings Cross, London, premises, and the mechanical equipment manufactured by McKenzie and Holland at Worcester.

Operations Expand

In the meantime, the Spotswood, Victoria, and Northgate, Brisbane, manufacturing property was extended with the purchase of an additional 4 acres of land.

Early in 1914, the capacities of the Northgate, Brisbane factory were augmented to facilitate the production of electropneumatic signalling equipment to Queensland Railway requirements. Under a QR contract awarded in 1915, the company re-signalled Brisbane Central Station and provided a 12 lever extension of the then existing electro-pneumatic interlocking machine, and the whole system was relocated.

Subsequent QR contracts executed at the Northgate factory included the 120 lever frame for Mayne Junction and 65 lever frame for Gympie.

Modern Technology Introduced

As part of the Brisbane Electrification project, the electropneumatic signalling systems at Central and Mayne were converted to all electric signalling systems and controlled from the Mayne Control Centre. The electropneumatic signalling system at Gympie was replaced by an

all electric signalling system as part of a computer based centralised traffic control system.

In 1920, McKenzie and Holland transferred the remaining plant and equipment from the Worcester factory to the Chippenham, Wiltshire, works of the then Evans & O'Donnell premises, and the McKenzie and Holland, Worcester, factory and offices were closed down.

The company structure in Australia continued to develop and diversify, eventually covering railway signalling, railway braking, permanent way and hydraulics areas of railway and general industries.

Activities at the Toombul Iron Interlocking Works (Brisbane), developed and diversified from the original signalling base, and factory capacities were augmented to include iron and steel foundry facilities, forging facilities and general fabrication, machining and assembly, together with those for specialist railway trackwork production.

During the development of the Northgate, Brisbane factory, the product range included horse-drawn graders, rock crushing plants, and marine and industrial diesel engines, as well as the broad range of railway products. Particular projects of note included the complete design and manufacture of a steel girder bridge installed on the Beaudesert railway line, the manufacture and supply of all the rivets used in the construction of the Brisbane Storey Bridge and the painters' gantry installed and still in use on the Sydney Harbour Bridge.

Concomitant with this development, the Semaphore Iron Works factory of McKenzie and Holland in Spotswood, Victoria, progressed from the original mechanical signalling base to become heavily involved in the design and manufacture of a wide range of electrical signalling including colour light signals, train stops and relays.

From this strong background, and with the benefit of research and development connections and Westinghouse Brake & Signal Co. in England and Union Switch and Signal in the U.S.A., the Melbourne factory and the design office has progressed to develop "state of the art" computer based signalling and traffic information systems. Operating since 1951 as a Division of Westinghouse Brake & Signal Company (Australia) Pty. Ltd., there has been a long and continuing relationship with the various Australian Railway Systems.

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(This article was sent in by Jack McLean and had been sent to Jack by John Buckland who had cut it out of the Queensland Railways 'Railway Digest', July 1984.)

V.R. SIGNALLING HISTORY

STAWELL - MURTOA

(continued)

by David Langley

No 39. LUBECK

17 December 1878 saw the extension of the Western main line to Murtoa but Lubeck was not opened until 23 February 1879; perhaps it was not ready in time. Staff & ticket working came to the area on 1 March 1879, the sections being Glenorchy-Lubeck-Murtoa, and it is fairly safe to say that Lubeck has been a crossing station for its entire life, as during the first four months, traffic seemed to have been worked according to the time table and who knows where crossings were made, if any.

The branch line to Rupanyup was opened on 1 June 1879 and construction of the line had probably started about the time of opening of the main line and so Lubeck has probably always been a junction station even if for the first five months there were only construction trains using the branch line.

Signalling at Lubeck would have been very simple with just a home signal from each direction and the main line points secured by hand locking bars. With a man in attendance for all trains, this form of point security was deemed quite sufficient for the slow speeds of the trains.

As speeds rose, the need for greater security of the points became apparent and with the provision of interlocking at Lubeck on 18 July 1888, the points were now secured by a facing point lock and various signals erected to indicate to the driver where he was going and that it was safe to do so. It is assumed that little or no alteration to the tracks took place and so this layout (see Figure 1) is probably very much the same as provided on opening although diagrams of that period are not readily available.

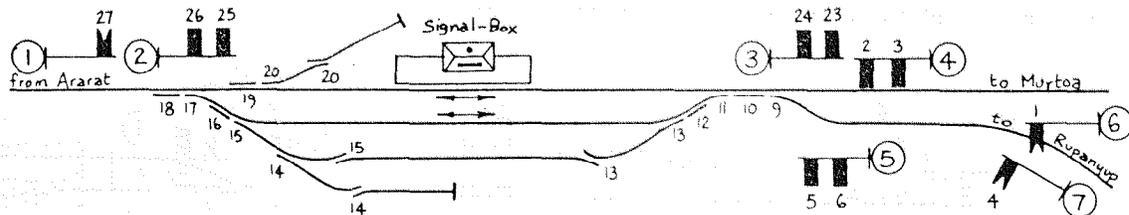


Figure 1. Yard interlocked.

As train length grew, so did the need for extra accommodation at crossing loops and the crossing loop here was extended at the Melbourne on 3 March 1909 (Figure 2). As the newly located crossing loop points were now 'out of range' of the signalbox, a crosslocked auxiliary frame was provided near the points and had four levers - two signals, one point and crosslock. The down home signal into No 2 road was now worked from the auxiliary frame but was still controlled from the signalbox so as to maintain the interlocking between arrival signals into No 2 road from either end. Similarly, the ground frame controlled the up arrival home signals into No 2 road from both main and branch line. The point lever also worked the facing point lock by means of an escapement crank, a popular Victorian feature in this situation. The crosslock was released by lever 17 in the signalbox (the previous point lever) whilst lever 18 became spare.

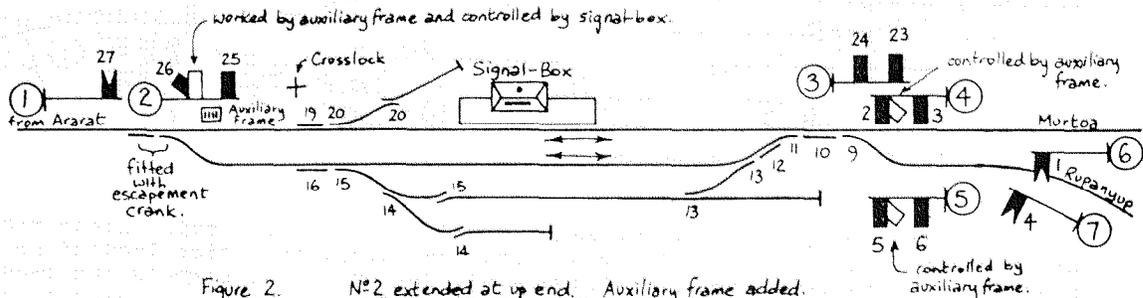


Figure 2. No 2 extended at up end. Auxiliary frame added.

The layout at the Murtoa end of the yard, although permitting a large variety of moves to be made, did not allow moves to be made on the main and branch lines at the same time and so on 5 January 1912 (Figure 3) this was rectified by connecting the branch line directly to No 2 road. A curved 'K' style of crossovers were installed between the two lines rather than the more normal delta style and perhaps the space available was insufficient for the

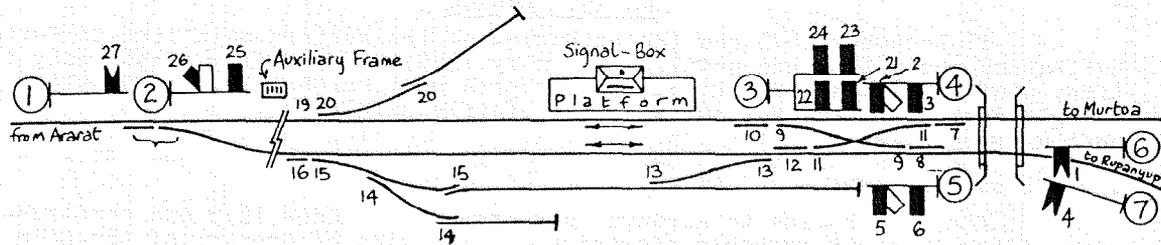


Figure 3. Curved "K" crossing provided.

latter. Signalling diagram No 43/12 was issued superceding diagram No 67/09. Post 3 was converted to a bracket post and was also provided with two extra arms. These were necessary as the post now stood clear of the connections at this end and controlled movements out of either Nos 1 or 2 roads to either line whereas before it stood beyond the crossing loop points and merely protected the junction points.

Further changes at the Melbourne end of the yard occurred on 15 March 1914 (Figure 4) when the crossing loop points were abolished and a new cross-over was provided nearer to the station and within 'pulling range' of the signalbox on the platform. Because of this, the auxiliary frame and associated equipment was removed. The connections to the sidings were also relocated a little further out thus increasing the accommodation of the sidings. Post 2 was replaced by a bracket post at this time.

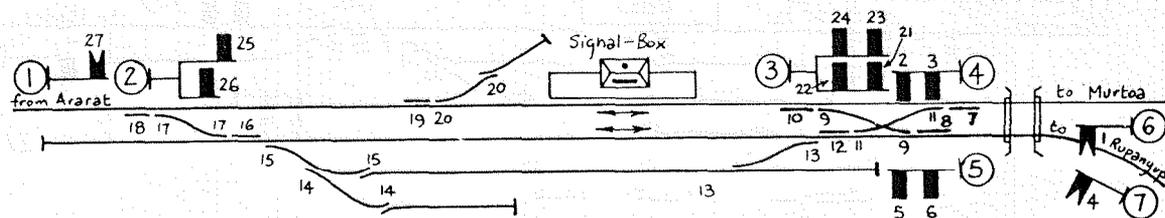


Figure 4. Alterations at up end - auxiliary frame abolished.

Major changes occurred at Lubeck on 11 April 1915 (Figure 5) when the 27 lever frame was replaced by a 45 lever frame in the signalbox. Additional signals were added including departures homes in the up direction from Nos 1 & 2 roads. An additional dead end was added at the up end of No 3 road and was provided to serve the grain silos erected nearby.

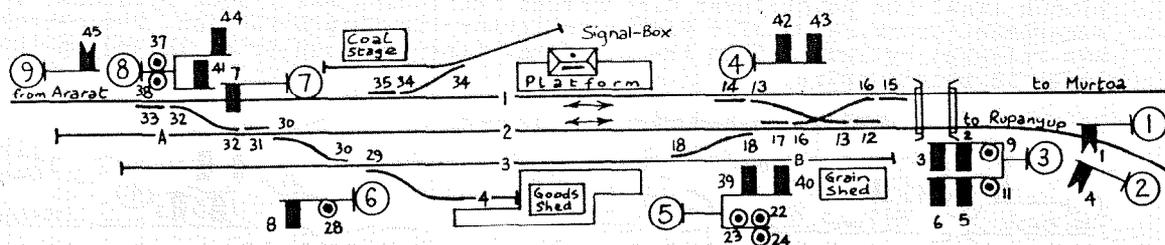


Figure 5. New interlocking frame provided.

The curved 'K' crossing was removed, probably for maintenance reasons, this time located on the

separate posts governing moves from Nos 1 & 2 roads to the main or branch, these arms previously being on posts 4 & 5. The discs on post 5 were replaced by two ground discs, post 10, for moves from No 3 road. Post 3 was replaced by two separate posts and the discs on post 3 were removed altogether. Post 9 was provided to govern moves from 'X' to either Nos 2 or 3 roads.

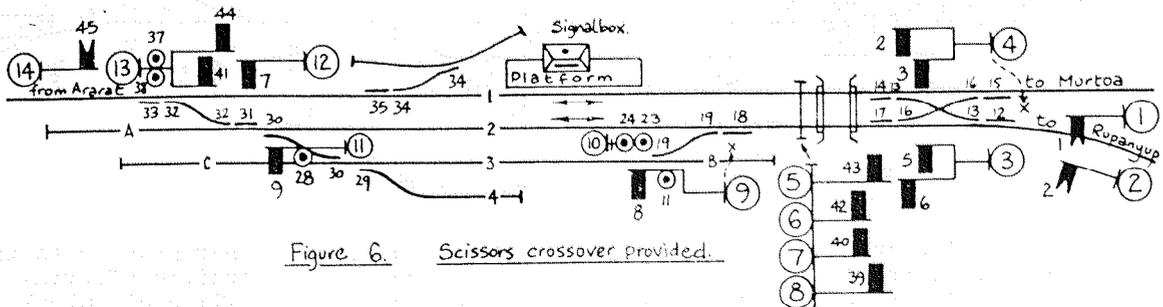


Figure 6. Scissors crossover provided.

Weekly notice No 47 of 1929 advises us that the interlocking machine was moved to the new signalbay on 10 November 1929 and that six calling-on signals were provided, as the yard was now track circuited and the home signals fitted with signal replacers (reversers). The provision of the calling-on arms meant that if a track circuit failed, the signaller did not have to walk out to the arrival signal and issue a caution order for the train to pass the signal. It was also used, now, to signal an engine or train into an occupied road. Figure 7 shows the layout and is taken from signalling diagram No 22/29 which superseded diagram No 5/24.

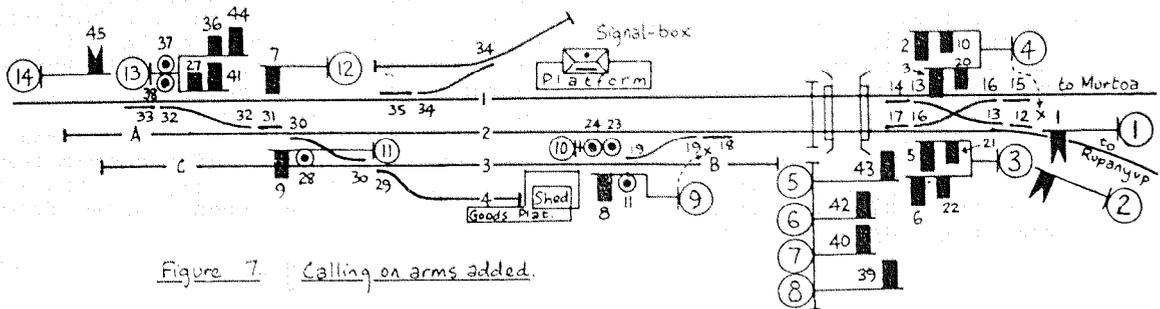


Figure 7. Calling on arms added.

A number of minor signal alterations took place over the next 15 years. The up branch distant signal was fixed at caution on 12 February 1930. It is presumed that this was a maintenance saving move as this signal would surely be used very little. The up and down main line distant signals were replaced by new motor operated signals 254 metres and 153 metres further out and this, no doubt, was done due to further increases in speeds of trains. The coal stage siding was removed on 27 May 1941 and I guess it was to provide steel for use in the war effort, engines of branch trains were probably service at Murtoa. The points in the car dock were replaced by catch points but the entire dock only lasted a further three years, being removed in January 1944 (WN 6/44).

In 1944 a large number of alterations were made again in connection with the increase of siding accommodation and longer crossing facilities. On 13 February 1944, post 12 was replaced by a new bracket post some 14 metres nearer the platform but with only the right hand arm in use, four days later a dead end extension was provided at the up end of No 4 road. 22 February saw post 9 relocated to the signal bridge and a new connection provided between

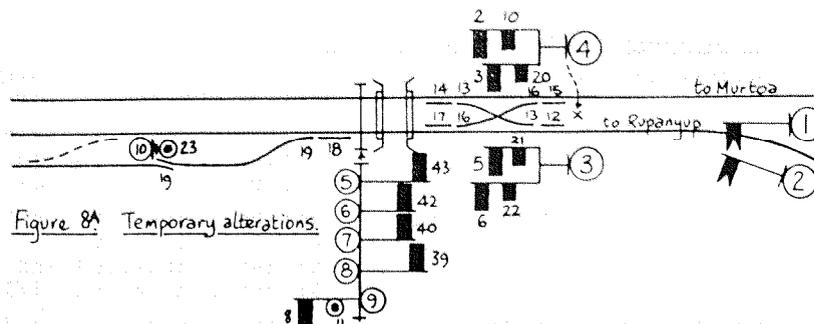
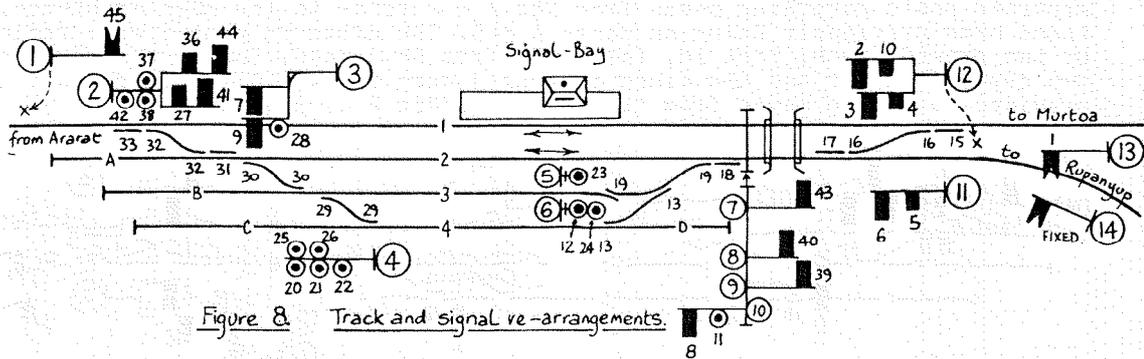


Figure 8A. Temporary alterations.

Nos 2 & 3 roads, the dead end being incorporated into No 3 road and post 10 becoming one disc. The final arrangements were brought into use on 12 March 1944 (Figure 8) and were shown on signalling diagram No 2/44. No 4 road was now connected to No 3 road at the down end and a dead end siding provided.

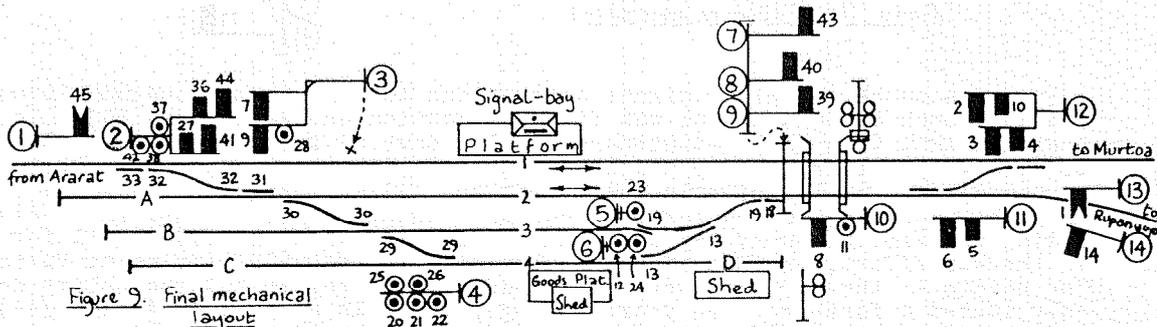
The delta crossover was reduced to a plain crossover denying branch trains access to the platform and a number of additional signals were added.



Lubeck had now reached its zenith and with two minor changes to the signalling, the 1944 layout was sufficient to handle the traffic offering for the last 40 years. However, the heyday of mechanical signalling at Lubeck is about to end for the CTC project is due to sweep all mechanical signals from the area in the very near future.

The up branch distant was made a working signal again on 22 February 1977 but this time as an outer home signal, a location board being provided some distance further out. This signal now permitted the signalman at Lubeck to place a train on the branch line even whilst the train staff for the section was away on a branch line train. Up til this time, the branch was used for the crossing of very long trains or more than one train but only when the staff was still at Lubeck which must have caused some problems at times.

The second alteration occurred on 30 June 1982 when flashing lights were provided at the level crossing. Lever locks were provided (26 May 1982) on levers 2, 8, 10, 11, 39, 40 & 43 in order that the signal could not be cleared if a train had entered the approach track circuit. When this happened, a push button on the block shelf was pushed to commence the flashing lights and after the necessary warning time had elapsed, the lever lock would be released. To provide protection in No 2 road, post 10 had been removed from the signal bridge and placed on a ground mast on the down side of the crossing, this occurring on 31 March 1982. This present layout at Lubeck, the final with full mechanical signalling, is shown in Figure 9 and has been adapted from signalling diagram No 26/81.



Like the rest of this series of articles, and any future ones to come, on the Western line stations, no mention has been made, or will be, of any alterations or reductions in connection with the CTC project. This will be covered by a separate article after the completion of the project.

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Alan Jungwirth's Question Time

Answer to Nov '83 question - The co-acting dwarf signal ts at North Geelong "C" and is for Post 20.

May '84 question - The last set of interlocked gates was installed at Carrum on 2/4/1947. They were removed on 19/12/76 a/c booms.

July '84 question - Boom barriers were installed at Point Nepean Road, Moorabbin on 19/1/1958 (the 6th set installed) and these were the

SIGNALLING RECORD SOCIETY (N.S.W.)

1985 TOUR PROGRAM

For information on these tours or about any other matter relating to the N.S.W. group, contact Bob Taaffe, 11 Beribong Place, Thornleigh, NSW, 2121. 02-8489994.

- Saturday, 16 February - Port Kembla, Port Kembla North, A.I.S. Complex, Allan's Creek, Unanderra and Dombarton.
Meet at Port Kembla s.b. at 0900 hours.
- Saturday, 20 April - Bankstown, Punchbowl Car Sidings, Lakemba, Canterbury, Canterbury Race Sidings, Meeks Road and Sydenham.
Meet at Bankstown s.b. at 1100 hours.
- Saturday, 15 June - Parramatta Road Crossing, Rosehill, Sandown, Camellia, Rydalmere and Carlingford.
Meet at Parramatta Road s.b. at 1100 hours.
(Rosehill Races will be conducted this day)
- August, date to be advised - Junee to Wodonga two day tour to be held in conjunction with Victorian society to celebrate the 10th Anniversary of the S.R.S. in Australia.
- Friday, 18 October - Werris Creek to Parkville (two-day tour)
Meet at Werris Creek station at 0900 hours.
- Saturday, 21 December - Wolli Creek Junction, Kingsgrove, Riverwood, Revesby and East Hills. Site of Glenfield Junction will also be visited.
Meet at Wolli Creek Junction s.b. at 1200 hours.

Preview of the December 1984 visit.

The final visit for this year organised by the NSW Group will be on Saturday, 8 December 1984. Starting at Auburn at 1200 hours, the boxes at Auburn, Clyde, Granville and Parramatta will be viewed. It has been eight years since the group previously visited this stretch of the metropolitan system. Here are a few notes on each of these boxes to whet your appetite for the visit.

AUBURN - A "Kellog Key" installation of 1954 which replaced a nearby mechanical box. It is fitted with the last 'light in' box diagram to be made. There are four lines from here through to Clyde, two main and two relief. Double light colour lights with 'low speed' indications exist through to Granville, whilst shunt signals here are of the banner type.

CLYDE - This box opened in 1959 when it replaced two existing mechanical boxes. It's rotary switch interlocking covers Clyde station, the junction to Carlingford and the northern ends of both the Clyde up and down yards. It has an early example of a 'light out' diagram. There is a down relief line through to Granville.

GRANVILLE - This is the last of the immediate post war boxes to be opened in Sydney. Dating from 1960, it replaced a tall elevated structure on the opposite side of the bridge. It is the last power installation wholly undertaken by the Signals Branch. It later took over the work of both Dog Trap and Merrylands boxes. It is fitted with a rotary switch panel and stainless steel type diagram with orange lozenge shape lamps. There is an up relief line to Merrylands which can be used for wrong direction running.

PARRAMATTA - This is a hybrid structure containing a 'light in' diagram with both large levers and Kellog Keys. Semaphore signals still abound here and in fact the last Selby E.P. route indicator exists at the east end of the station. The brick box stands on the centre island platform of this four road station and contains a 56 lever Wilkin pattern cam and tappet frame. (Wilkin was the NSW's last interlocking engineer). A Kellog Key panel operates the E.P. interlocking at the Sydney end of the layout whilst another controls the commencement of the four track section to Westmead. At the present time the double line from Granville to Parramatta is being quadrupled and when

finished Granville's control area will be extended to include Parramatta.

Other news from north of the border.

1. UK Technical Notes: Two more in the series have arrived and are available at the prices below. These are being produced on a cost only basis.

No 4. G.W.R. Lever Frames - The Twist Frames \$2.50
No 5. Signalling the Layout - WR practice 1948-72 \$3.00

If they are to be posted please include an extra \$1.00 to cover postage and envelope, or elase they will be handed to you next time someone sees you.

2. Subscriptions - A budget of the 1985 magazine publication program was accepted at the October 1984 meeting along with suggested subscriptions. The new rates are: N.S.W. only \$10.00, N.S.W. & U.K. \$21.00.

NOTE: We can do B-B cheaper but we have virtually no reserves, so it was decided to hold that subscription at the 1984 level.

3. Meetings - The next entertainments meeting will take place on Friday, 8 March 1985, at the ARHS commencing at 1930 hours. Entertainment will be an illustrated talk on "Observed Signalling Practices in Ireland (North and Republic) and the west coast of U.S.A." by Bob Taaffe.

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Letters to the Editor.

From Bob Whitehead.

Dear David,

I note your article in Somersault, Vol 7, No 5, regarding Wal Wal. My information re the ballast line (Warranook Ballast Fits line) was gleaned mainly from correspondence books of the Engineer of Existing Lines, and from local newspapers, also a line diagram from the Estate Office.

Some years ago when I did this research, it was possible to pick up the route of the line from its connection with the main line, round the rear of the platform and out onto the roadway. As I remember, the back of the platform at the down end was slightly narrowed to accommodate the ballast line.

Regarding the Portland line notes, the location of Myamyn Loop as shown in the WTT is incorrect. The correct distance is 363.7 Km. Maroona, Dunkeld, Glenthompson and Heywood will remain as crossing loops, and in fact, Maroona and Dunkeld were recently extended as part of this program.

I enclose a list of present stations showing proposed new loops and the sectional distances. At the present time, it seems that Greenhills Loop will not be built, or at least not for the time being.

From Bob Taaffe.

Dear David,

.....You or other members of the S.R.S.V. might be able to help me with the following questions and queries I have.

1. Power Frames - Victoria has a number of power frames from four manufacturers - GRS?, Metro-Vickers/GRS, Westinghouse and McK&H. Could someone give me a list of where they were installed, serial numbers, type, date in use & out of use, and number of levers.

e.g. North Melbourne MV/GRS pistol grip S/N 11 etc etc

2. Miniature Electric Staff

- a) 1. Did the original instruments come direct from Railway Signal Co. in UK?
2. Were they all 'M' series?
3. Were they all battery operated?
4. How many were supplied?
5. When?
6. Serial numbers?
- b) 1. When did McK&H act as agents for RSCo.?
2 - 6. as above.
- c) 1. When did McK&H make their own instruments?
2. Were they all 'M' series?
3. Were they all magneto?
4. How many were supplied?
5. Serial numbers?

- d) How many MES instruments did McK&H make for the other states?
Serial numbers if possible.

Any person who is able to help Bob with any of the above information if requested to contact Bob either via the editor of Somersault or write directly to Bob, his address is 11 Beribong Place, Thornleigh, NSW, 2121. Ph: 02-8489994.

To start the flow of information, the following list is of the power frames on the V.R. in order of installation.

LOCATION	DATE INSTALLED	LEVERS	MAKER	REMARKS
SOUTH YARRA	31/10/1915	32	GRS	electro-mechanical d.c. conv to a.c. 19/12/19 abol 15/4/45 a/c new box.
CAMBERWELL	22/6/1924	32	GRS	electro-mechanical until 28/7/63 then point machines installed. abol 8/11/64 a/c panel in existing box.
FRANKLIN STREET	17/3/1924	72	McK&H	abol 24/3/84 a/c panel.
VIALUCT JUNCTION	24/8/1924	40	McK&H	abol 18/11/78 a/c panel box.
HAWTHORN	14/6/1925	32	GRS	electro-mechanical until 13/10/63 then point machines installed. abol 13/8/72.
FLINDERS ST "D"	11/4/1926	55	W'house	abol 27/3/66 a/c panel box.
BRIGHTON BEACH	19/12/1926	20	GRS	Style 4A. still in use. had 4 lever No 6 patt frame for gates until 22/12/68.
NORTH MELBOURNE	10/6/1928	56	GRS	abol 20/5/1983 a/c panel.
SOUTH KENSINGTON	21/10/1928	68	McK&H	still in use.
DANDENONG	23/6/1929	80	McK&H	still in use.
FOOTSCRAY	4/5/1930	20	McK&H	abol 21/11/76 a/c four lines
CAULFIELD	26/11/1933	80	McK&H	still in use.
SOUTH YARRA	15/4/1945	32	McK&H	abol 1/5/1960 a/c six lines to Flinders St. frame has been preserved at Sig.School

No of Levers: West. - 55, GRS - 172, McK&H - 392, total 619.

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HADDON

(continued from p74)

THE DEMISE OF A STATION

The depressing run down of facilities follows.

The up end dead end siding had been removed on 3 June 1941 (WN 22/41) whilst the ballast siding was declared out of use on 3 August 1948 (WN 31/48) and was removed altogether on 1 May 1950 (WN 18/50). This date was also when the up and down home signals, and detectors were removed from service. Haddon was, rather belatedly, "disestablished as a staff & ticket station" on 6 March 1951 and the staff ticket exchange box along with the local master key, was removed (WN 10/51). The disconnection of the crossing loop was announced in weekly Notice 13 of 1952. Haddon had long ceased to be of value as a block post when this facility was cancelled on 7 September 1955 (WN 37/55). The line between Newtown and Irrewarra had closed on 18 November 1953 and so no Cressy trains passed.

For the next couple of decades, the Linton motor, as a 102hp Walker and in the role of 'the school train' continued to take reluctant children to school and relatively happy ones home, Saturdays excepted. And the Skipton goods ran once a week on Mondays. When the rail motor made its last run on 17 December 1976 and, I suspect following an absence of goods revenue, Haddon was closed for all traffic on 31 August 1977 and the remaining facility, the staff locked goods loop, was removed on 28 September 1977.

It would be nice to say that I remember Haddon well and that many were the times when I have watched trains crossing there. The truth is that on the only occasion on which I travelled on the car goods (in March 1939), all I put in my note book was the layout of the station. No doubt we crossed the motor there but it must have been one of my off days.

One must remember too that it was not at all easy to get to these places as few of us had cars then and often the only way to watch trains was to travel on them.

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PROBATION DEPARTMENT

NAME	ADDRESS	CITY	COUNTY	STATE
JAMES EARL RAY	3717 W. WASHINGTON	MEMPHIS	SHELBY	MISSISSIPPI
JAMES EARL RAY	3717 W. WASHINGTON	MEMPHIS	SHELBY	MISSISSIPPI
JAMES EARL RAY	3717 W. WASHINGTON	MEMPHIS	SHELBY	MISSISSIPPI
JAMES EARL RAY	3717 W. WASHINGTON	MEMPHIS	SHELBY	MISSISSIPPI
JAMES EARL RAY	3717 W. WASHINGTON	MEMPHIS	SHELBY	MISSISSIPPI
JAMES EARL RAY	3717 W. WASHINGTON	MEMPHIS	SHELBY	MISSISSIPPI
JAMES EARL RAY	3717 W. WASHINGTON	MEMPHIS	SHELBY	MISSISSIPPI
JAMES EARL RAY	3717 W. WASHINGTON	MEMPHIS	SHELBY	MISSISSIPPI
JAMES EARL RAY	3717 W. WASHINGTON	MEMPHIS	SHELBY	MISSISSIPPI