

# *The* **NARROW GAUGE**



No. 41 JUNE 1966

**THE NARROW GAUGE RAILWAY SOCIETY**

# THE NARROW GAUGE RAILWAY SOCIETY

Hon. Secretary : Mike Swift,  
13 Quarry Close,  
Brockholes,  
Huddersfield.

Hon. Editor : Henry Holdsworth,  
76 Tower Lane,  
Leeds 12.

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Subscription £11.0d. Juniors (under 18 yrs) 10/-

## Membership details

Initials A—M J. R. I. Huxley,  
26 Belwood Road,  
Chorlton-cum-Hardy, Manchester 21

Initials N—Z G. G. Foster  
9 Sinclair Avenue,  
Crumpsall, Manchester 8

## EDITORIAL

By the time you are reading these notes the Annual General Meeting of the Society will be over, for yet another year. I think folk who do not attend this premier meeting miss-out, it is the opportunity for members to air their views on the way things are done, and going to be done, in THEIR Society and we usually have one or two interesting debates. The railway visit before the meeting and the slide/film show afterwards round out the programme into a good N.G.R.S. day out.

We really are a friendly Society, membership throughout the world is now moving towards the 400 mark. Spare a thought for the officials of the Society who freely give many hours a year on a voluntary basis to promote the N.G.R.S. They enjoy doing their job but some members seem to think they should be treated like paid juniors! Any help you feel you can give would be welcomed by the main society officials or your local area committee.

Keep the 1966 Photographic Competition in mind when you are out and about with your camera this summer. We don't want pin-ups - just Narrow Gauge subjects in black and white up to  $\frac{1}{2}$  plate size.

Best Wishes,

Henry Holdsworth.

COVER PHOTO No. 8 'FENELLA' AT DOUGLAS STATION WITH PEEL TRAIN 29.7.65.  
per M.A. Reynolds.

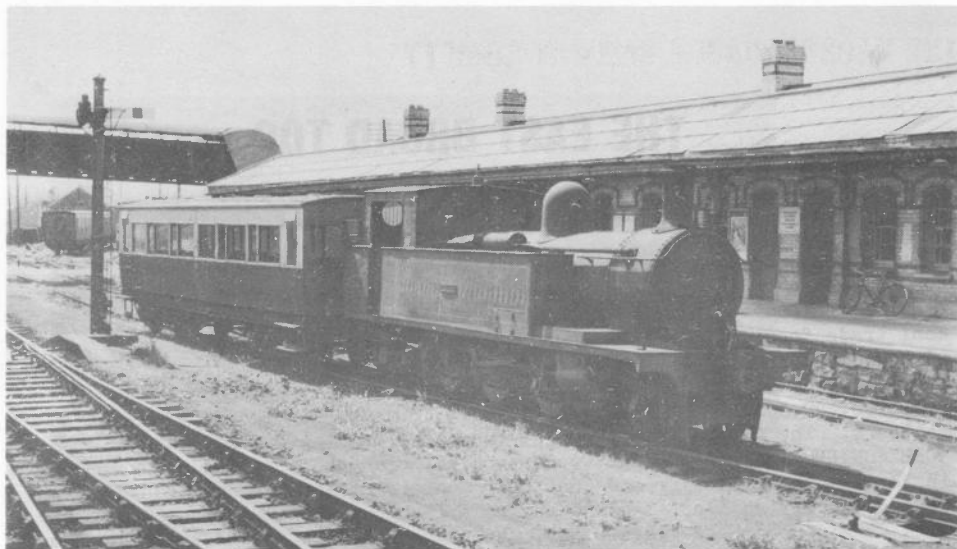
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M.A. REYNOLDS

# THE EAST BROAD TOP

## Part II

by Ivan Stevenson

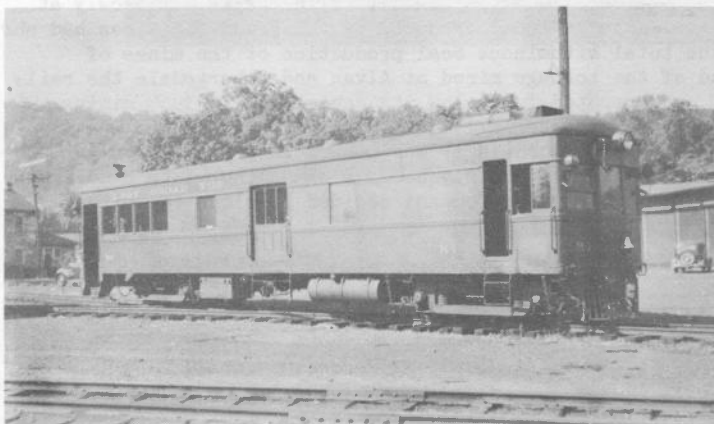
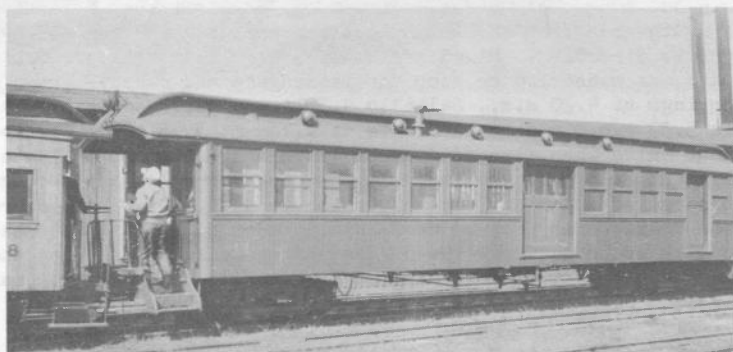
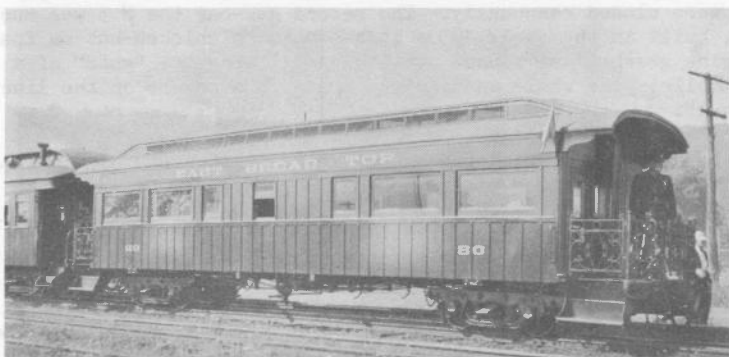
Coal and freight trains were not the only revenue earners to burnish the heavyweight rails of the E.B.T. The railroad maintained a passenger service as late as 1953, when rising costs coupled with the decline in the coal trade forced it to cease passenger operations, except for the carriage of the Company's miners on mixed trains Nos. 7 & 8. In his book "HIGHBALL" published in 1945, Lucius Beebe records that the line owned 15 passenger vehicles, 10 coaches, 2 combines, 1 private parlour car, and 2 gas-electric railcars. The gem of this fleet of "varnish" was the private car, No. 20 "ORBISONIA". This beautiful wooden-bodied, clerestory roofed car was built in 1880 by the Billmeyer and Small Car Company of York, Pennsylvania, its ornate balcony railings led the way to a fabulous interior pannelled with fine inlaid woods and green plush, the passengers sat in individual wicker chairs whilst enjoying the passing scenery through the wide windows. Originally built for the use of high officers of the Company "ORBISONIA" is reputed to have carried former United States President Grover Cleveland when he made fishing trips in the district. Happily this wonderful example of coachbuilding is still in existence, being one of the 5 passenger vehicles still in running order when the line closed in 1956.

Billmeyer & Small also built car No. 18 whilst the E.B.T.'s own shops provided Nos. 5 & 24. The railroad also purchased several passenger cars secondhand! These came from the 3 ft. gauge Boston, Revere Beach and Lynn when that now forgotten road electrified, the B.R.B. & L. claimed to be the "busiest Narrow Gauge Railroad in the U.S.A." was also the first in America to despatch trains by telephone, this took place in 1879 only three years after Alexander Graham Bell had invented the instrument!

The East Broad Top unfortunately have no record of how many cars they got from the Boston line, but its certain that coach No. 8 and combines Nos. 14 and 15 formally ran from Boston to the seaside. Coach No. 8 is interesting as it was and still is the only narrow gauge passenger car in the United States to be fitted with roller-bearing axleboxes, these were applied by the E.B.T. when it built a new pair of trucks (bogies) for the car some years ago.

To supplement its elderly wooden cars the E.B.T. had 2 gasoline-engined railcars, both of which it built itself in the barn-like red and white painted shops at Orbisonia. The bigger car of the two, the M.1 (for motor car No. 1), was a long steel affair weighing some 45 tons, it ran on two four-wheeled bogies and was built in 1927 with the aid of Westinghouse Electric and Philadelphia's J.G. Brill Car Company. The M.1 was used for



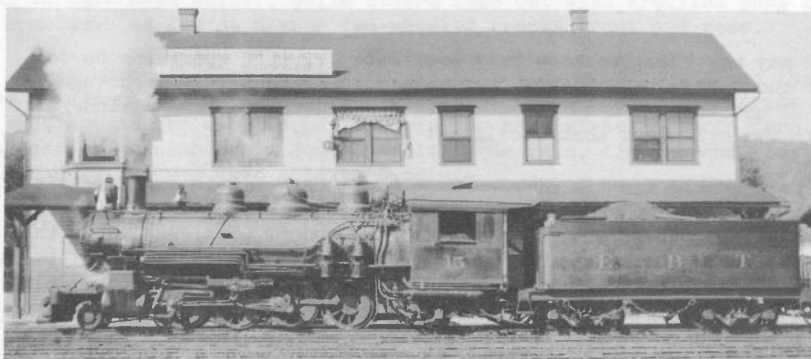
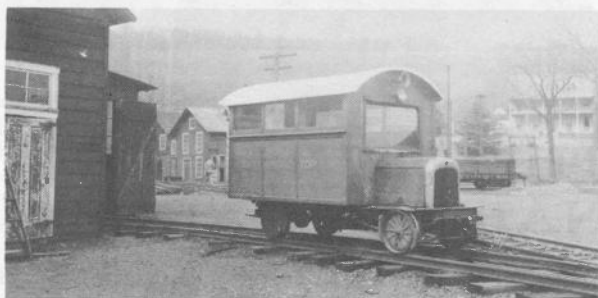
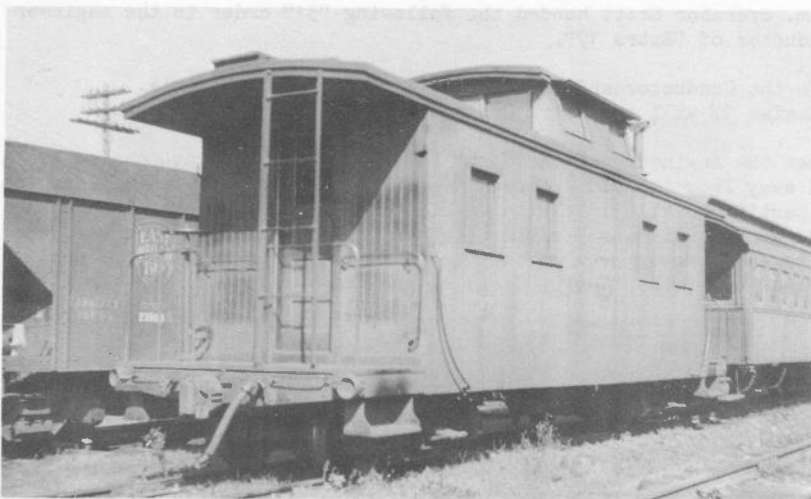


mail and light freight service and took over the passenger service completely when the mines were closed seasonally. The second gas-car the M.3 was much less elaborate, built in the early 1930s it resembled a chicken-hut on four wheels, the engine gearbox and bonnet etc., began life as the "guts" of a 1928 Nash automobile! The whole machine was known to everyone on the line as the "Doodlebug".

Besides the regular scheduled passenger trains the Company also operated special trains for the commuting miners, these ran between Orbisonia (the headquarters of the E.B.T. 11 miles from Mt. Union) and Alvan, but in addition they started and terminated at Mt. Union on days when the mines were working full tilt. To ride these trains the men were issued with special tickets known as form 10/10/43/1000 which were good for 50 trips. About the 1940s the miners trains were made up of 2 coaches and a caboose, later when the specials were cut off the board the miners travelled on the "mixed" trains 7 & 8, usually one coach at the rear of a coal train. On timetable No. 105 dated Monday, 22nd June 1953, train No. 8 is shown as running southwards from Mt. Union to Alvan whilst No. 7 ran northwards in the opposite direction. Mixed train No. 8 was timed to leave Orbisonia at 4 a.m. and was scheduled to stop for passengers and receive train orders at Three Springs at 4.20 a.m., Saltillo 4.30 a.m., Robertsdale 5.30 a.m., Woodvale 5.39 a.m., and to terminate at Alvan at 5.45 a.m. It also stopped at various halts when flagged down by intending passengers. Train No. 7 left Alvan at 2.05 p.m. and made all the same scheduled and necessary request stops as No. 8 arriving at Orbisonia at 3.35 p.m. It is recorded that both trains also stopped unofficially near houses close to the high-iron to pick up or set down the miners who occupied them. When the four regular schedule passenger trains were discontinued in 1953 the mails and light freight were then transported by the E.B.T.'s road truck.

Almost from the word go the East Broad Top was operated profitably by its owners, but in the early 40s the downhill slide began, if slowly at first. By 1953 the amount of coal produced by the Broad Top mines had shrunk to about 1% of the total bituminous coal production of the mines of Pennsylvania, and of the tonnage mined at Alvan and Robertsdale the railroad hauled half and operated far below its capacity. In 1955 mining operations were becoming increasingly difficult, although there was no shortage of coal in Broad Top Field it was just more expensive to get at, partly because of this fact and mainly because of another firm's decision to use oil fuel at its plant, the Company decided to close the mines in the Spring of 1956.

The last train ran on 6th April 1956, it was an extra train running between Orbisonia and Mt. Union and was hauled by "Mikado" No. 17. At



8.05 a.m. operator Scott handed the following "31" order to the engineer and conductor of "Extra 17".

"To the Conductor and Engineer of Engine 17 at Orbisonia.  
Engine 17 will run extra Orbisonia to Mt. Union and return."

When the engineer and the "con" had signed the "flimsy" engine 17 steamed away from the old 2 storey general office and station building and with a parting whistle it clattered off to Mt. Union. On its return No. 17 was bedded down with its 5 sister engines in the 8 stall roundhouse, to await its end. Weeds grew on the once immaculate mainline, coal cars jammed the yards, the "Narrow Gauge of the East" was dead. Or was it?

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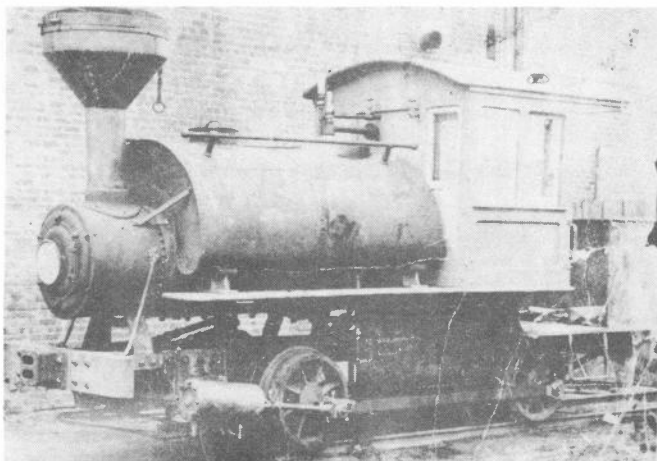
## THE OSCILLATING NARROW GAUGER

By Sydney Moir and H. T. Crittenden (U.S.A.)

You may say "Yes, we know they oscillate ... it's something to do with the short wheelbase!", but just take another look at the photograph and you'll see what we mean. You can't? Look hard at those cylinders ... it is the cylinders that oscillate!

There probably isn't a single example of these little engines left, for the last was built around 1913. Rock-bottom simplicity of boiler and engine was aimed at ... and, as far as the cylinders were concerned, this meant the elimination of any moving valve gear. The valves were built into the trunnions on which the cylinders swung: no woods machinist could alter the settings, short of stripping the machine down and chipping out bigger ports.





They were greedy for water ... what set of cylinders taking boiler steam at full pressure for the full stroke wouldn't be? ... but they were simple (and therefore cheap to build) and reasonably sturdy. And remember, this was not a case of "One off, and God help anyone who suggests such a thing again!" but a standard line of logging to locomotives with Messrs. Dewey Brothers, the builders.

Like most 'standard' locomotives, they came in a variety of sizes and arrangements: most were 0-4-0 saddle tanks (though one tender engine is known to have been built), while others came out with trailing pony trucks, and some went as far as having two-wheeled trucks front and rear.

Dewey being an East Coast firm, it is not surprising to find their sales were confined to the logging companies on that side of America ... the greatest number were to be found in the home state of North Carolina, with decreasing numbers in South Carolina, Georgia, Alabama and Florida ... and only one was ever sold in Virginia.

Narrow gauge? Yes ... three-foot, for most of the timber lines were built to that gauge.

# HORWICH WORKS 18" GAUGE RAILWAY

*Article and Photographs by KEN. HARTLEY*

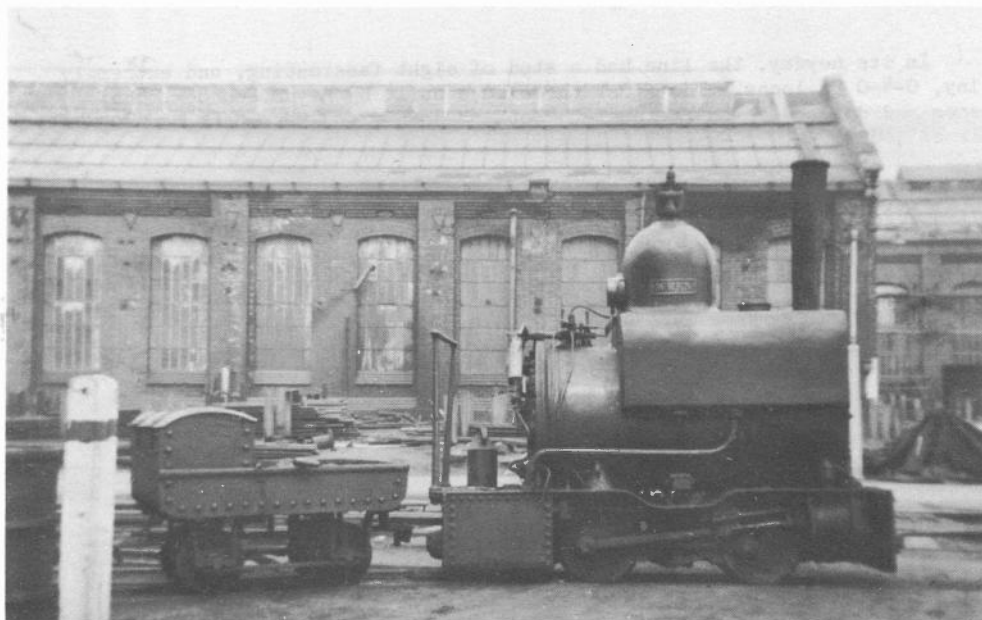
Early in May 1960, I was able - thanks to Team Spirit - to visit the Horwich Works of British Railways. We were very keen to see the narrow gauge "tramway" put down to afford transportation inside the works area.

Originally, something like  $7\frac{1}{2}$  miles of 18" gauge track existed, serving the various shops and extensive yards. Inside the buildings, the track is of course level with the floor, only the flange grooves showing. Outside, it is laid in the normal narrow gauge manner, with the sleepers generally not visible, and the rail length is about 18'0". Curves are quite fantastic - they appear to be usually of about 12'0" radius. Points, almost all of which are simple right and left hand turn-outs, are one-piece steel castings, with pivoted tongues - really solid jobs. An outstanding example is a very neat 3-way turnout giving access to the little 3-road 18" gauge loco shed, which is built on to the S.E. corner of the 1,520 ft. long erecting shop.

This shed has been partitioned off, and part now houses air compressors, I believe. The portion still used for locos could house three of the 0-4-0 ST locos, and their tenders, but alas! only one "Wren" - remained in service, as "spare" engine.

Of recent years, the importance of the 18" gauge line has much diminished, and probably well over half of it is no longer used. The track in use is almost all outside, and is very rough indeed.

The rolling stock consists mainly of a very crude design of 4-wheeled "Tub", built entirely of steel. The axles appear to be clamped in a simple strip framework - there are no springs or axleboxes. Couplings are long plain steel rods, with the ends bent at right angles.



In its heyday, the line had a stud of eight fascinating, and extremely tiny, 0-4-0 ST locos. The first three were built by Beyer Peacock, the names and dates were as follows:- "Dot", "Robin", and "Wren" (B.P. 2823/4/5) all of 1887.

Horwich Works then built "Wasp" and "Fly" in 1891, with "Mouse" and "Midget" in 1899, and finally "Bee" in 1901.

These little locos had launch-type boilers, surmounted by a square saddle tank, on top of which were a long stove-pipe chimney, and a very large dome whereon were mounted the safety valves - and nameplates! A second water tank lay beneath the tiny footplate, which had merely a hand-rail across the rear, by way of protection for the driver.

In "L & Y" days, these engines were painted and lined-out in standard gauge style, even to the "coat of arms" on the tank side.

Coal was carried in a separate small 4-wheeled "tender" which had a massive tool box set across the rear end. The framing and axles were generally similar to those on the "Tubs".

Eventually, the engines were sold or scrapped, until only "Wren" now survives - in not specially smart condition, for the colour is plain black, with red buffer beam.

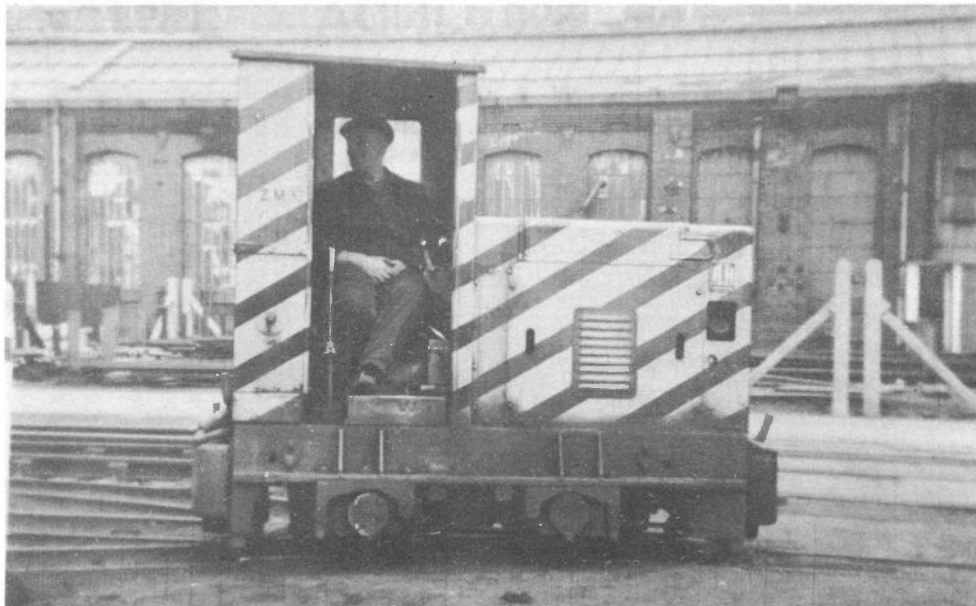
(1966 footnote - the loco is now in Clapham Transport Museum of course, gracing the front view of LNER "Mallard".)

Main dimensions are:- Cyls. 5" x 6" (Stephenson Valve gear); Wheels 16" dia.; Working Press: 200 lbs/sq.inch; Length of frames 7'4"; Extreme width 3'0", wt in W.O. 3.57 tons.

In 1934, a Hudswell Clarke 0-4-0 D. loco, (No. D. 563 of 1930), formerly in use on the Crewe 18" Line, was sent to Horwich, where it laboured for 23 years. This had a 20 h.p. McLaren-Benze diesel engine, and Bostock and Bramley gearbox. Transmission was by jackshaft drive, to the 1'3½" dia. wheels. (Details supplied by Ron Redman). This loco had a "pillar" cab and a loco. type chimney on the engine cover.

In 1957 the "Hudswell" was scrapped, and replaced by a new Ruston Hornsby 0-4-0 D (No. 416214. Type LAT) with a 2-cyl. 20 h.p. diesel engine; electric starting and lighting, and some form of hydraulic/mechanical transmission. This loco has an "all-over" cab, which just manages to accommodate the driver. It is strikingly painted in black and yellow diagonal stripes, with dark green cab front, and is lettered "VM 32".





After an initial period of frustration, when we seemed unlikely to get any "gen" on the 18" system, we spotted this "Ruston" loco, working, and made our way towards it.

To our joy, the driver - an old fellow who had worked at Horwich for 45 years - sent his mate to unlock the doors of the small shed, and he himself came along with the diesel, and towed "Wren" outside, for us to examine and photograph.

It was well worth the price of a drink!

# HUNSLET — No. 589 BLANCHE No. 590 LINDA 1893

## DRAWING INFORMATION

W. A. D. STRICKLAND  
G. HORSMAN

Hunslet No. 590 "LINDA" which left the Works on the 29th June 1893, one week after sister engine No. 589 "BLANCHE" was the last of three similar locomotives built to the order of Lord Penrhyn for the Penrhyn Railway in North Wales.

The first locomotive of the class No. 283 "CHARLES" was despatched to Penrhyn on the 27th May 1882. It was an 0-4-0 saddle tank of 1'10 $\frac{1}{4}$ " gauge with outside cylinders 10" diameter x 12" stroke. The steep inclination of the cylinders at 1 in 6 down to the driving axle gave the locomotive an unusual appearance, but they were positioned to enable the crossheads to clear the leading crankpins and so permit the connecting rods to be placed in between the coupling rods and the flycranks.

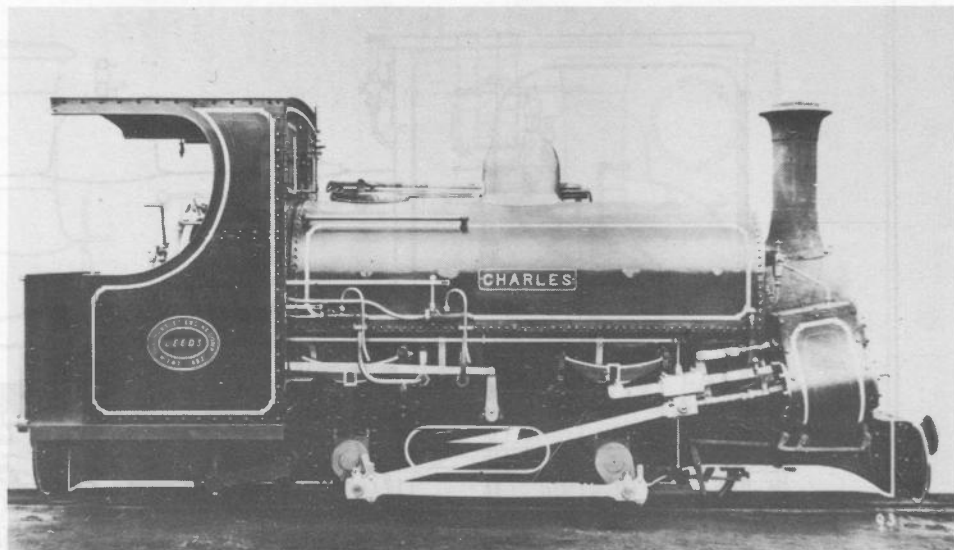
By adopting this form of construction the transverse centres of the cylinders could be kept as close as possible and the width of the engine reduced to a minimum. The steam chests were above the cylinders and the slide valves were operated from Stephenson's link motion between the frames through suspended valve connecting rods, rocking levers and a rocking shaft.

Before design work was commenced on No. 283 Lord Penrhyn wrote to Hunslet requesting that certain modifications should be made to the original proposals put forward in the specification. An extract from his letter reads as follows:

"We shall never-the-less require the following alterations: axle boxes to be of brass as per your letter, and not gunmetal as stated in the specification. Two Injectors to be No. 5 and not No. 4 as stated in the specification. The dome (cover) to be of brass. The safety valve and whistle must be mounted outside the shelter cover (cab). If you will examine the tank engines of the L. & N. W. Ry, you will find the safety valve is fixed on top of the tank, or rather I suppose, through it, and outside the shelter cover. Please arrange it so. The width of the platform (footplate) we think rather narrow for the driver, if you can manage 6 inches more it would be better. The shelter cover you have not got quite right, it is bigger than ours, it should be more this shape (enclosing sketch). Please look at the L. & N.W. engines.

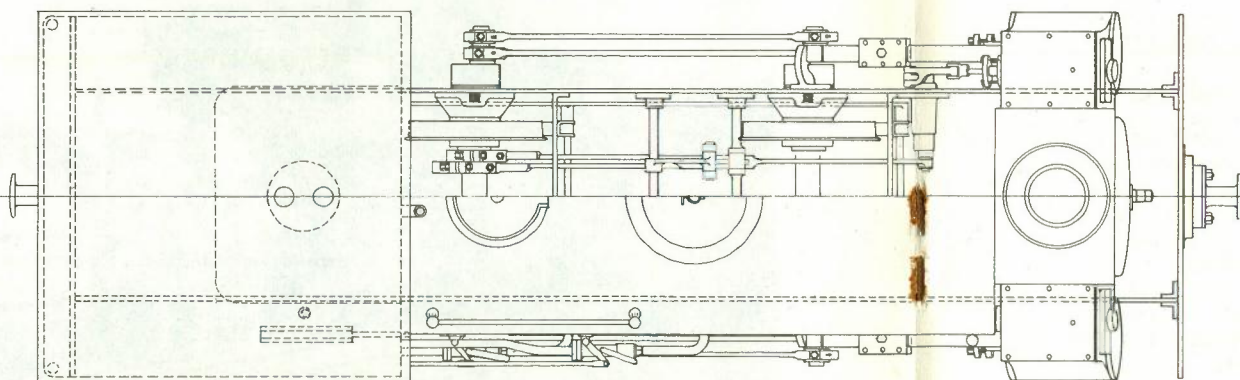
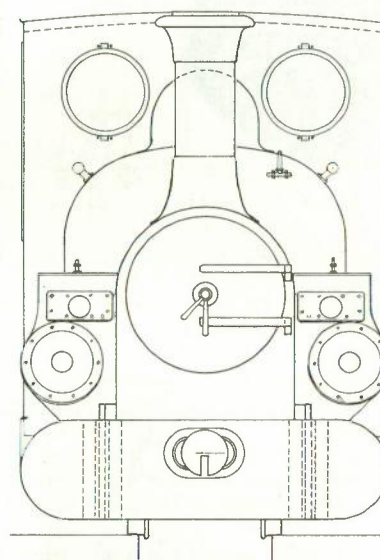
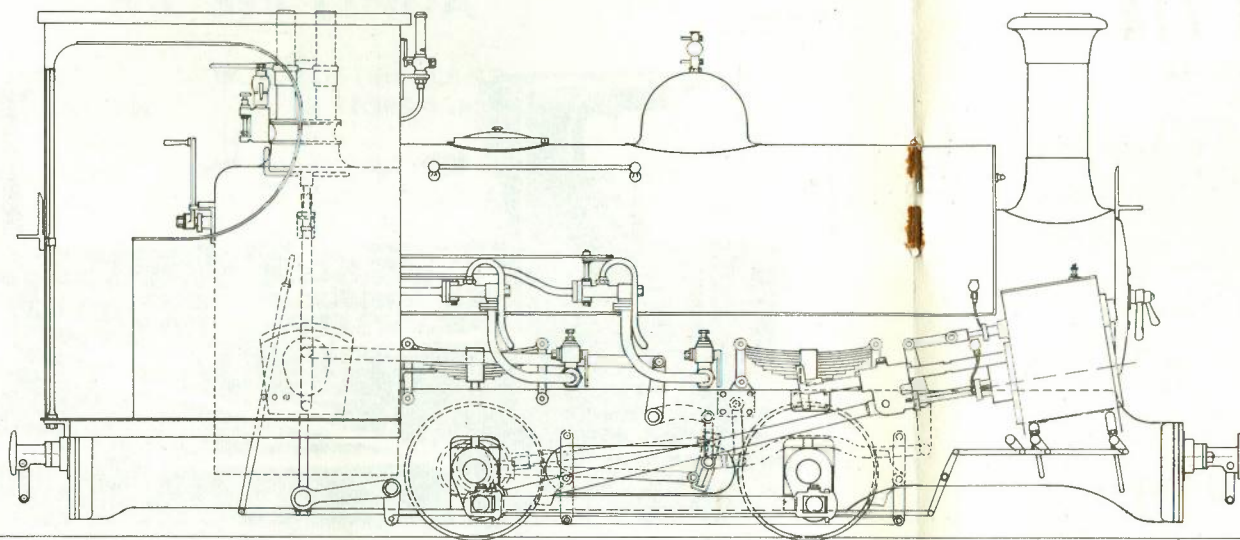
I presume you have taken every care in balancing the engine. I only mention this because one of ours was not rightly balanced and the front wheels would not bite properly and were obliged to add weight in front to effect this."

Cont'd on back cover



TOP - Official photograph. Courtesy of The Hunslet Engine Co.

BOTTOM - In service 2.7.56 - Mike Swift



**HUNSLET 0-4-0ST**  
**WORKS N° 589 Date 1893**  
**SCALE 16<sup>m</sup>/m=1 Ft**

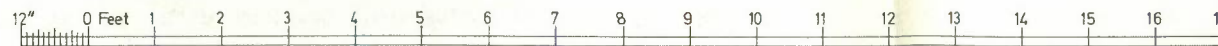
Gauge 1' 10<sup>3</sup>/<sub>4</sub>"  
 Cyls 10<sup>1</sup>/<sub>2</sub>" bore 12" stroke  
 Wheels 2' 1"  
 Wheelbase 5' 0"  
 Tank 270 galls  
 Fuel 12 cu. ft

Heating surface; 66 tubes 1<sup>1</sup>/<sub>2</sub>" dia = 278 sq ft

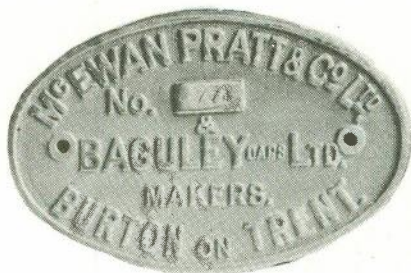
Firebox	29 "
Total	307 "
Grate area	5.2 sq ft

Hunslet N° 589 BLANCHE  
 " " 590 LINDA  
 Lord Penrhyn's Slate Quarries, Bethesda.

*W. D. Dickinson*  
*Feb 1966*







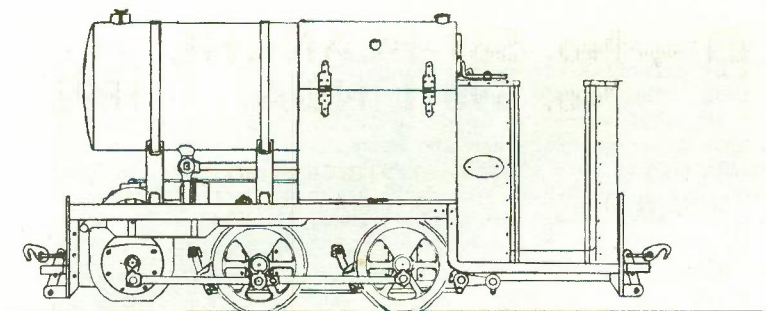
# NUMBER 774

By RODNEY WEAVER

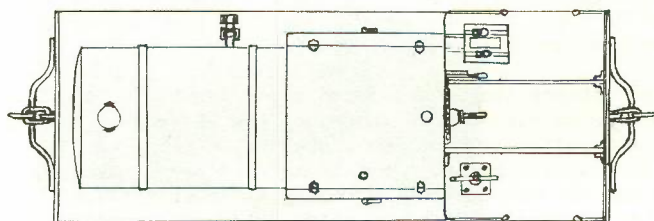
"It's not a locomotive, it's a signal box." - Rev. E.R. Boston.

McEwan Pratt/Baguley 20 h.p. petrol locomotive No. 774 is an example of a high class internal combustion locomotive as produced in the first quarter of this century. The internal combustion engine was first used to power an industrial locomotive seventy years ago, and it is a matter for regret that so little has survived from the early period; cheap methods of manufacture were then still in the future and each design was carefully worked out to produce the best machine possible moreover engines at this time being much less predictable this treatment was necessary to get the best out of the chosen prime mover.

The Great War brought about the construction of numerous light narrow-gauge systems both at home and abroad, which in turn led to a marked increase in the use of i.c. locomotives. In this country the Home-Grown Timber Supply Department operated a number of 60 cm. estate railways, and for use on these purchased several McEwan Pratt/Baguley petrol locomotives. Of these, Nos. 646-50 were of 10 h.p. and Nos. 774-9 of 20 h.p. curiously the first of each batch is now preserved. No. 774 was built to Order M 28 and turned out on 5/3/19, going straight to the Machynlleth estate. It did not stay here long, being brought back by the makers in 1923 and re-conditioned; it was slightly modified at the same time. The machine was exhibited at the Motor Transport Show in November 1923 and at the British Empire Exhibition at Wembley in 1924, after which it was sold to J.C. Oliver, a Light Railway dealer in Leeds, from whom it passed to the Oakeley Slate Quarries in 1926. Here it worked until just before the Second World War; the arrival of more modern diesels rather reduced its popularity and following a minor fire it was laid aside. Not long after this the level was closed; No. 774 was stored in the cutting shed which was then walled up to preserve the contents until such time as they should be required again - but the closure has proved permanent and in 1965 the shed stood unaltered save for the thick layer of dust which mellowed the interior. Rubbing it away revealed the elaborate lining applied to No. 774 before it took its place in the Palace of Engineering almost half a century earlier.



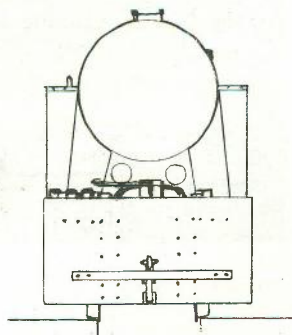
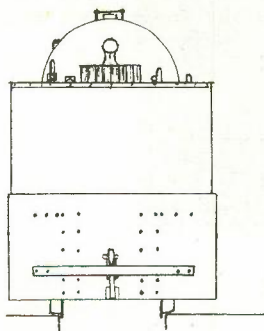
0 1 2 3 4 5 FEET



McEWAN PRATT 20. H.P. PETROL LOCOMOTIVE

BAGULEY (CARS) LTD. No 774/1919.

GAUGE 60. CM.

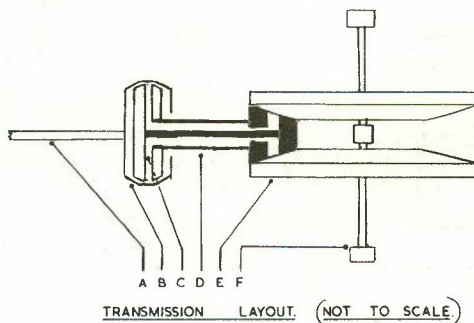


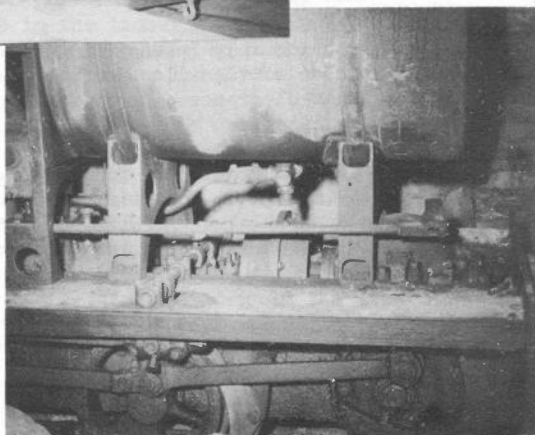
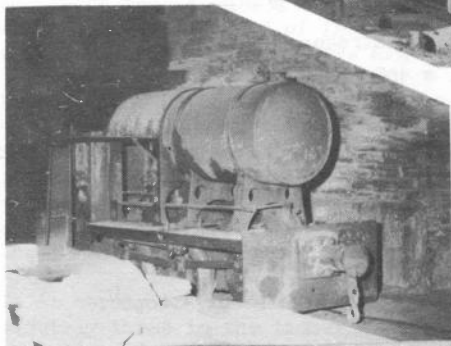
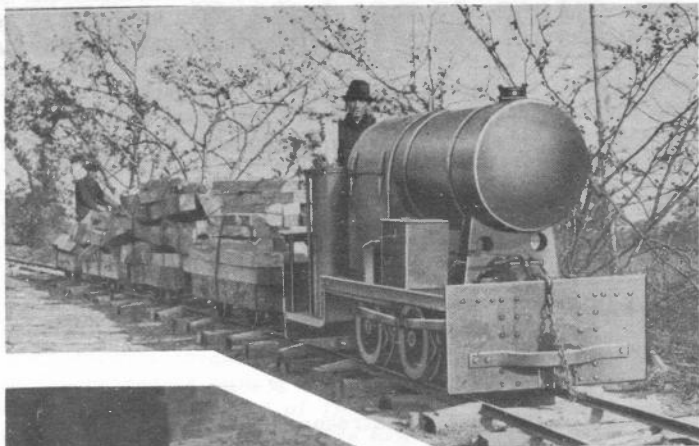
The constructional details of i.c. locomotives, especially those of early date, will be unfamiliar to many readers, so a technical description is not out of place. The "steam" outline of this design is unfortunate, but given the technical features it is quite logical. The frames and running gear follow usual practice and are relatively heavy; all Baguley products were built to the same standards, so it is no surprise to find a substantial frame from a O-4-O S.T. (No. 621) which had been laid down but never finished. The leading axle has coil springs, the trailing one leaf springs; this allowed the engine to be mounted as low as possible over the latter and also counteracted pitching.

The driving position is at the rear, no cab was ever fitted in regular service but a canopy was provided for exhibition purposes. The engine overhangs the platform and is fitted with a short starting handle. On the right hand side is the handbrake pillar and on the left the two gear levers which resemble steam locomotive reversing levers (hence quote). The inner selects forward and reverse; the outer high and low gear by controlling the Duplex clutch. On the bulkhead are the throttle (adjacent to the levers), ignition switch and oil pressure gauge (the latter is missing), prior to 1923 there was an array of sight-feed glasses instead as the engine did not originally have pressure lubrication.

The engine, mounted between the frames immediately ahead of the driving position, is a massive piece of engineering: the side-valve cylinders are cast in pairs and bolted to a common crankcase; a single Zenith carburettor feeds all four cylinders and ignition is by a Simms magneto, this last is placed behind the carburettor. Cooling water is carried in a 130 gallon tank mounted ahead of the engine over the transmission and petrol in a 20 gallon tank above the engine. One point of interest is that the crankshaft has five bearings.

The most intriguing feature of this machine is the compact transmission, which is best explained by reference to the diagram. Shaft A is driven by a splined coupling in the flywheel; the shaft can move axially and is controlled by the Duplex clutch lever already mentioned. The linkage incorporates a spring cylinder to apply pressure to the clutch, which explains the notches in the quadrant on the footplate. Shaft A carries the outer case of B of the Duplex clutch; movement of the whole shaft engages





TOP - A loco actually in W.D. Forestry service (Brian Webb)

CENTRE - 774 to-day (Rodney Weaver)

LOWER - Front end detail - duplex clutch and gearbox and unusual coupling rods.



one or other of the cone clutches C which drive the co-axial shafts D. Each of these shafts carries at its inner end a pinion which meshes with two bevel wheels E; these bevels have two rows of teeth, thereby providing two gear ratios in conjunction with the Duplex clutch. A dog clutch between the two bevels E selects the direction of travel; the jackshaft mounted below the output shaft is driven through reduction gears F at each end. The driven gear in this case is a gear-ring on the periphery of the fly-crank. The rod drive is a little unusual: the coupling rod is jointed to an extension of the drive rod instead of sharing the crankpin as in normal practice. This is also a feature of the Guinness locomotives designed by Geohegan; apart from reducing width it does tend to distribute the driving torque more evenly. Ball bearings are used throughout the transmission.

Salient features of Nos. 774-9:-

Length: 10'8"; Width: 4'0"; Height: 5'9".

Driving wheels 1'8" dia., Wheelbase 2'9".

Engine: 4 cyl., 4" bore, 5" stroke; 4120 cc.

Power output: 28 b.h.p. @ 1080 r.p.m.

Gear ratios: 1.8:1; 3.6:1.

Final drive ratio: 4.43:1.

Nominal speeds (800 r.p.m.) 3 & 6 m.p.h.

Performance @ 1080 r.p.m.: 2,100 lb. @ 4 mph; 1050 lb. & 8 mph.

Weight in W.O.: Makers quote 6t. 10cwt.

Also given by Drewry "about 4 tons".

The very narrow design is possibly intentional, in conjunction with the low backsheet fitted to some of these locomotives they could have worked on lines with very tight clearances, as it would have been possible to leave the footplate at the rear.

In conclusion I would like to mention that much original Baguley material is now held by the Birmingham Locomotive Club, by whom the original drawings were made available; the drawing depicts 774 as built. I have received further information (and encouragement) from Roy Etherington, Brian Webb and Richard Morris.

# STEEL THROUGH THE TIMBER

By Sydney Moir

THE SOUTH WESTERN RAILWAY WAS A NARROW-GAUGE LINE  
RUNNING BETWEEN THE PORT OF KNYSNA AND A TERMINUS  
DEEP IN THE HEART OF THE FOREST.

Knysna lies on the southern coast of Africa, and from this village one of the very few privately-owned common-carrier railways in the Cape of Good Hope started inland. The quays, on which the most southerly of the two-foot-gauge tracks ran, lie a couple of miles up the lagoon, entry to which is gained through a relatively narrow passage between thousand-foot-high cliffs. Landward of the cliffs, the ground drops rapidly, with the town lying only six feet above high-water mark.

Beyond the town, a few miles further inland, the forest commences. Famous as a producer of stinkwood - which is relatively scarce - it is a Government owned tract, various firms having interests in the cutting, handling and finishing of timber from it. In the early days of the century, before the building of roads along which motorcars brought tourists and visitors, the prosperity of the village of Knysna was intimately tied up with the forest and its logs.

It is hardly to be wondered, then, that a group of Knysna merchants, predominately those in the timber trade, banded together to float the South Western Railway Company, proposing to build a narrow-gauge railway for the purpose of bringing timber from the forest to the mills at the port.

The railway was authorised by the Cape Parliament under Act No. 16 of 1904: one of the conditions of assent was that the line had to be constructed to the standards laid down by the Cape Government Railways for their own two-foot gauge branches - thus calling for curves of not less than  $2\frac{1}{2}$  chains, grades of 1 in 38 maximum, 35 lb. rails and 2,112 sleepers to the mile. The Bill also stipulated that the C.G.R. had the right to purchase the railway at any time, after giving twelve months notice of their intention to do so, and paying the cost price: further, should the line at any time be linked up with the two-foot gauge railway then under construction between Port Elizabeth and Avontuur, the C.G.R. was to have the right to operate trains over the Company's metals.

The latter paragraph was inserted in view of the possibility of running a line to the north, touching Avontuur (which would have put the ports of Knysna and Port Elizabeth into rail as well as sea communication) and continuing onward to Uniondale and Uniondale Road, where it would have tied in

with the 3'6" gauge from Cape Town to the goldfields of the Transvaal. The C.G.R. survey for this extension was made, but the line itself was never built.

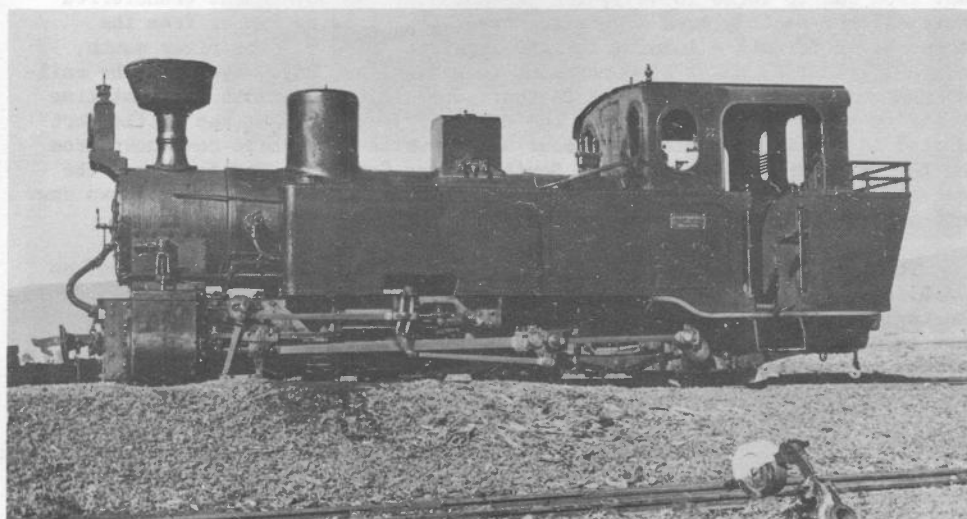
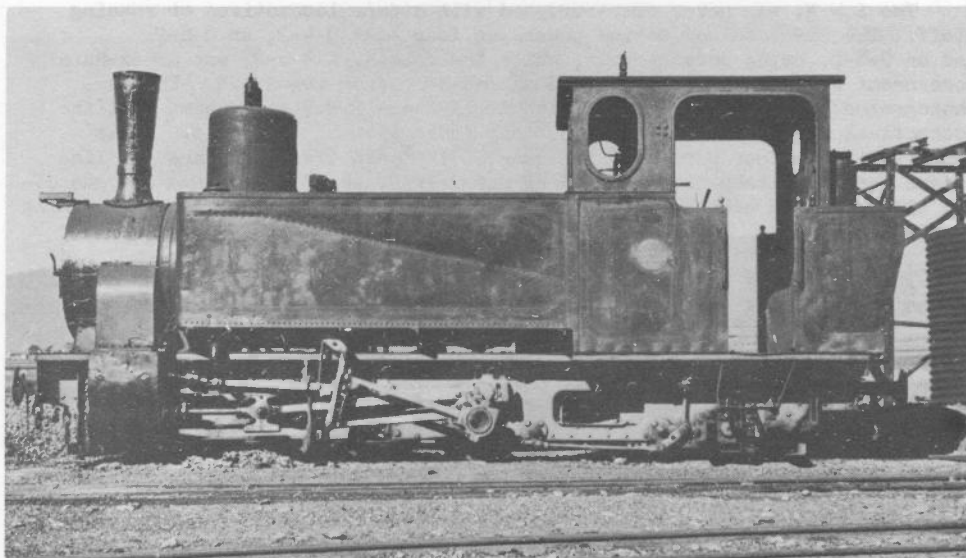
When the South Western Railway came into being, it was partly through Government aid, for the Company was granted a subsidy of £800 per mile - the total cost per mile being limited to £3,200 by a further clause in the Bill. The overall cost of the line worked out to £49,898; originally the cost had been estimated at £71,609, but a new route was chosen before construction commenced. The completed line was a little over twenty miles in length - with the first nine miles taken through open, undulating country, and the remainder within the forest itself. (See MAP on back cover).

Trains were always made up with a bogie wagon placed ahead of the locomotive, for once the forest had been entered it was impossible to see round the next curve: a tree across the track was one of the accepted hazards and re-railing a truck was far easier than dealing with a locomotive that was on the ground. This was one of the drawbacks inherent in operating a railway through an area also housing a herd of elephants. The elephants themselves were seldom seen, but their habit of hauling down a tree in order to feed on the leaves at the top was a nuisance. There is no truth in the story, once given publicity in print, that the line was operated by elephant power when first opened, the steam engines being an after-thought, the African elephant cannot be tamed as can his Indian cousin.

As the South Western Railway was to be a railway operating for public traffic, the Act stipulated that three trains a week, to be run from one end of the line to the other in both directions, should include passenger vehicles. In actual fact, the passenger traffic never amounted to very much, and only one vehicle was ever provided. Since the Company listed the fares as being 3d. per mile for Third Class (which in South Africa would be for natives) it is probable that such third-class passengers as did ask for transport were accommodated in open wagons along with the goods.

One peculiarity of the South Western was the provision of tickets differing widely from the generally used paste-board slips. The South Western tickets were paper tickets, bound into a book, and each ticket had to be filled in, long-hand, by the issuing agent or stationmaster, giving the name of the station, the amount of the fare and the name of the issuer.

Three years in the building, the railway opened with an assurance of traffic, for the Cape Government Railways had contracted for 120,000 sleepers per annum (thus giving the line 7,500 tons of traffic annually, at 4d. per ton/mile, for a start) this being over and above other trade from the forest. Sleepers from the mills were taken by tug and lighter to Mossel Bay, where the C.G.R. ran a sleeper creosoting plant: other timber products were distributed up and down the coast by the coasters that called regularly at Knysna - at this time, the village was not connected by rail to the 3'6" gauge system of the C.G.R.



South Western Railway loco's.  
Top 0-6-2      Lower 0-8-0



The S.W.R. was never over-burdened with either locomotives or running staff. The sum total of motive power was four - an O-4-2, an O-6-2 and an O-8-0, being German-built, while the fourth, a 4-6-2, was an ex-Natal Government Railways loco, purchased second-hand from the S.A.R. Though photographs exist showing wagons with the letters S.W.R., it seems that the locomotives ran their course without any indication of ownership. It is doubtful if all four were ever in steam at the same time, for when the line opened the establishment consisted of one driver, one fireman, and one guard - and all published accounts give only the names of two drivers, as ever working on the line.

There is every possibility that the line was first worked by the O-6-2: photos taken during the late 'twenties show the 4-6-2 at the head of the train, while the O-8-0 was in use in the 'forties, and the little O-4-2 was photographed at work on the quay on the closing day.

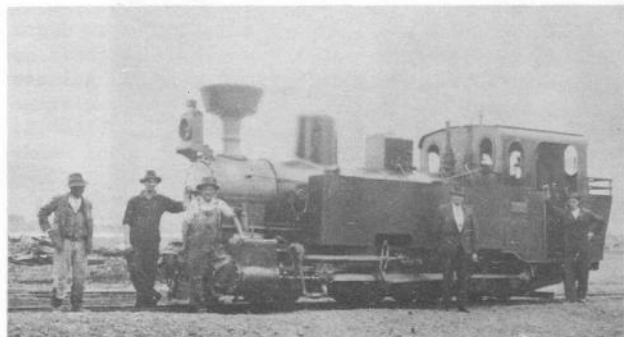
The line continued in a fairly solvent state through the earlier years: in 1911 they paid interest on debentures after allowing for depreciation of permanent way and rolling stock. This latter item took a leap upward in 1916, for disastrous floods not only forced the Company into the expense involved in track re-construction, but brought about a drop in revenue.

By this time the South African Railways held the controlling interest in the Company, having bought £20,000 worth of 5% Debenture Stock in 1913. Things went from bad to worse in 1919, for in that year the Government transferred their sleeper-factory from Knysna to Mossel Bay, drawing timber from the Storms River forests - loading it into lighters lying off the river mouth, and towing them by means of Government tugs to Mossel Bay. Even so, the railway managed to pay a dividend of 2% that year: this was almost the last time it was to pay a dividend. During the calendar year of 1922, the little port handled 11,799 tons of timber, almost all of which would have come down from the forests over the rails of the South Western Company. The fact that the 'general cargo' shipped during the period only amounted to 362 tons shows how intimately the life of Knysna was tied to the timber trade.

Throughout the 'thirties, nothing but loss was to be recorded - and the S.A.R. despite their controlling interest, refused to assume ownership. By the beginning of the 'forties it was obvious the end was in sight, an end that came in April 1949, when the little line - after forty-two years of service to the port of Knysna and the forest to the north of it - was finally closed down.

\* \* \* \* \*

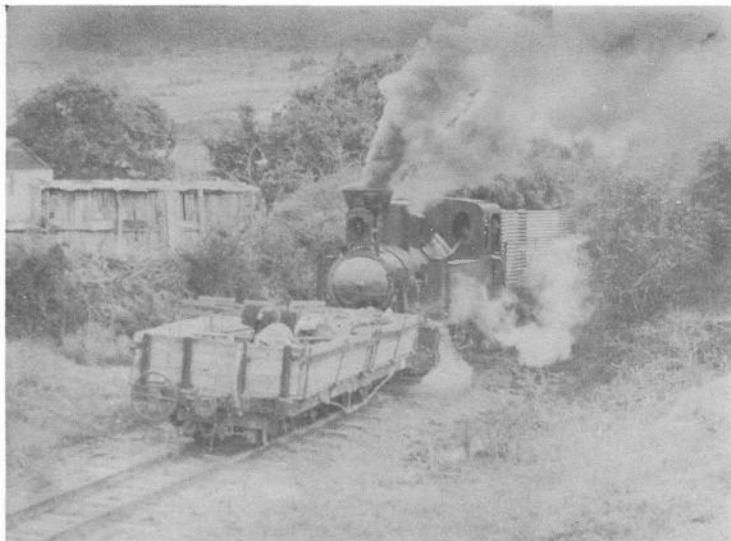
The South African Railway was formed in 1910 by the amalgamation of the Cape Government Railways, the Natal Government Railways and the Central South African Railways (formed by the merging of the railways of the Transvaal and the Orange Free State) were brought together as one entity.



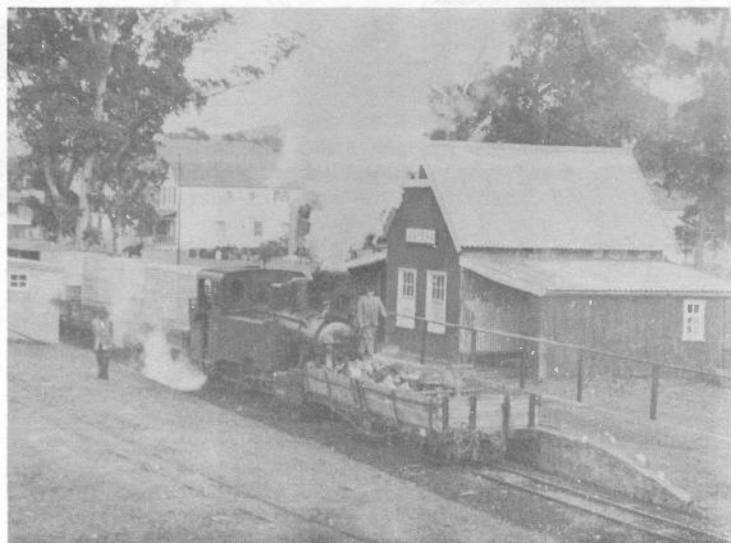
TOP - Knysna Station showing the O-4-2 and O-8-0.

CENTRE - The O-4-2 Shunter.

LOWER - O-8-0, no record of date or names of staff surrounding her.



The beginning of the forest, and the passengers have left their 'observation car' and retired to the safety of the brake van. The locomotive is the German O-8-OT.



Knysna Station, on the South Western Railway. It might possibly be correct to say it was 'the' station, for the terminus at Deepwells and the other stations were merely timber loading points. Though the railway has gone, the building is still in use.

# THE STUBAITALBAHN

BY R. S. MOORE

In 1964 I enjoyed a holiday in Austria, during the course of which I had a short trip on the metre gauge electric railway which runs from Innsbruck up into the Stubai Valley to the South.

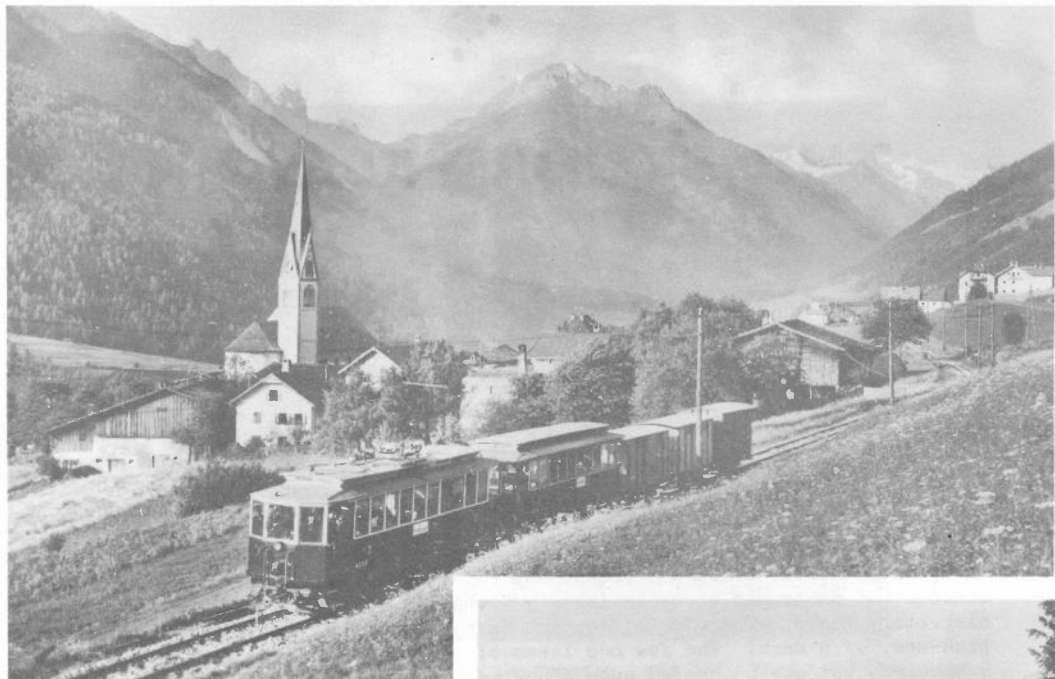
The guide book tells us that the line was built in 1904 and has a maximum gradient of 1 in 22. However, it is not the gradients which impressed me so much as the curves. Some of them have to be seen to be believed.

Traffic in passengers appears quite heavy, no doubt because the main local bus company is railway owned and the buses and trains run in conjunction.

The rolling stock is of the tramway variety - with transverse seats long ago painted G.W.R. brown and cream. With the exception of the bogie motorised coaches the passenger stock is largely 4 wheeled with end platforms and clerestory roofs. The electrification is by overhead cable using pantograph pick-ups, of a sort. The few odd items of goods stock seen were grey, mostly 4 wheeled, but one 6 wheeled open truck was seen. Centre couplings are standard.

The line starts about 1 mile south of the main Innsbruck station on the outskirts of the city. The Westbahnhof is but a  $\frac{1}{4}$  mile away, but only the local trains stop there. The layout here was not seen close up but appeared to be very similar to that at Fulpmes (see plan). At this point the line is 1,932' above sea level. It then rises sharply in a series of reverse curves closely following, and burrowing under in a short tunnel, the road to the Brenner Pass. A little further on it recrosses the road on the level, no gates, runs alongside it for a further  $\frac{1}{4}$  mile, before branching off to the south-west, to reach the village of Natters ( $2\frac{3}{4}$  mile, 2,510'). Doubling back on itself four times the line reaches Mutters ( $3\frac{3}{4}$  mile, 2,723') the main passing station, about  $\frac{1}{4}$  mile from Natters as the crow flies! Ascending again around three sides of the village, we reach Nockhofweg-Muttereralmbahn (2,881'). This 'halt' serves the chairlift to the Mutterer Alm (5,279'), whose lower terminus is about  $\frac{1}{4}$  mile away up the hill.

The character of the line now changes somewhat. To date it has been of rather 'open' nature but now begins a stretch of several miles of short, sharp curves through larch woods and meadows, interspersed with a couple of viaducts and several halts. Leaving Nockhofweg the line runs into a short curved tunnel to emerge into a fine curved four span viaduct of concrete piers and girder superstructure. A little further on we cross another viaduct, this time of steel construction throughout. Through the trees we obtain glimpses of the superb mountains around and of the magnificent new Europa Bridge which spans the Sill Valley and carries the new road over the Brenner Pass. At 10 miles, 3,287' Telfes is reached. This is the highest point on the line and from

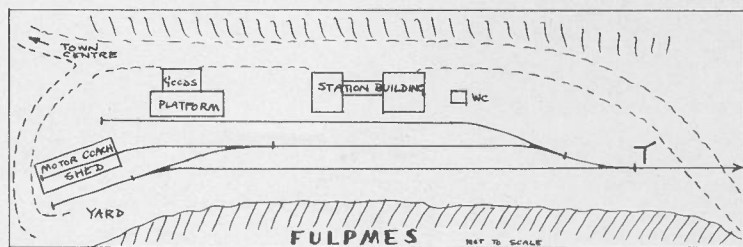




here we descend on an amazing double hairpin to Fulpmes, the terminus (11 miles, 3,014'). This little station is on the outskirts of the town, but still only 5 minutes from the centre.

The layout at Fulpmes is odd in that the loop is not on the platform road (no actual raised platform of course!) The reason for this soon became evident, however, for the method of running round is not conventional. Having deposited the passengers, the motorcoach pushes the train back up the hill and uncouples. It then runs forward onto the central road whilst the guard holds the cars on their brakes, gently letting them down onto the platform road after the motorcoach is clear. This procedure works very well indeed as the gradient is quite steep immediately beyond the station throat. It is quite easy to drop off a car this way if necessary, as we saw, by running the cars required into the platform road and leaving the unwanted car on the hill to then run down into the third and unoccupied line and out of the way.

Unfortunately the circumstances prevailing at my visit made it impossible to look deeper into this fascinating line. May it continue for many years yet so that perhaps you too may have a chance to visit it.



#### OTHER NOTES ON RAILWAYS IN THE AREA

##### Zillertalbahn

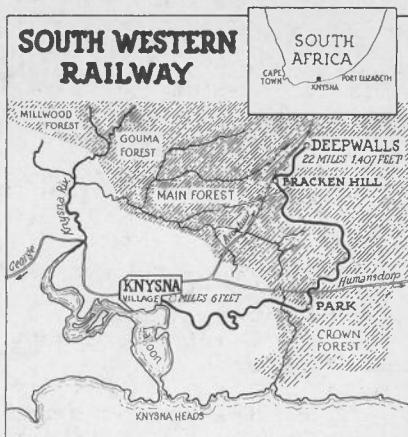
760 m.m. gauge Jenbach - Mayrhofen, apparently still steam worked.

##### Pinzgauer Railway

760 m.m. gauge. Zell-am-See to Krimml. A diesel hauled passenger train was seen at Zell-am-See but a steam engine was fussing around in the station with a few goods wagons.

##### Salzkammergutlokalbahn (closed in 1957)

In the St. Gilgen area the remains of this line are fast disappearing. A new road around the village has destroyed the railway foundations for several miles. The bridge in the village has been removed and houses now stand where trains once ran. The station, now unrecognisable, is used by the buses. The course of the line from St. Gilgen-Strobl is easily followed by the lakeside, but I imagine this will soon largely disappear when road widening takes place. Odd postcards on sale in the village still show the railway but one could be forgiven for not realising that it had ever existed.



Hunslets 589/590 cont'd.....

As built No. 283 was provided with two H.E. Co., No. 6 Injectors, two 2" Ramsbottom safety valves on top of the firebox with a funnel passing up through the cab roof to carry away escaping steam, and a harmonic whistle attached to the outside of the cab weatherscreen. The weatherscreen was at the front of the cab only and was fitted with square spectacle glasses, the cab back being completely open. A polished brass cover was fitted over the dome which contained a poppet valve type of regulator.

Sanding was arranged for the front of the leading wheels only, the sandbox being located between the frames in front of the axle. Under the smokebox was a tapering chute, open at the bottom, down which smokebox ashes were discharged onto the track. A handbrake only was fitted to the engine this being operated by a handle and screw carried from a bracket on the right hand side of the outer firebox wrapper plate.

When No. 589 "BLANCHE" and No. 590 "LINDA" were built 11 years later some modifications were made to the design so they were not an exact repeat of No. 283. The cylinders were enlarged to 10 $\frac{1}{2}$ " diameter and the boiler was redesigned to provide slightly more grate area, 5.2 sq.ft. as against 4.5 on "CHARLES". At the trailing end the frames were lengthened 3" and the cab was fitted with a rear weatherscreen. The top half of the screen was held in position by bolts so that it could be removed easily during summer weather. Circular spectacles were fitted in the weatherscreens.

Other departures from the original design included a conventional slide valve regulator in the dome with a lubricator on top of the dome. The engines were not provided with sandgear.

Weight in working order

Empty

589/590	12 tons 6 cwt.
283	12 tons 5 cwt.

10 tons 10 cwt.
10 tons 3 cwt.