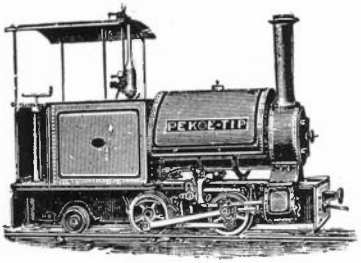

THE NARROW GAUGE

No. 36

THE NARROW GAUGE

(Official Magazine of the Narrow Gauge Railway Society)

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Middx.

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Continued on next page .....

EDITORIAL

Over recent months several members have responded to the appeal in the last issue for more magazine material and if this position continues more frequent issues of the magazine should be forthcoming.

It must be emphasised yet again, however, that if the Society is to have a regular magazine a steady supply of articles is necessary.

This will be the last issue of The Narrow Gauge that I shall be editing for the Society. My grateful thanks are due to many members for their support and encouragement. Please continue to support my successor, whoever he may be.

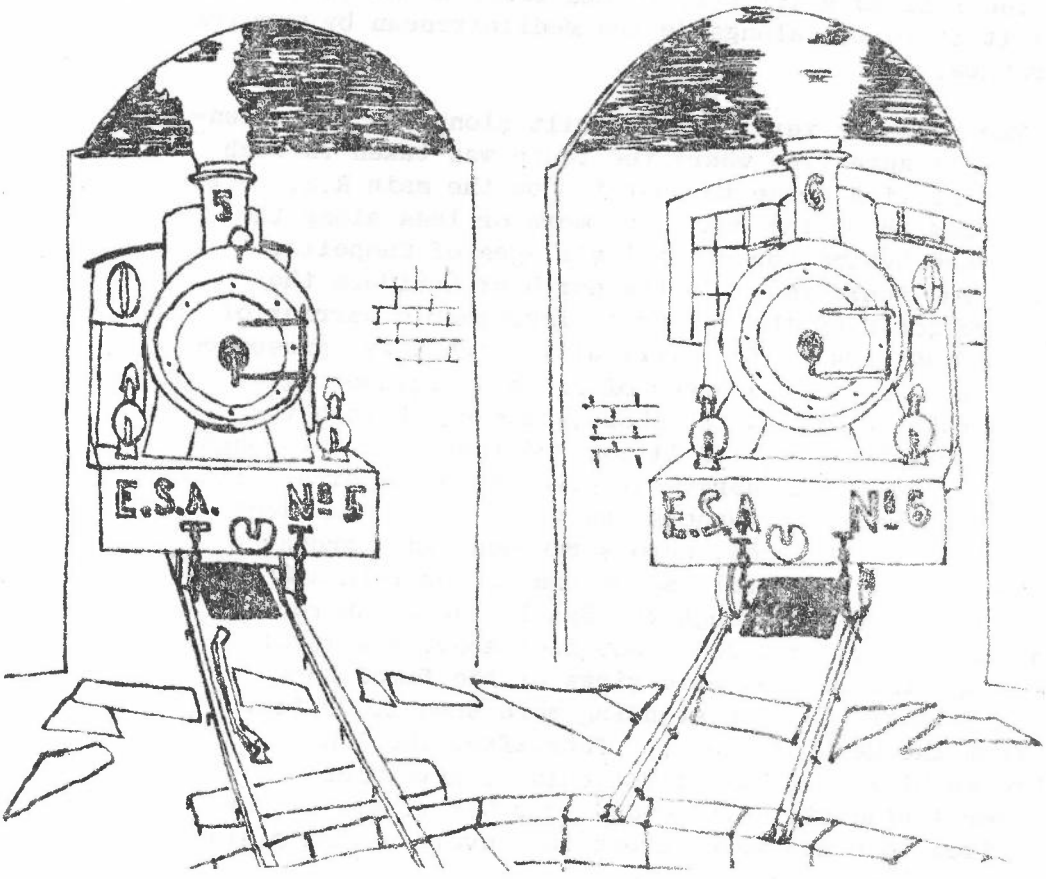
Illustrations, continued

Page 16: Top. NEPTUNE on train by boating lake in 1931. Photograph and block: Hudswell Clarke & Co. Ltd. Bottom: Route map of the line. Block: G.A. Pindar & Son Ltd.

Inside Back Cover: Train in Beach Station with locomotive NEPTUNE. Photograph: Scarborough Corporation. Block: G. A. Pindar & Son Ltd.

We are very grateful to all those who have helped to produce this magazine, especially to those who have let us use their photographs or blocks.

THE E.S.A. - THE LINE WHICH FOUGHT BACK - by Ian D.O. Frew.



The E.S.A., or Cia de los Ferrocarriles Estrategicos y Secundarios de Alicante to give it its full title, is a typical minor Spanish metre railway. The line was built by the local authorities in order to open up the then desolate Costa Blanca, and the opening took place just 50 years ago in 1913.

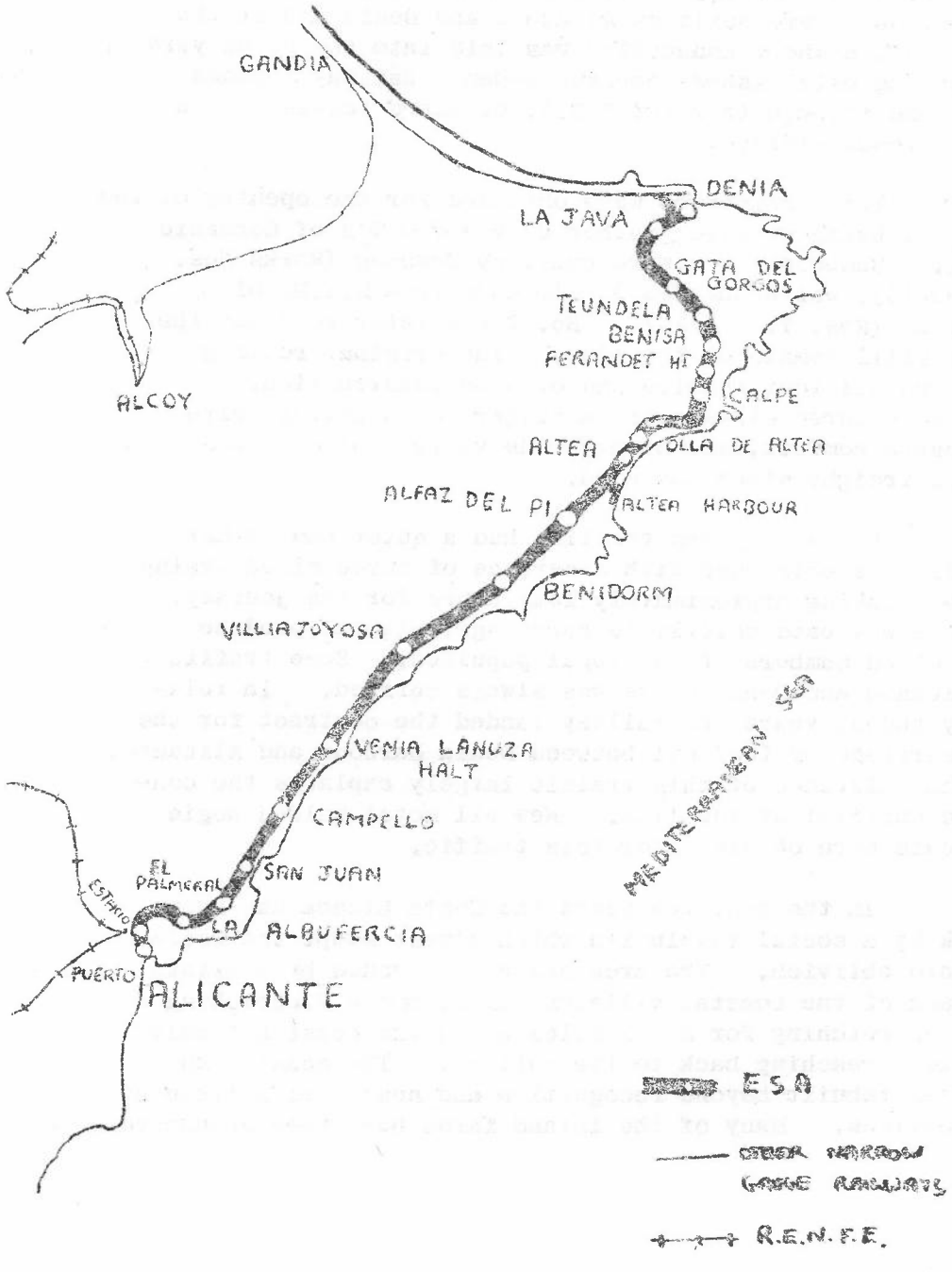
The 58 mile long railway links the provincial capital of Alicante with the port and industrial town of Denia, and

since the reason for building the line was to open up the countryside the line follows a slightly inland route although for much of the way it is forced alongside the Mediterranean by massive mountain ranges.

The southern terminal was built alongside the extensive port in Alicante from where the route was taken through the town to a station close to what is now the main R.E.N.F.E. terminal. From there the route ran more or less along the coast but passed behind the coastal villages of Campello, Villisjoyosa and Benidorm. To the north of Benidorm the engineers were faced by the virtually impregnable barrier of the Mascaret Mountains. The difficulty which they presented was overcome by a fantastic piece of railway engineering. The line was taken close to the shore, passing through the large and important village of Altea, and then passed through the mountain range at its narrowest point by means of a series of tunnels. Between the tunnels the track was taken along narrow ledges on cliff faces, across ravines, and through a fantastic and almost fairytale selection of mountain and coastal scenery. Once through the final tunnel the route turned inland running some 200 - 300 feet above sea level and giving magnificent panoramic views of the famed Rock of Calpe, a volcanic outcrop standing more than 1,000 feet sheer up from the Mediterranean. Thereafter the line passed through hilly but less spectacular countryside though several viaducts were needed to cross rivers. The final few miles to Denia were across the level coastal plain.

In all, 17 stations and two halts were provided along the line. Most of the stations had a small goods' yard comprising two or three sidings with a large goods' shed, and quite lavish passenger facilities considering the remote situations of many of the stations. At most there was a station master's house, waiting room, booking office, restaurant or bar, post office, and surprisingly substantial toilets, all perfectly whitewashed. Altea had a larger goods yard, a small locomotive shed, and a branch to its

THE E.S.A.


GANDIA
DENIA
LA JAVA
GATA DEL GORGOS
TEULDELA
BENISA
FERANDET HE
CALPE
ALCOY
ALTEA
OLLA DE ALTEA
ALFAZ DEL PI
ALTEA HARBOUR
BENIDORM
VILLIA JOYOSA
VENIA LANUZA HALT
CAMPELLO
MEDITERRANEAN SEA
EL PALMERAL
SAN JUAN
ESTANCO
LA ALBUFERCIA
PUERTO
ALICANTE
E S A
R.E.N.F.E.

little fishing harvour. The principal loccmotive sheds, both round-houses, were built at Alicante and Denia and at the latter town a short connection was laid into the goods yard of the long established Carcagente-Denia Railway (opened 1864), and through this the E.S.A. obtained access to the Denia Harbour sidings.

Ten locomotives were obtained for the opening of the line, all being massive, rather ugly 2-6-0 T's of Germanic design. Numbers 1 - 4 were built by Hanomag (Works Nos. 6947-50/13), while numbers 5 - 10 came from M.T.M. of Barcelona (Nos. 72 - 7/13). No. 9 was later sold but the others still remain on the line. The original rolling stock was all four wheeled and of wood construction. There were three classes of passenger coach giving quite reasonable comfort, and a very wide variety of open and covered freight stock was used.

For many years the line had a quiet and rather unprofitable existence with a service of three mixed trains each was taking approximately four hours for the journey. The line was used chiefly to carry agricultural produce and limited numbers of the local populace. Some traffic to Alicante and Denia docks was always carried. In relatively recent years the railway landed the contract for the bulk carriage of fuel oil between Denia Harbour and Alicante, and the existence of this traffic largely explains the continued survival of the line. New all metal welded bogie tank cars were obtained for this traffic.

In the past ten years the Costa Blanca has been struck by a social revolution which almost swept the railway into oblivion. The area has been invaded by tourists and each of the coastal villages has become a flourishing resort stretching for 2 - 3 miles along the coast but only sometimes reaching back to the railway. The coast road has been rebuilt beyond recognition and now carries frequent bus services. Many of the inland farms have been abandoned

and the one time peasants now attain a much higher standard of living in the towns. Those farms which remain have been enlarged and mechanised, and the farm owned car and lorry are the rule rather than the exception. In a matter of months the railway's traditional traffic virtually disappeared.

For a time the E.S.A. was in dire peril and had it been in our country it would have been a pile of scrap by now. The Spaniards, however, are more careful with their assets and an ambitious programme of modernisation and selective development of the freight traffic was undertaken, following a study of the line's potential. It was decided that the traditional sluggish mixed train service using ancient equipment was unattractive and out of keeping with this "new" part of Spain. In addition it was felt that there was no longer any need to provide once busy but now almost disused agricultural freight depots with six services per day, although hopes were expressed of expanding traffic to the docks provided a fast and cheap enough service chould be given. (Could this be where Dr. B. got his ideas?) With a minimum of delay the entire line was relaid and two Billard bogie railcars with trailers were obtained to operate the revised passenger service. The steam locomotives were retained to operate express freight services between the termini as required, and also to work one daily mixed train serving the intermediate stations. A number of freight depots near Alicante, the Altea harbour branch, and Altea locomotive shed were, however, closed. The railcars provided two trips each way along the full length of the line taking only $2\frac{1}{4}$ hours for the journey, and some additional trips were provided from Alicante to Campello and Altea. The improved service was an immediate success and the further growth of communities along the line has resulted in a further increase in the services to Campello and Altea. A further railcar has had to be hired from the Carcagente-Denia line to handle this increased traffic and this runs in the familiar two tone green Estado livery in contrast to the two tone blue of the E.S.A. owned cars. The old four wheeled coaches, retained for use on the one surviving mixed train, have found

new use on specials to Benidorm in connection with functions at the new bullring/stadium which has just been completed beside the station.

I was fortunate to visit the line in October 1962 and was most impressed with what I saw. The track and buildings are kept in excellent condition and the railcars ride extremely well. The passenger trains are all very well filled, (some too well filled) and a further increase in the service between Alicante and Altea is now contemplated. Little freight traffic is now handled at any of the intermediate stations except Altea although a fair amount of traffic originates at a private siding just south of Denia. There is now talk of closing more of the disused freight depots and certainly some seem to have outlived their usefulness. At the time of my visit there was a lull in the quite heavy through traffic and only locomotives 5 and 6 were in steam. The others seemed in good condition and several had seen recent use. As yet there is no talk of replacing them with diesels though the line is so progressive that such a move would not surprise me.

Despite its geographical disadvantages this active little line has found a useful place in the community and has fought its way to a fairly stable financial position. Largely due to its lack of interesting locomotives it has received relatively little attention from enthusiasts. This neglect is, I think, undeserved. When you are in Spain studying the glorious engines at Castellon or Alcoy you may find a visit to the forward looking E.S.A. a refreshing change.

THE CLIFFE HILL TRAMWAY - by Maurice H. Billington

One of the most interesting narrow gauge industrial systems was undoubtedly the Cliffe Hill Tramway, owned and operated by The Cliffe Hill Granite Co. Ltd., of Markfield, Leicestershire.

Set in very pleasant upland scenery quite close to the famed Charnwood Forest, this two foot gauge line was opened in 1897, extending from the Midland Railway near to Bardon Hill Station on the Leicester - Coalville line, (originally the Leicester & Swannington Railway) and for a distance of approximately 2½ miles to the quarries which lie about a mile west of Markfield village.

In its course the little railway had some severe grades to contend with, the worst of which extended from the passing loop for about half a mile at 1 in 34, later this was improved to 1 in 49 but even this grade must have made working difficult, and the sight and sound of one of the little locomotives climbing this bank must have been one to thrill enthusiasts, if not the locomen responsible for the train. Unfortunately I never witnessed this sight as I only discovered the line in 1950 when it had been closed for three years and the locomotives lay cold and rusting away at the top of the spoil bank.

All the locomotives delivered new to the Company were built by W. G. Bagnall Ltd., of Stafford, until 1926 when a Sentinel geared locomotive arrived. This was joined later by a similar one which was, however, secondhand. Although most of the locomotives were Bagnalls and of the 0-4-0ST type they were quite a varied lot, some having the normal Stephenson link motion whilst others were fitted with the patent Baguley valve gear which with its higher linkage was more suitable for use in the quarries.

The smartest locomotives were MARY and JACK of the 0-4-2T arrangement built in 1911 and 1914 respectively. These locomotives worked almost exclusively on the "main line" and were popular little engines in spite of their having no proper cabs as built (and for many years after - until the second World War in fact). These locomotives gave warning of their approach not by the conventional whistle but by means of a nice bell - so much more musical!

Another very interesting locomotive which was owned by the quarry was a Kerr Stuart 0-6-0T KASHMIR which had been in service in many places before arriving in Leicestershire in 1941. It did not come to the quarry named for this was done after one of the Company's former employees was killed whilst serving on that ill-fated ship of the Royal Navy.

Members will know of another locomotive from the Cliffe Hill stud, 0-4-0ST PETER which is now the property of the Society, and has recently returned from the Humberstone depot of the Lincolnshire Coast Light Railway for preservation at Markfield in accordance with the wishes of Mr. Peter Preston, the Managing Director of the Company and member of this Society who loved the little tramway and was so looking forward to having the locomotive back where it had worked for so many faithful years.

Alas, the tramway has gone now and its route forms an unofficial "right of way" for the local people, but there are still old bits of track to be seen and the embankment near to Stanton-under-Bardon village is likely to be there for some time, so if you like walking in very pleasant countryside and musing on what used to be, I can recommend a visit to the Markfield area, though it must have been much better before 1947, I'll freely admit!

THE SCHAFBERGBAHN - By David Stirling

This article is not intended to be a comprehensive study of this Austrian railway, but is merely a brief impression of the line as one finds it in summer.

The line runs up the southern side of the Schafberg (5770' high) from St. Wolfgang which is east of Salsburg and is a popular tourist centre on the Wolfgangsee and very well situated in a beautiful valley. St. Wolfgang is in an excellent position for attracting tourists from all around and this is beneficial to the railway, although the view from the summit of the Schafberg is a good enough reason for coming.

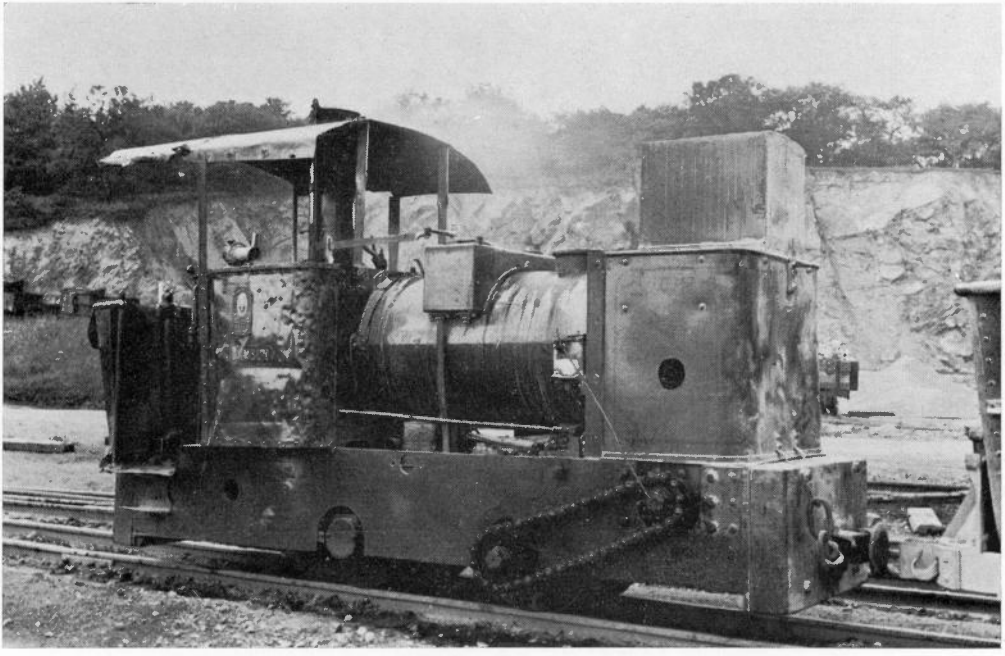
At St. Wolfgang station there are two passenger roads with a third giving access to the traverser, which in turn serves the locomotive and carriage sheds. The line is rack worked, and like the Snowdon the Abt system is used, and the rack is laid on all track, level or not, although at one termini only a single rack is used, instead of the usual double one. When one arrives in the station there are usually two or three trains, each comprised of an engine and a coach, simmering gently in one of the main roads, waiting to depart on their four mile push to the summit. The coach is always on the summit side of the locomotive and always coupled on, as there is a short downhill stretch not far from St. Wolfgang.

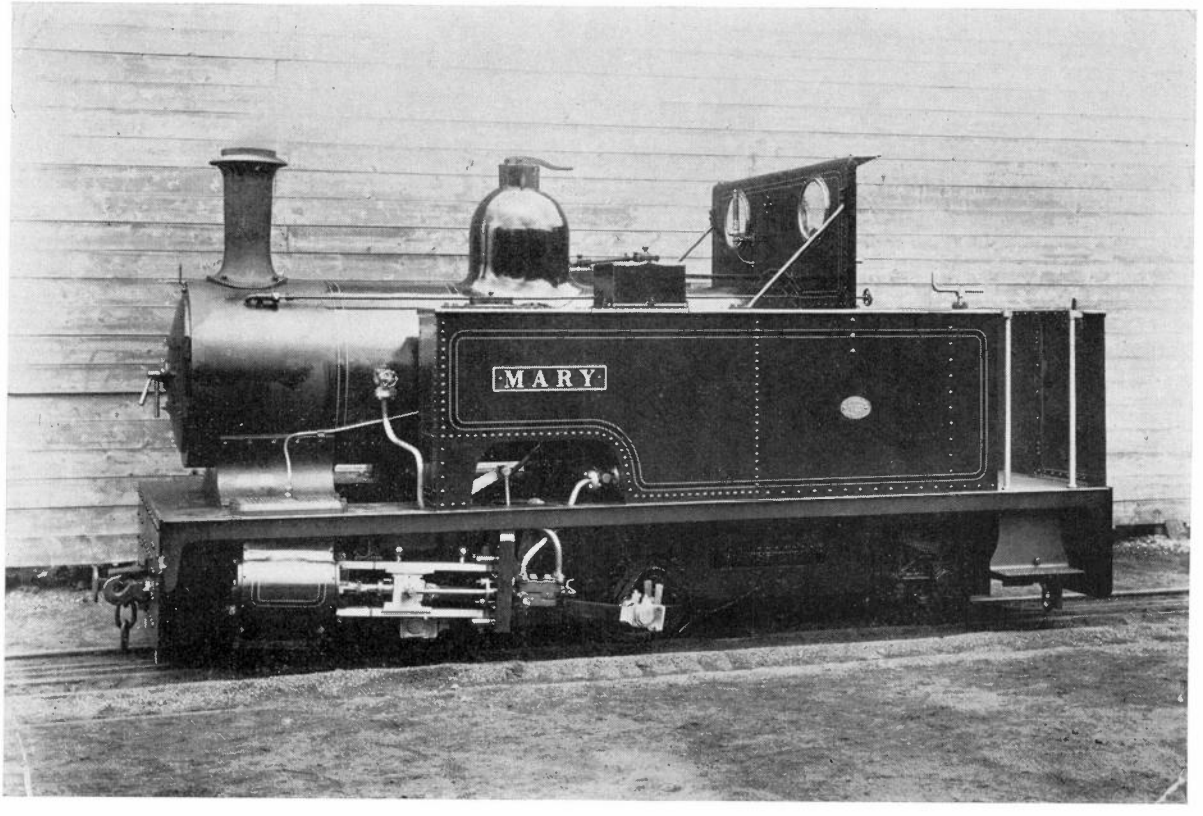
The three trains all start about a minute apart and begin with a fairly gentle climb through the back of St. Wolfgang and over the only level crossing, about two or three hundred yards out. Beyond this there is a terrifying gradient, which at first glance looks about 1 in 1 but once the train is actually on it, it is not so impressive as it looks. This is fairly short, however, and it soon gives way to a slight downhill gradient across a dip in the land. Beyond this the climb is continuous to the summit and the railway

occupies a shelf on the hillside among the trees for a time. The views on this stretch are mainly obliterated by the trees, but the glimpses of the lake below become more and more frequent as the trains ascend. The passing loop, which appears to be nameless, is 3330' above sea level and is soon reached; here the trains run together to wait their turn at the water crane, which is in between the tracks and serves both directions. When crossing, trains generally take the left-hand loop but if there are no trains in the opposite direction the loop which is set is used. At the loops (and the termini), the points are provided with indicators which, if parallel to the track indicate that the road is set for up trains. When at right angles to the track the faces, which are circular, show a white "V" on its side pointing to the left to descending trains and a horizontal white stripe to up trains. In both cases the background is black.

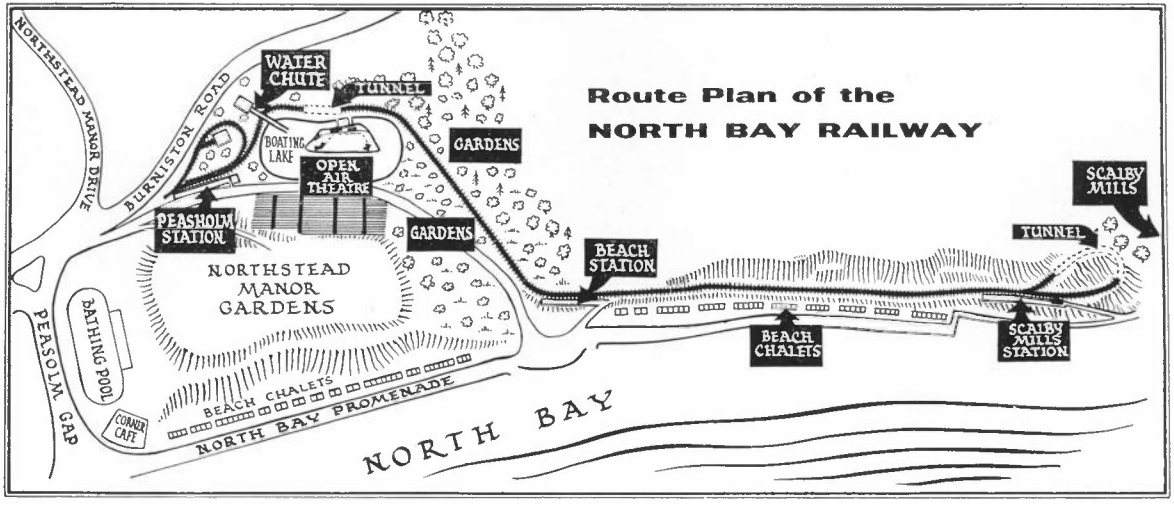
On leaving the passing loop, the trains, separated once again, continue on their journey. On this section the trees soon begin to become scarcer while the individual exhaust beats of the little engine can be felt in the motion of the coach. By the time Schafbergalpe station is reached the views of the lake below are magnificent. Schafbergalpe is the only intermediate point at which one can dismount and it consists of a plain loop, again with a water column in the centre, but this time with a building. The altitude is 4500', a short distance above the treeline.

After the locomotives have taken their fill of water, they start on the steepest and most impressive part of the line. On leaving Schafbergalpe there is a short very steep section, and then a shallow cutting cut with vertical sides through the rock. In this cutting the line turns until it emerges on the open hillside, high above the valley below. The direction has now almost reversed and the gradient begins to stiffen slightly for the last attempt to defeat the little engines. Shortly before the summit,

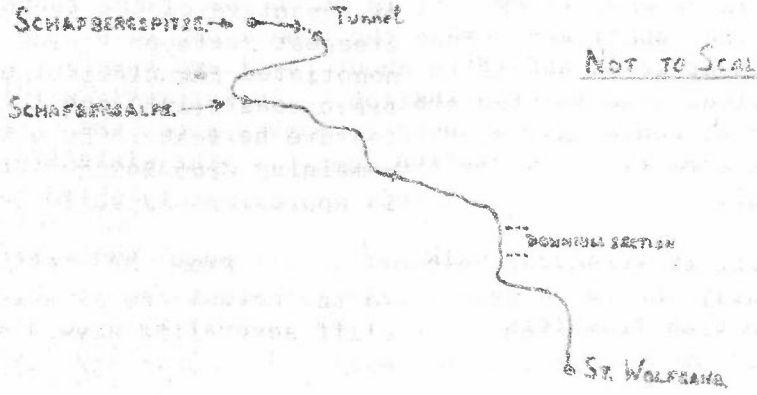


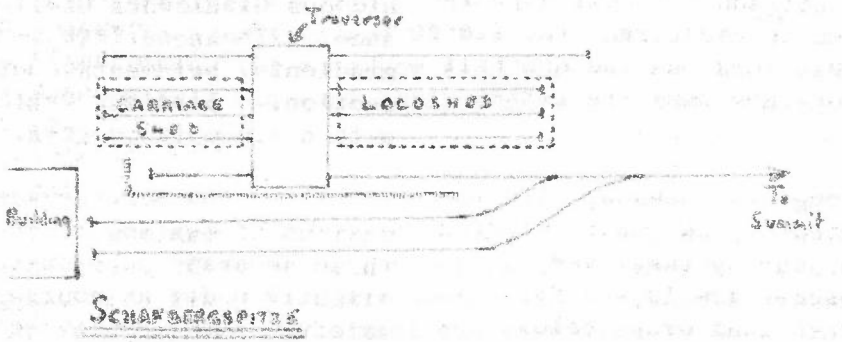

MARY

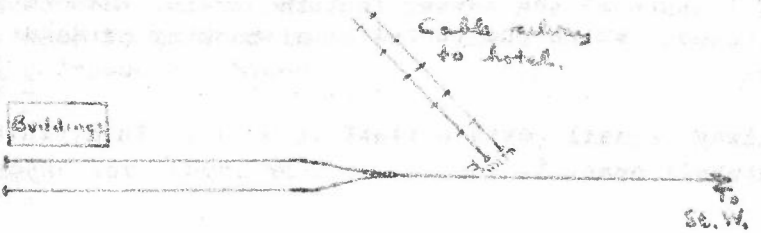

NORTH BAY RAILWAY


Route Plan of the
NORTH BAY RAILWAY
NORTHSTEAD MANOR DRIVE
BURNISTON ROAD
WATER CHUTE
TUNNEL
BOATING LAKE
OPEN AIR THEATRE
GARDENS
PEASHOLM STATION
GARDENS
NORTHSTEAD MANOR GARDENS
BATHING POOL
PEASOLM GAP
CORNER CAFE
BEACH CHALETS
NORTH BAY PROMENADE
BEACH STATION
BEACH CHALETS
TUNNEL
SCALBY MILLS
SCALBY MILLS STATION
NORTH BAY

THE SCHAFBERGBAHN







the line begins to curve to the left, and it is here that the only tunnel is encou ntered. This is fortunately short, as following two other trains through it, with another engine behind contributing its share of sulphurous fumes is distinctly unpleasant by the time the train emerges. Another disadvantage of the tunnel is that it is on one of the steepest sections of the line. Once the tunnel has been negotiated the gradient eases off to about level and the train coasts into Schafbergspitze station. An interesting feature here is the cable railway used to convey goods the remaining distance to the hotel on the summit. The station is approximately 5,740' above sea level.

From the station it is a short if strenuous walk to the actual summit which is practically the top of a cliff several hundred feet high. The view from this easily justifies any discomforts in the tunnel.

The line, which is of metre gauge, has three 0-4-2T locomotives, all built by Krauss and fitted with hideous Giesl ejectors, which do not add to their appearance. Their boilers are inclined to counteract the fierce gradients, but one wonders how this works on the downhill section. Like our own Snowdon engines they are fitted with a wierd valve gear.

The service varies through the season, with a maximum of ten trains, all of which may be run in up to three separate portions, and the journey takes very slightly under an hour. All coaches are locked for safety, as in some places there are long drops below the train. Another interesting feature is the issue of booking cards at the summit, without which one cannot board a descending train.

In my opinion this railway is well worth a visit for anyone who happens to find himself near it.

THE GROUDLE GLEN RAILWAY - by Ken Hartley

Although the 2'O" gauge Groudle Glen Railway must be known to many thousands of visitors to the Isle of Man, press references to it are infrequent, and often lack the detail desired by the narrow gauge enthusiast or model maker. It is hoped that the following notes and accompanying drawings will help to remedy this, but it must be understood that on my visit to the island in 1962 time did not allow for complete measuring up of the stock, and furthermore one or two details e.g. valve gear, are omitted.

Most of the locomotive dimensions were obtained from the semi-derelict locomotive SEA LION, but in the main they apply also to the later POLAR BEAR - differences in wheel sizes vary according to wear, and all are less than those quoted by the makers. For the record, the details given below were obtained from W.G. Bagnall Ltd., some years ago by Henry Holdsworth, to whom I am indebted. A number of overall dimensions were also procured from the driver at Groudle Glen, but unfortunately contained some noticeable errors. From later personal experience it seems quite useless to try and get information by post - despite "S.A.E.'s".

Bagnall's No.	1484	1781
Name	SEA LION	POLAR BEAR
Date	1896	1905
Cylinders	$4\frac{1}{2}$" x $7\frac{1}{2}$"	5" x $7\frac{1}{2}$"
Driving wheels	1' 2"	1' $3\frac{1}{4}$"
Wheelbase,cpld.	2' 6"	2' 6"
Wheelbase,total	5' O"	5' O"
Working pressure	140 lbs.psi.	140 lbs.psi.

The locomotives have the well known Bagnall launch type boiler, and "Bagnall-Price" valve gear driven by one eccentric only for each set of motion. All wheels are spoked - six spokes

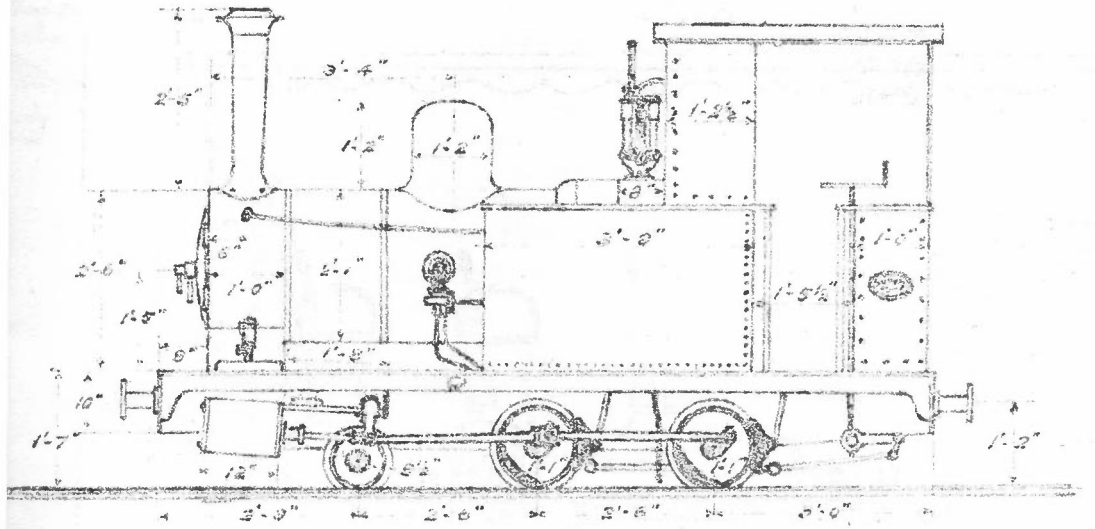
each - and the leading axle is carried on a pony truck, supported by a single transverse spring, which gives the very flexible wheelbase necessary on the Groundle line. With a height of only 6'5" to cab top it is obvious that the driver cannot stand up, and he in fact occupies a seat on the right hand side of the footplate. On the left hand side of the coal bunker and handbrake column, while between the frames the footplate is 'dropped' to form a well. Cab fittings are reduced to the bare minimum essential for working. Centre buffers, 6½" long, are used in conjunction with simple link and pin couplings.

In August 1962, SEA LION stood out in the open, to the rear of the locomotive shed, partly screened from view by a tall hedge. Several fittings had been removed, including the dome cover, and it is to be supposed that the boiler was in poor condition. The earlier livery used on the engine was still fairly discernible, viz: bright green, panelled in black edges with a white line. Gold lettering, shaded (blue?). Red buffer beams. Chimney all black and in good condition.

POLAR BEAR had fairly recently been repainted. The result may be regarded with mixed feelings by many enthusiasts! (Me, for a start! ed.) Briefly, the cab and tanks are plum red, with bright blue 'waist' strip; boiler and smokebox blue. Front buffer beam red, rear buffer beam blue. The footplate is black. There is also some rather fanciful lining and lettering in yellow. The brasswork was polished, excepting the chimney top, which was black. In passing it is worth mentioning that the coloured cover view of the MODEL RAILWAY NEWS for February, 1963 gives a superb representation of "The Groudle".

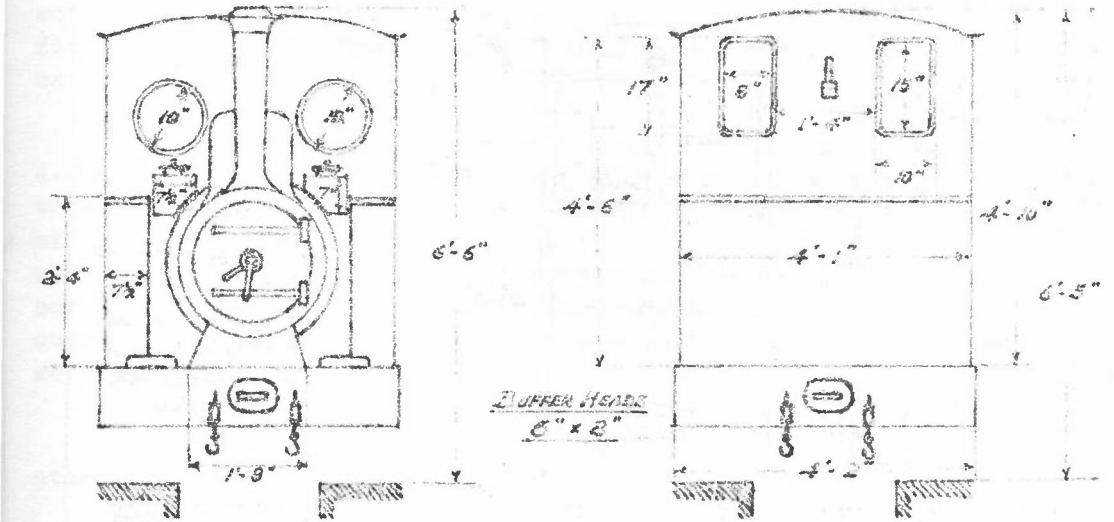
It was stated, a year or two ago, that SEA LION was likely to go to Stafford for complete overhaul, but the unfortunate demise of Bagnalls apparently put an end to the project. POLAR BEAR seems to be in reasonable order, but in view of her 58 years, one wonders sometimes how much longer

GROUDLE GLEN RLY. I.O.M.



BAGNALL 2-4-0T "SEA LION"

SCALE: $\frac{3}{8}$" = 1 FT.

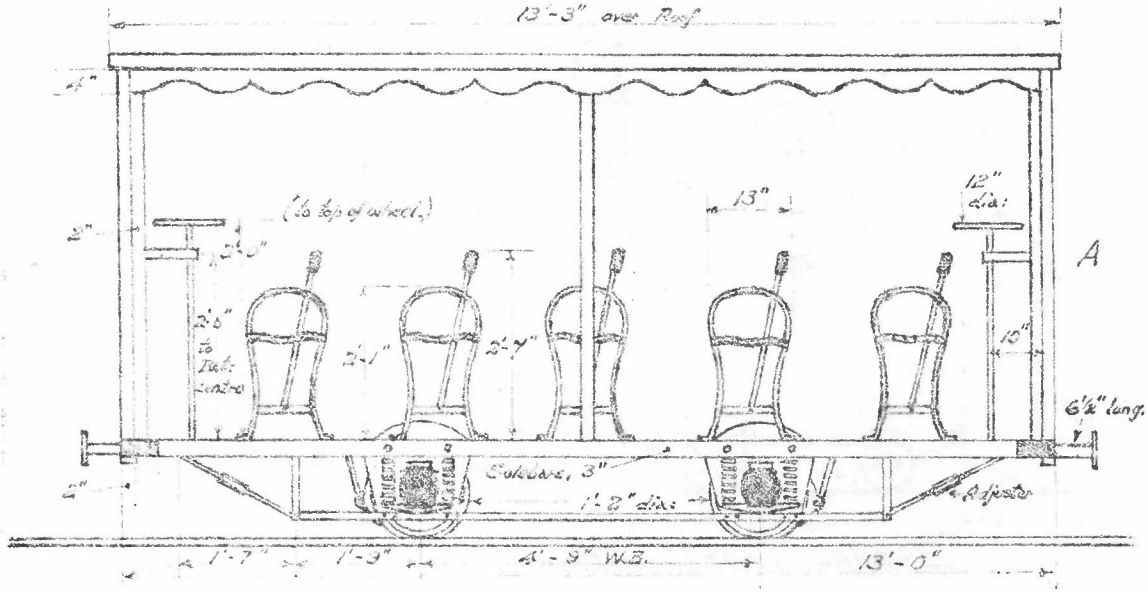


DRAWN	K.E. HARTLEY	11-Nov-62
TRACED	K.E. HARTLEY	29-June-63

WORK TO FIGURES ONLY

USE WITH REAL PHOTOS. CO. LTD. PHOTO. NO. X. 6144.

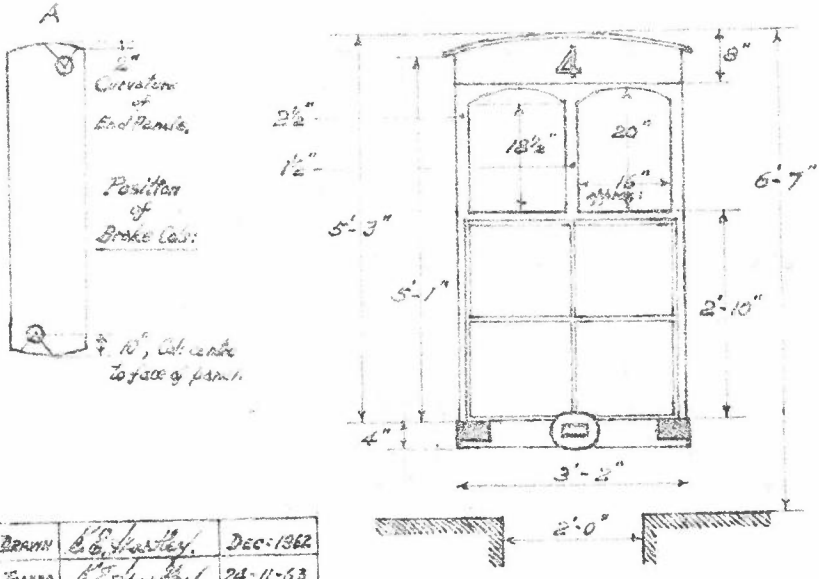
GROUDLE GLEN RLY. I.O.M.



10-SEAT PASSENGER COACH.

(1" = 1 Ft.)

SCALE: 3/8" = 1 Ft.

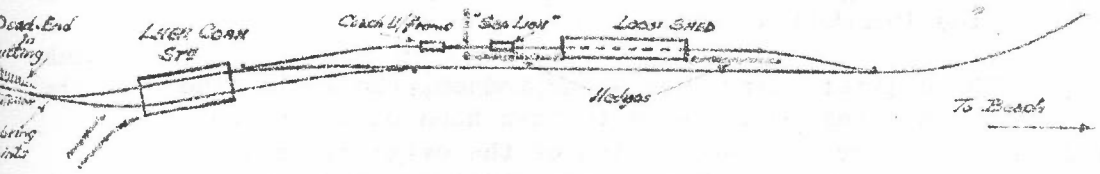


Note:
No grass in windows.
Double Coil Springs.
Brake Cab: not on centre line of coach.
All coaches are not identical.

DRAWN	L.C. Hartley.	Dec: 1962
TRACED	L.C. Hartley.	24-11-63

WORK TO FIGURES ONLY.

GROUDLE GLEN RLY: I.O.M.



LAY-OUT AT LHEN COAN STATION.
(NOT TO SCALE)

KEN HARTLEY.
1-12-63.

DETAIL OF ALTERNATIVE FITTING OF COACH TIE RODS.

this delightful little engine will continue her trips up and down the glen.

It is understood that, in about 1921, a couple of B.E.V. 0-4-0 electric battery locomotives were introduced to work the traffic, but no details of these, or of their ultimate fate, are known to the writer. (Can anybody throw any light on these machines?)

The coaching stock of the line consists of small 4-wheel "toastracks", each seating ten persons, on reversible wooden slatted seats. I believe there were originally four of these vehicles in 1896, with a further four added circa 1906, when POLAR BEAR arrived. Two trains were then in operation, but in 1962 only six carriages were in use. These had all been overhauled and repainted, after the vandalism of 1959-60, and were in good order.

The complete underframe of a seventh coach was standing on the track near SEA LION, and it seems possible

that parts of an eighth one lay amongst a heap of junk on the far side of the locomotive shed.

These little carriages - and indeed, the whole line including the buildings - are said to have been built by unskilled labour, under the supervision of the original proprietor (See Narrow Gauge Railways of Gt. Britain, F.H.Howson, 1948).

In general the coaches are all of the same design, but there are differences in the underframes, some (e.g. nos. 4,6) have the tie bars as shown on the drawing; others (no.1, and certainly one more) have a different arrangement, and also have a 'vee' shaped guard at the outer sides of the axles. Handbrakes, operated through a handwheel and vertical shaft, are fitted to the coaches, a necessary precaution, in view of the heavy gradients on the railway.

The colour scheme has varied from time to time. At one period the coaches were, I believe, black, lined in red and white, but at the time of my visit they were painted as follows: Floors and underframes, black; roof supports and inside body, silver; brake columns, seats, and bottom half of centre upright, bright blue; ornamental edging to roof, bright red, lined yellow. The ends were panelled in alternate red and yellow squares framed in the beading, the portion above the windows (which had no glass by the way) was blue (I think!) The general effect was rather gaudy, as with POLAR BEAR.

I should perhaps draw attention to an apparent discrepancy in the coach end measurements. This is due to the fact that the windows and outer faces of the uprights were not of course, measured at right angles to the length of the vehicle, whereas the overall width (3' 2") was. The 'straight' width of the ends is the same, from the roof down.

Finally, a few words about the line itself. This is situated some little distance down the Glen, and runs along

a ledge on the left-hand side. The inner terminus LHEN COAN, is reached up a short steep path leading off the main footpath down to the shore, and is a rather barn-like structure of wood, with three seats and a refuse basket.

A short way down the line is the long, timber built, locomotive and coach shed. This will house a c mplete train, but the other coaches have to be parked in the station. The stretch of line near this point is almost the only straight track on the railway, for the line abounds in sharp curves and 'S' bends, and check rails are much in evidence, as are short but severe gradients. Roughly $\frac{3}{4}$ mile from Lhen Coan, the track emerges from the picturesque, wooded glen on to a small lofty headland. This is now the terminus, overlooking a small beach, and has a run-round and a water tank set on the bankside. Just before this loop are the remains of a longer one, where in the hey-day of the line, the two trains crossed.

Until some time prior to World War II, the trains continued round the headland, on a further succession of sharp bends, to SEA LION COVE, where there was a station, loop, etc.; and way down below, in a rocky cleft in the coastline, pens where polar bears and sea lions were kept. I believe the rail ticket included admission to these.

Although all the animals and buildings have long since disappeared, the track is still in position, though much over-grown, and even completely buried in places, with weeds and prickly gorse. The solidly built stop-block at the end is rather impressive - it is built at the edge of an almost sheer drop down to the Cove! The length of the line, including the derelict section, is approximately $1\frac{1}{2}$ miles, the gauge is 2' o", and the track consists of flat bottom rail (21 lbs. per yard) spiked to wooden sleepers.

THE NARROW GAUGE LOCOMOTIVES OF HUDSWELL CLARKE & CO.LTD.,

by Ron Redman.

Part 2 - The North Bay Pacifics.

Just under a mile in length the Scarborough Corporation's 20" gauge North Bay Railway is one of the finest miniature lines in the country and forms a major attraction at this very popular resort.

The design and layout of the railway was the work of Mr. H.W. Smith, the Borough Engineer from 1896-1933, and the line was officially opened by the Lord Mayor on the 23rd. May 1931 when he drove the train on its first official run.

Prior to construction, tenders were invited for various forms of motive power and rolling stock. At least three firms put forward quotations and designs. Bassett-Lowke Ltd., of Northampton suggested a gauge of 15" to be worked by 3" scale steam locomotives. Baguley Engineers Ltd., of Burton-on-Trent, submitted alternative types of 4-6-2 on 20" gauge for both internal combustion or steam power. The main particulars of the steam locomotive were to be: Cylinders, 4" dia. by 6½" stroke; wheel base, 4'3"rigid, 10' 9" total; heating surface of tubes 75 sq.ft., firebox 8 sq.ft., grate area 2½ sq. ft.

The successful quotation was by Hudswell Clarke & Co.Ltd., with their 1/3rd. scale outline model of the famous L.N.E.R. 4-6-2 powered by a diesel engine and with hydraulic drive.

The original track (20lb.rail) was supplied by Robert Hudson Ltd., the light railway engineers of Leeds. The track bed and all earthworks and buildings were carried out by the Corporation with direct labour.

The general layout is as shown on the accompanying map apart from the tunnel at Scalby Mills, this was removed in 1962 and replaced by a runround loop, the centre of

which is laid out as a rose garden.

The line starts from the Northstead Manor Gardens and is single track apart from the passing loop at Beach Station, at the point where the line runs on to the coast. This station is now closed.

Hudswell Clarke & Co., supplied five scale coach underframes for the opening of the line, each fitted with Westinghouse air brakes, and another five the following year. They are all fitted with tramway type reversible seats manufactured by the Scarborough firm of Slingsby & Armstrong. The capacity per coach is 20 passengers and up to 100 per train.

The first locomotive NEPTUNE works number D.565 arrived on 2nd May, 1931 and was unique in the fact that it was the first locomotive in the world to be fitted with a Vickers'Coats torque converter, a type of transmission now in favour for modern diesel hydraulic industrial shunting engines.

The second locomotive TRITON works number D.573 was supplied on 29th April, 1932, after the success of the first season when one locomotive had carried 410,000 passengers with a return of £12,307 in 3d. and 6d. fares! Both locomotives are identical in appearance and painted in L.N.E.R. colours, with the eight wheel tenders bearing the letters 'N.B.R.' and the year built is painted as a running number on the cab side sheets.

The locomotives ran as built up to the winter of 1959-60 when both were rebuilt with new engines. Details of the specification are shown at the end of these notes.

The railway, like most lines, has had its troubles. There have been two crashes on the line, involving both locomotives, in one of them a driver lost his life.

The engines now have a tablet system installed in the cabs by the Railway Signal Company Ltd., of Fazakerley, three

keys operating the system when both locomotives are in service, the drivers exchanging keys at Beach Station, trackside ramps apply the engine air brakes automatically unless the right key is in position.

Early in the line's history, a deputation from the Free Church Council attended the Council meeting on 12th June, 1931 to protest about the railway operating on Sundays. However a majority vote saved the day and since then trains have run on seven days a week, right through the main holiday season.

In closing I would like to thank the Borough of Scarborough Entertainment and Catering Department for much of the historical information and permission to reproduce blocks supplied by the Corporation printers, Messrs. Pinders. My thanks are also due to Hudswell Clarke & Co., for the early block of the line and specification date on the two locomotives.

LOCOMOTIVES - 20" gauge
Works nos - D.565/1931 NEPTUNE & D.573/1932 TRITON
Engine - As built, Dorman 2 cyl.diesel. 26 h.p. at 1800 r.p.m. Replaced in 1959 by 32 h.p. Dorman DL 111 giving 30 h.p. at 1,000 r.p.m.
Transmission - Vickers-Coates Torque converter with shaft drive to final reduction gear box mounted on the leading coupled axle.
Fuel tank - 5 galls. capacity (in firebox!)
Brakes - Westinghouse air brakes and hand brake.
Wheels - Driving 2'4" dia. Bogie and tender 1'2" dia.
Coupled wheelbase - 5'1½".
Length of engine and tender over buffers - 26'1".
Max. width - 4'0". Height 5'5".
Weight of engine and tender empty - 9 tons 5 cwt.
Weight of engine and tender in full working order - 10 tons 5 cwt.

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