Allison

Sydney Live Steam Locomotive Society
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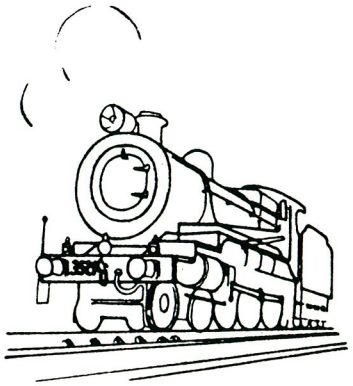

August 1989.

1989 President's Report.

The past year has been very successful for our Society and our funds were amply boosted by the very well attended three day Bicentennial Event held last June. The ladies who do a magnificent job for us running the kiosk really excelled themselves for those days, the Society is most greatful to the ladies concerned.

Our thanks also to Mike Tyson, Ron Larkin and Bernard Courtenay for their efforts in the organisation of this event.

At the 1988 Annual General Meeting the members were pleased to grant Life Membership to John Hurst in apperciation of his service to the Society for the past forty years.

Our most senior member in age Jack Rule died on 13th April after several years of poor health following a very severe accident whilst crossing the road.

A charity day for the Crowle Home in September was most successful, however the charity day organised for the Spastic Centre in March had to be cancelled on the day due to the heavy rain.

The interclub visit to our grounds in October was not as well attended as had been the case on past occasions, the day was very hot and there had been several other similar events in the preceding months. A number of members and locomotives attended the Wagga Wagga interclub visit in May.

The Annual Convention hosted by the Lake Macquarie Society was very well attended unfortunately the very wet weather restricted the activities of the visitors and their locomotives.

The carriage shed extension is almost complete,elevated riding trucks can now be run into the shed on one road, two other roads, one for elevated and one for ground level should be completed soon. There is provision for two additional ground level roads to be added when required. A steel plate door is required to secure the storage room of the carriage shed.

The elevated track on the western boundary has been realigned to provide a safe working clearance after a sewer manhole was lowered by the M.W.S.& D.B.

A number of members have been working on the sorting and setting up of a library of Model Engineer magazines given to the Society.

Most of the new flood lighting is complete and will be greatly appreciated in the next few winter months.

After many years of discussion and planning we are nearly ready to commence the construction of a new public access footbridge over the tracks at the southern end of the grounds. A start has been made on the relocation of the elevated track at this point.

Finally I wish to thank the Directors and members for their support through out the past year and remind all members that their help is required to assist in the operation of our society which now has 67 full members and 7 provisional members.

J.L.Hyde, President.

Signalling Record Society.

On the April running day we were visited by a group from the Signalling Record Society. After starting the morning at Hawkesbury River Signal Box, then Cowan, they ended the day at "new" West Ryde Signal Box. As the weather was good there was a large

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crowd, they saw some impressive train running and were impressed with the signal box operation and the Society in general.

The Signalling Record Society is a small, specialist group of railway enthusiasts who are particulary interested in signalling systems and equipment.

Warwick Allison.

L.M.S. "DYAK" 2-6-0 1939/1989

A brief history of this 2½" gauge locomotive, which was completed in 1939 and still has a current boiler certificate, follows.

In 1936 my Mother was reading the Amusements Section of the Sydney Morning Herald and noticed that the Sydney Society of Model Engineers was holding an exhibition on Saturday at Ashfield. Knowing the interest her husband John Ellison Hurst and two sons John and Brian had always had in trains, at that stage it was "O" gauge Hornby electric and an "O" gauge steam, she produced this information and off to Ashfield we went. After visiting the exhibition and seeing the "Red Terror" and other locomotives and meeting the late C.S. Mackellar, the late C. Gunning and others, Father was off to O.B. Bolton to acquire the plans and a number of castings for the 2½" gauge 2-6-0 "Dyak".

Over the next couple of years, Father, with some help from his two sons, used lathe, shaper, other small tools and considerable guidance from the two model engineers mentioned above, produced the "Dyak". At this point I must mention that a number of parts including the cylinders were provided by the late C.S. Mackellar and the boiler was built by our Secretary, Alan Mackellar. Eventually the great day arrived in 1938 and "Dyak" was ready for its first run on 40 feet of straight track across the backyard of our family home at Cremorne. With the required steam pressure showing on the pressure gauge the throttle was opened and the loco immediately came to life and showered everyone with sparks of charcoal and cylinder oil from the displacement lubricators. The test was a success even though it was difficult keeping the firebox full of charcoal. Eventually briquettes were used as charcoal proved hopeless.

After completion in 1939 it ran regularly at the SSME grounds at Ashfield and at the Mackellar's home track at Rhodes where many charity days were held to raise funds to aid service personnel during the Second World War.

With the formation of the SLSLS and the building of the track at West Ryde the "Dyak" was a regular attender on the track and covered many miles hauling the driver and two or three passengers on the level or near level track. As the size of the locomotives increased to 3½" gauge and 5" gauge and the level track was replaced with the present one with varying grades, it became impractical to haul passengers in addition to the driver.

Some 30 odd years ago, new wheels, axles and axle boxes were fitted and the valve gear was completely overhauled as the years of work had taken its toll. Today, it is in reasonable order and quite capable of hauling a driver around the elevated track at the SLSLS West Ryde.

I hope this history is of interest to our members and other readers of the "Newsletter."

Brian Hurst.

Duty Roster.

Sep. '89. W.Richards, T.Geraghty, W.Sandberg, J.Ranford, J.Hagan, H.Spencer, A.Cottrell.
Oct. '89. G.Sharp, B.Kilgour, R.Larkin, J.B.Hurst, C.Wear, T.Collett.
Nov. '89. A.Mackellar, V.Scicluna, P.Ferguson, E.Holmes, J.Stephens, D.Price, K.Sewell.
Dec. '89. M.Haynes, M.McAulay, N.Sorrenson, J.Sorrenson, B.Courtenay, D.Gash, W.Hamilton.

Future Events.

Our public running day in September will feature as part of the Granny Smith Festival. In view of this running is to start at 12.00 mid-day.

Blue Mountains Society 25th Aniversary. The October long week end will mark the fore mentioned event. Saturday will be a special running day, the public will be catered for on Sunday and Monday. A special dinner will be held on Saturday night if any members are interested they must see our Secretary, Alan, for details.

CROWLE HOME CHARITY DAY. The normal November running day.

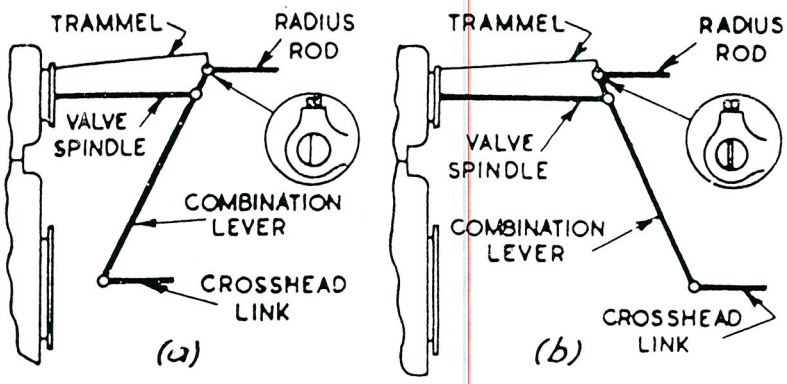

FIG. 52-7.

(c) Checking the length of the Eccentric Rod

With the engine still on back centre, move the link block from full fore gear to full back gear and note any movement of the valve spindle. This can be done by holding the trammel in place, as in FIG. 52-7, and comparing the free leg with the arc previously scribed on the pin in step (b).

If the trammel leg does not reach the scribed arc, the eccentric rod 9, FIG. 52-1, is too long; conversely, if the trammel leg overlaps the arc, the eccentric rod is too short.

The effect of such errors in the eccentric rod will be to draw the lower end of the link too far backward, or force it too far forward. Consequently, as the link block is moved from fore to back gear, the radius rod 4, combination lever 18, and valve spindle 1 will be forced forward or drawn backward, depending on whether the rod is too short or too long.

Correcting Errors:

Make any necessary corrections by lengthening or shortening the eccentric rod, as required, before proceeding further.

(d) Checking the length of the Radius Rod

With the engine still on dead centre, move the link block from full gear to mid-gear position. Note any movement of the valve spindle by checking the movement of pin 3 with the trammel as in step (c). If the valve spindle is pulled toward the link, the radius rod is too long; if the valve spindle is pushed toward the steam chest, the radius rod is too short.

NOTE:- The effective length of the radius rod must be equal to the radius of curvature of the link slot.

Correcting Errors:

The radius rod must now be shortened or lengthened by an amount sufficient to correct the error, otherwise equal leads at all points of cut-off will be unobtainable.

(e) Equalising the Leads

Move the link block to the full fore gear running position. With the engine still set on back dead centre, scribe an arc on the valve spindle with the valve trammel used for marking the port opening position. Set the engine on front dead centre and scribe a second arc on the valve spindle. Determine the leads on each dead centre by measuring the distance between each arc and the corresponding port opening mark on the spindle.

If the leads are unequal, the valve must be adjusted along its spindle sufficient to equalise them. For example, if the lead on front centre is $\frac{7}{32}$ in., and on back centre $\frac{5}{32}$ in., the valve, assuming it is an inside admission valve, must be moved backward on its spindle:-

$$\frac{\frac{7}{32} - \frac{5}{32}}{2} = \frac{1}{32} \text{ in.}$$

NOTE:- The spindles of the inside admission piston valves of C36, C38, D57, and D58 class locomotives are provided with check nuts, by the aid of which endwise adjustment of each valve relative to its spindle is facilitated. If the valve is adjusted on its spindle, however, it will be necessary to re-locate the port opening marks.

52-11 THE SOUTHERN VALVE GEAR

The Southern valve gear, which was so named because it was first introduced in the Southern Railway System in America, is a very simple and compact type of radial valve gear. It differs from the Walschaert valve gear in that the entire movement of the valve is derived from the return crank.

52-12 GENERAL ARRANGEMENT

The general arrangement of the Southern gear, as fitted to D55 class, inside admission valve engines, is shown

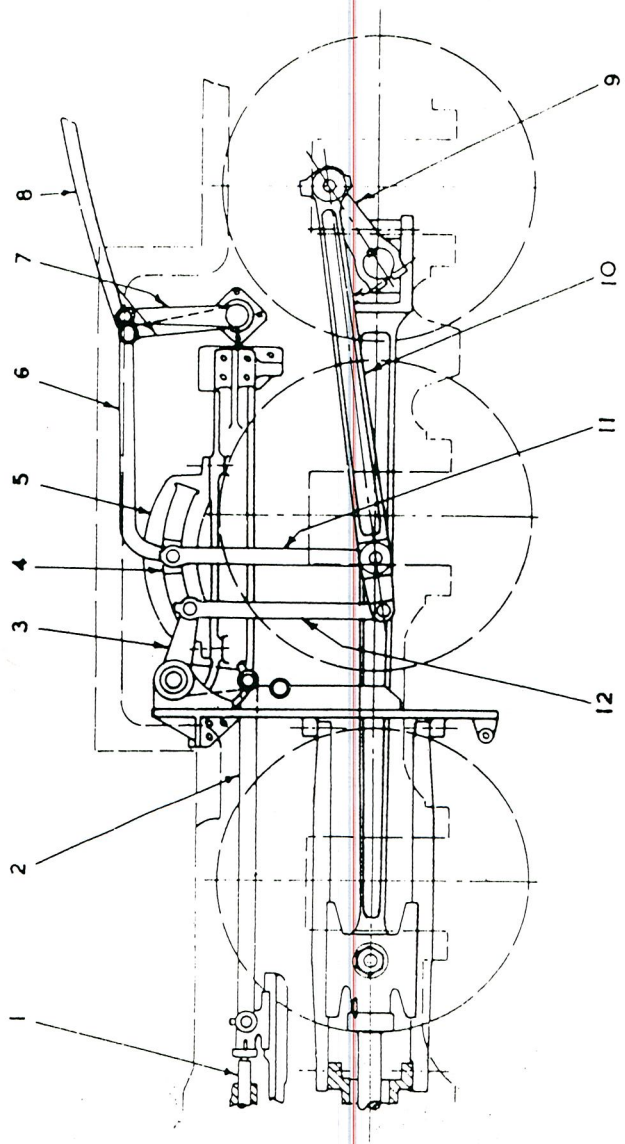

FIG. 52-8.

in FIG. 52-8. The return crank 9 is secured to the main crank pin, and is connected by means of the eccentric rod 10 to the transmission yoke 12, the upper end of which is attached to one arm of the bell crank 3. The other arm of the bell crank is connected to the valve spindle 1 through the valve rod 2, as shown.

The lower end of the radius hanger 11 is pivoted to the eccentric rod, while the upper end is attached to the link block 4 which slides in the curved slot of the fixed horizontal expansion link 5. Movement of the link block in the slot is controlled by the auxiliary reversing rod 6 which, in turn, is actuated by the reversing mechanism in the cab through the main reversing rod 8 and reversing arms 7.

52-13 PRINCIPLE OF OPERATION

Referring to FIG. 52-9, which shows the crank 5 on forward dead centre and the link block 2 in full fore gear position, it will be seen that the pin 4 of the radius hanger 3 will occupy the position B.

Rotation of the crank in the direction shown will cause the pin 4 to swing about the link block through the arc ABC. This action, in turn, will cause the transmission yoke pin 6 to move in a path indicated by the figure FG. The resulting vertical movement of the pin is transmitted through the yoke 7 to the bell crank 1, causing the latter to oscillate and move the valve backwards and forwards over the steam ports.

52-14 REVERSING THE ENGINE

As the link block is moved toward the centre of the link, the arc ABC traced by the pin 4 will gradually assume the horizontal position; consequently, the figure FG described by the pin 6 will become flatter, with the axis vertical. As a result, the vertical movement of the transmission yoke will be decreased, the effect being a reduced valve travel and an earlier cut-off.

NOTE:- The actual valve movement in mid-gear during each stroke of the piston is equal to twice the lap plus twice the lead.

Further movement of the link block toward the back gear position will cause the pin 4 to move in an arc DBE, the inclination of which gradually increases as the block approaches full back gear position. Since the arc inclines in the opposite direction to the fore gear arc, the figure HJ described by the pin 6 will also incline toward the opposite side of the vertical centre line. The major axis of the figure will gradually increase until full valve travel is obtained, but with the valve moving in the opposite direction.

s effect on the valve movement can be more