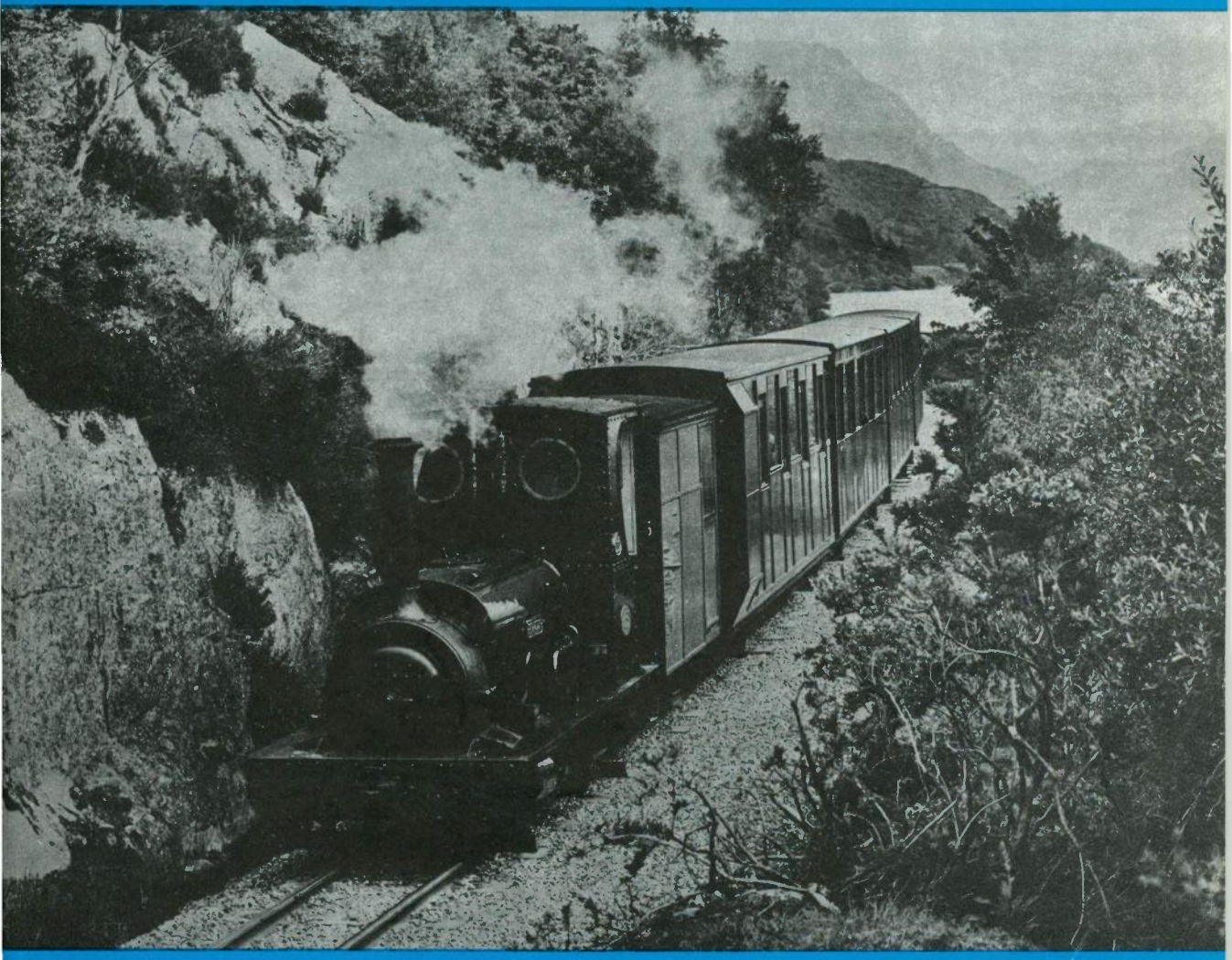
THE NARROW GAUGE

No. 75 Spring 1977



NARROW GAUGE RAILWAY SOCIETY

NARROW GAUGE RAILWAY SOCIETY

Serving the narrow gauge world since 1951

SECRETARY : M. Swift, 47 Birchington Avenue, Birchencliffe, Huddersfield, HD3 3RD.
MEMBERSHIP SECRETARY : R. Pearman, 34 Giffard Drive, Cove, Farnborough, Hants.
TREASURER : T.G. Welsh, 9 Derwent Crescent, Kettering, Northants.

The Society was founded in 1951 to encourage interest in all forms of narrow gauge rail transport. Members interests cover every aspect of the construction, operation, history and modelling of narrow gauge railways throughout the world. Society members receive this magazine and Narrow Gauge News, a bi-monthly review of current events on the narrow gauge scene. An extensive library, locomotive records, and modelling information service are available to members. Meetings and visits are arranged by local areas based in Leeds, Leicester, London, Preston and Stoke-on-Trent. Annual subscription £3.50 due 1st April.

THE NARROW GAUGE

EDITOR : A. Neale, 7 Vinery Road, Leeds, LS4 2LB.
ASST. EDITOR & LAYOUT : R.N. Redman, 14A Oliver Hill, Horsforth, Leeds, LS18 4JF.
BACK NUMBER SALES : G. Holt, 22 Exton Road, Leicester, LE5 4AF.

Published quarterly by the Narrow Gauge Railway Society to record the history and development of narrow gauge rail transport. Our intention is to present a balanced, well illustrated publication, and the Editor welcomes original articles, photographs and drawings for consideration. Articles should preferably be written or typed with double spacing on one side of the paper only. The Editor appreciates a stamped addressed envelope if a reply is required.

A range of back numbers, and binders for eight issues (£1.00 post free) are available from the address above.

Printed by Hadfield Print Services Ltd., 43 Pikes Lane, Glossop, Derbys. SK13 8ED.

EDITORIAL

This issue is the first for some time in which our major article has not dealt with a steam operated system. Brian Rumary's contribution is not only an excellent detailed article on a subject entirely new to most members but helps to make the point that we are a society devoted to narrow gauge *railways* and not merely the locomotives that run on them. As in the preservation field, many enthusiasts spend a disproportionate amount of time purely pursuing locomotives with little ragard to rolling stock or the systems themselves.

This is a pity, for the latter can often be as interesting as the motive power employed. (Indeed, your editor freely confesses that he prefers to see an operating horse or cable worked system than a loco, however interesting, dumped in a scrapyard or dark shed). Increasingly in Britain while the total number of locomotives only slowly decreases, the number of operating systems outside the preservation field is declining far more rapidly. So why not take advantage of the summer to see what is left? Often these can be fitted into a family holiday such as the fascinating lines at St. Keverne and Pentewan in Cornwall, the remaining Welsh slate quarries, and Scotland's remote remnants of larger systems at Fort William and the Isle of Lewis, while many of the remaining colliery, brickworks, and peatbog systems can be visited on the way to somewhere else.

And, *please,* while you are there, ask that old "gaffer" what he remembers of the system in its heyday, and let us have the results of your enquiry when you return!

Cover Picture: Summer scene— in June 1975. *Hunslet 0-4-0ST ELIDIR and train in service on the Llanberis Lake Railway (L.A. Nixon)*

THE INDIAN SUMMER OF A HUNSLET

Paul Hitchcock

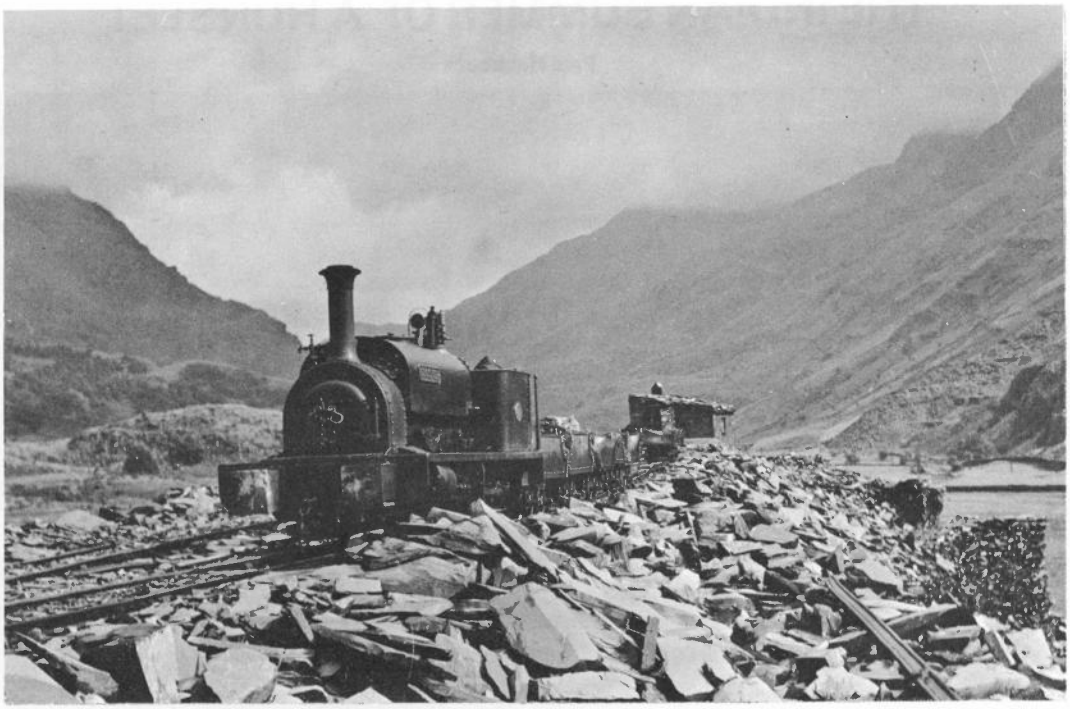
CLOISTER at work on the tracks of the Hampshire Narrow Gauge Railway Society.
(Ivo Peters).

Perhaps it is just an accident of history that so many of the locomotives supplied by the Hunslet Engine Company to Welsh slate quarries have survived. The quarries were such fascinating treasure houses of antique machinery generally, that it could be argued that the survival rate owes more to the unwillingness of the proprietors to throw anything away than to the mechanical merits of the design. Nevertheless the present popularity of the Dinorwic "Alice" class in particular, as a passenger hauler is some indication of its wearing qualities and its versatility.

The writer cannot claim to have visited all the sites where these locomotives are currently in operation, but he has considerable experience of one of the first members of the class to leave Llanberis,namely CLOISTER which was built in 1891 as works number 542. She now enjoys an active retirement on the track of the Hampshire Narrow Gauge Railway Society at Durley near Southampton where she has proved a great success as a passenger hauler.

These engines were built to quite a specialised design which owes more to the peculiar working conditions found in the quarry than might be apparent at first glance. The lack of a cab was made necessary by the constricted tunnels through which some gallery lines passed. Less obvious features deriving from Dinorwic conditions are the tapered frames, the ultra short wheelbase and the short but wide firebox.

Speaking personally, the writer can manage without the cab as the occasional soaking is more than compensated for by the increased room on a constricted footplate for the crew. The tapered frames, fitted to ease the problem of transfer between the various levels via inclined planes, have the incidental advantage of giving easier access to the ashpan, whilst the short firebox, necessitated by the need to reduce overall length for the same reason will produce plenty of steam. In present use a wheelbase of as little as 3ft 3ins is not required and this is perhaps the most unfortunate legacy of quarry conditions as it produces considerable pitching and yawing.



CLOISTER in use at Dinorwic in 1956. *(Michael E. Ware).*

For a nineteenth century design, access to the motion work for lubrication is surprisingly easy and there is no need to use a pit. The outside frames facilitate attention to the axleboxes and the inside motion work presents few difficulties. This ease of access extends to such areas as the ashpan and to the layout of the steampipes in the smokebox which present no obstacle to tube cleaning.

Steam raising from cold without forced draught is a lengthy process and even with assistance from a blower which formerly saw service in a car heater it is not particularly rapid. This unpromising start belies the situation when pressure has been raised,for provided that the fire is kept thinner at the front and the back corners are not forgotten there will be no shortage of steam, rather the reverse. Techniques for firing vary, but the writer finds that a fairly thin fire fed on the "little and often" principle gives the best results for him with the advantage that the fire is more easily controlled than a thicker one. With these firing methods the damper is often closed for long periods.

In order to avoid the injectors becoming overheated — they are of the faceplate type — it is advisable to use them frequently but not for too long at once as too much cold feedwater will upset steam production. A problem, which can be avoided if the level in the saddle tank is not allowed to fall too much below the crown is overheating of the feedwater by heat transfer from the boiler to the tank.

Driving the engine presents few problems. The regulator valve is sensitive and most of the running is done on a small opening with the reversing lever in the second of the three running notches. Braking power is adequate but nothing special, raising the thought as to how heavy slate trains were stopped before they went crashing into oblivion. One other point to bear in mind is the lack of cylinder cocks. Drain valves are fitted to the valve chests but unwary bystanders can be splattered with dirty water when moving off for the first time.

Although the duties performed by CLOISTER at Durley cannot be compared with those undertaken by those of the class still in Wales the outstanding feature of the engine is the remarkably light coal consumption. Including lighting up from cold only one wheelbarrow full of coal is needed for an afternoon operating session of more or less continuous running.

With these advantages of handiness and low running costs it is not surprising that the small quarry Hunslets have proved popular for pleasure lines. Their attractive appearance, with plenty of polished brass to set off their fine proportions, is an added bonus for such a use.

WEST GERMAN PEAT BOG RAILWAYS OF THE MEPPEN AREA

Brian Rumary

The digging of peat is an important industry in parts of West Germany, especially on the flat northern plain of Niedersachsen (Lower Saxony), and the majority of companies involved make use of narrow gauge railways over the trackless, boggy terrain. The industry has been in existence on a small scale since the days of the Kaiser, but has expanded greatly in recent years, due to the increased use of milled peat for agricultural purposes. In the early years some lines used steam locomotives, but now all use diesels of several different types and makes, mostly built by the firms of Diema and Schöma.

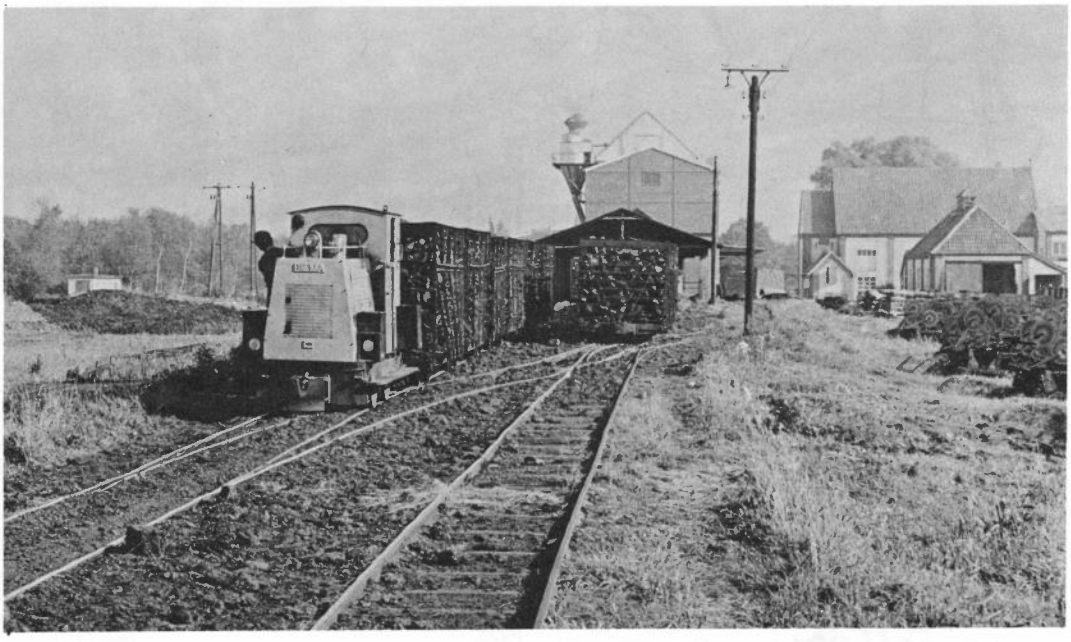
There are several areas with a concentration of peat railways, but this article only covers those on the moors between the town of Meppen — on the River Ems — and the Dutch border. (There are probably more peat works across the border in Holland, but these are outside the scope of this article). Originally at least one of these companies sent peat out by boat, on the Sud-Nord-Kanal, but this waterway is now only used for drainage and no longer navigable, so almost all production now leaves by road. Some of these systems are "elevator" lines — that is the rails run to a lay-by on the nearest surfaced road, where peat is transferred to road vehicles by means of a mechanical elevator. The peat then goes by road to a central mill, where it is sorted, powdered and compressed into bales before being shipped to the customer. Some of the larger systems deliver peat direct to a mill, and can be referred to as "mill" lines.

Unfortunately many firms do not bother to erect name boards at their works, which makes identification of the owners rather difficult. The peat is often sold through central marketing organisations, under brand names such as "Floratorf", so checking peat bags and wrappers is often no help in tracing names.

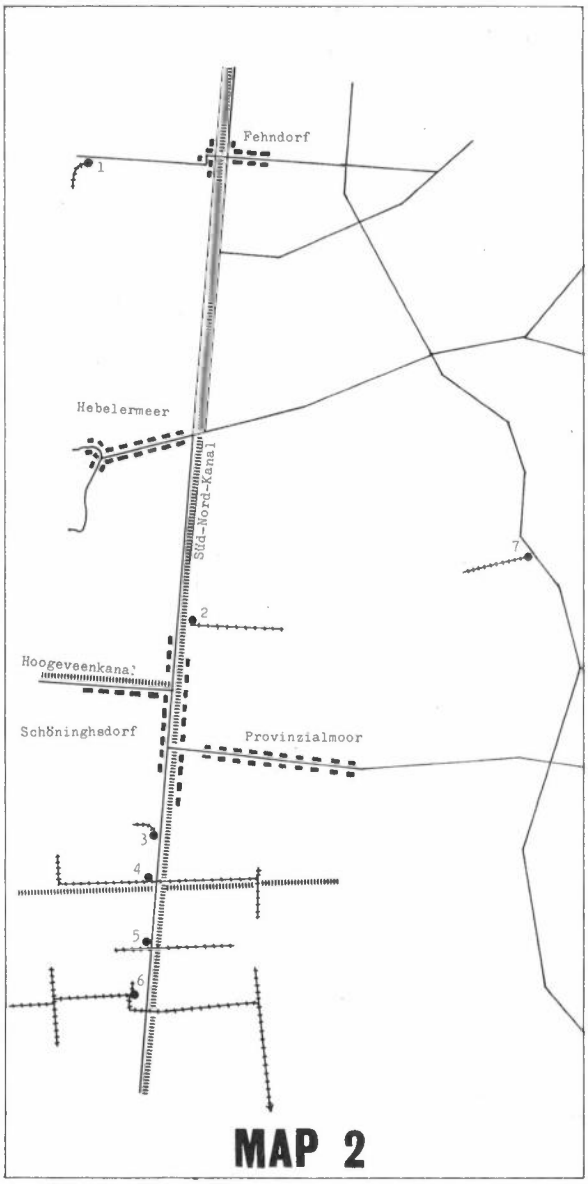
These notes are the result of four visits in the last few years, made on the following dates:-

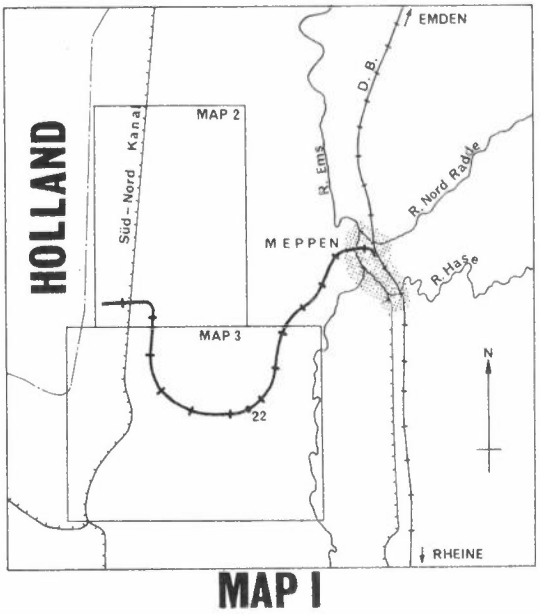
8th -9th October 1969
11th -12th October 1970
13th October 1973
13th April 1975

The dates given beside each location show when I made visits to that place. I have also received some help from Mike Spellen and Reinhard Schmitz, for which I am very grateful.



A typical peat bog railway scene. Diema 4wDM 24 (Diema 1251/48) shunting at the works of the extensive 900mm gauge Heseper Torfwerke system 22 on 9th October 1969. The old steam shed is on the right.
(Brian Rumary).





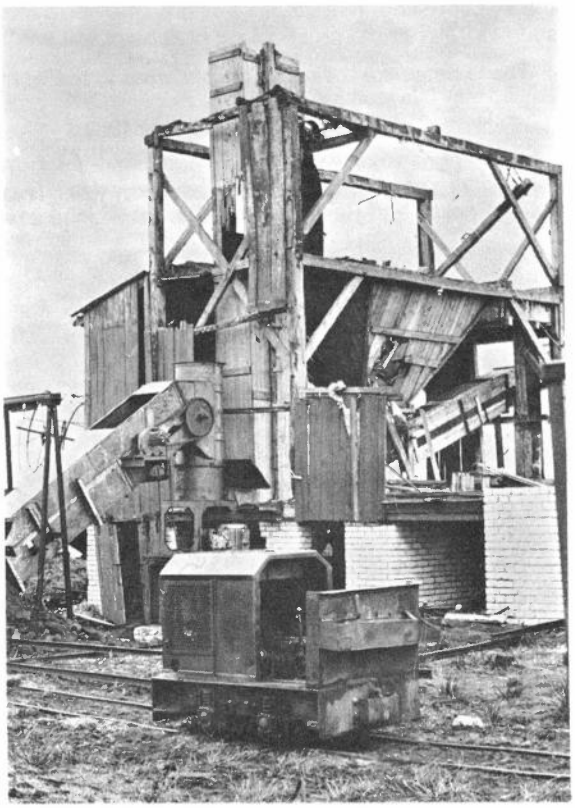
KEY

Main Roads

Kanals & Moor drains

N.G.Railways

Houses



The peat grading plant at Torfwerke Fehndorf (1) with Diema 2087/57 standing in front, 13th April, 1975. *(Brian Rumary).*

This is by no means a complete history of the peat workings in the area, but is intended to give readers a general picture of the rail systems that have operated in recent years. It is possible that some lines have been missed entirely, especially as some of the small elevator systems have a fairly short life. However I think that this account will show that these moors are worth a visit. Of course I would be very interested to hear from any other enthusiasts who can add anything to my knowledge of these lines, or indeed any other n.g. industrial systems in West Germany. I hope later to produce articles on the other peat railways of North Germany, if the editor agrees.

Locomotive builders.

Deutz	Klöckner-Humboldt-Deutz AG., Köln-Deutz & Köln-Kalk
Diema	Diepholzer Maschinenfabrik (Fr. Schöttler GmbH.), Diepholz
Gmd	Gmeidner & Co.GmbH., Mosbach
Jung	Arn.Jung Lokomotivfabrik GmbH., Jungenthal bei Kirchberg an der Sieg
Kröhnke	Kröhnke Maschinenfabrik, Hamburg-Harburg
Schöma	Christoph Schöttler Maschinenfabrik GmbH., Diepholz
Windhoff	Rheiner Maschinenfabrik Windhoff AG., Rheine/Westfalen
s/s	scrapped or sold, disposal unknown.

In the following loco lists the last three columns give the following information:-

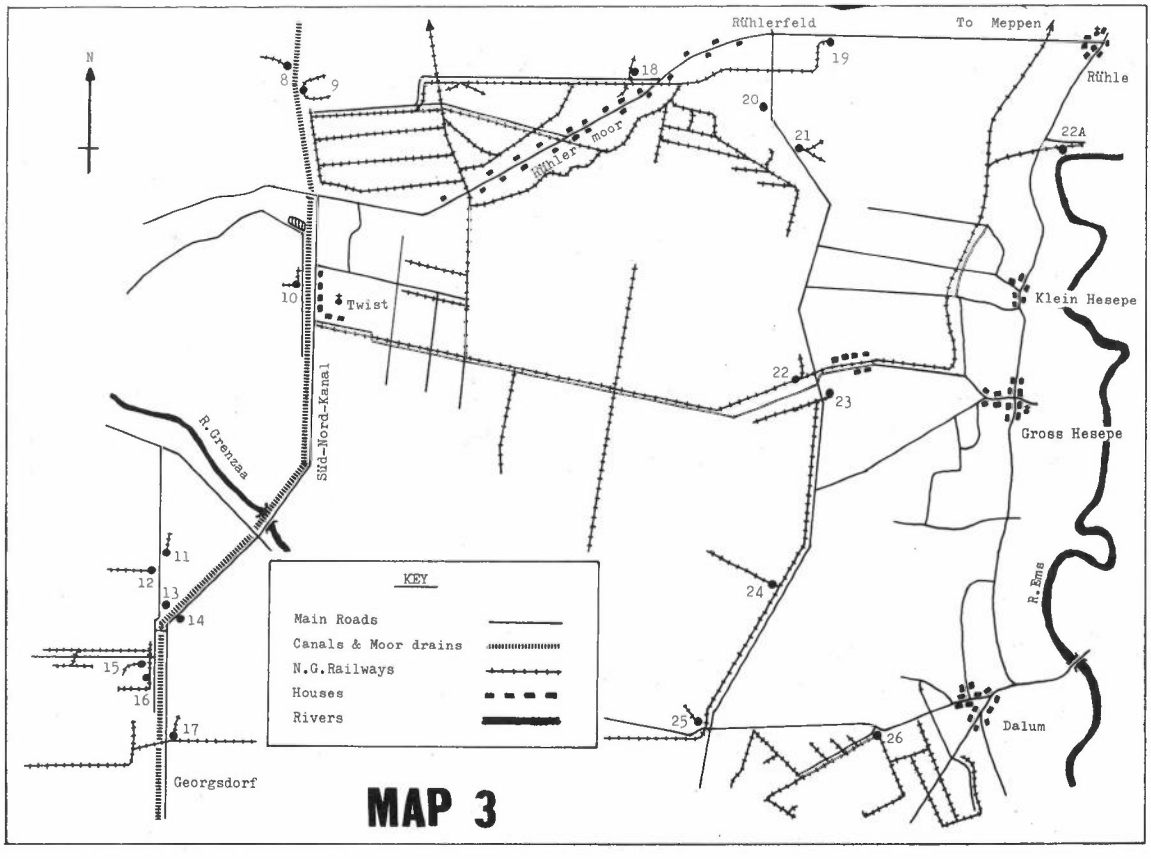
(i) the builder's type code; (ii) the power in metric horse-power (PS); (iii) the weight in working order, in metric tonnes.

1) ? , **Fehndorf** 1970, 1975

A medium sized elevator system, owner unknown.

600mm.

4wDM	Diema	2592/63	DL6	8PS	1.15t
4wDM	Diema	2087/57	DL6	7.5PS	1.15t



2) **Griendtsveen Torfstreu AG., Versener Moor** 1970, 1975

An elevator line, owned by a Dutch firm.

900mm.

0-4-0DM	Deutz	23418/39	OMB 117	12/13PS	(a)

(a) ex Spoorijzer Delft, Holland. ?

3) ?, **Provinzialmoor** 1973, 1975

The owner of this small elevator line is Dutch, name unknown. There were 3 locos here in 1973, but by 1975 only No. 5 remained.

900mm.

1	4wDM	Diema	2988/68	16PS	s/s
3	4wDM	Diema	2341/60	16PS	s/s
5	4wDM	Diema	1618	15PS	

All three locos carried a plate reading "N.V. I.V.B. Zwolle-Groningen".

Griendtsveen Torfstreu AG., Schöningsdorf (4), 900mm gauge, 13th April 1975. Loco 2, a typical early Schöma 4wDM, outside the works. (Brian Rumary).

4) **Griendtsveen Torstreu AG., Torfwerk Schöninghsdorf** 1970, 1973, 1975

This is quite a big system, but with only a small mill. Lines run out onto the moors on each side of the Sud-Nord-Kanal.

900mm.

2	4wDM	Schöma (?)				
	4wDM	Schöma	394/	16PS	16PS	
	4wDM	Schöma	720/43			(a)
	4wDM	Schöma	2406/60		22PS	
	4wDM	Schöma	3229/70	25.5PS	3.5t	

(a) ex Griendtsveen Torstreu AG., Werk Papenburg.

5) ?, **Schöninghsdorf** 1970, 1973, 1975

The owner of this system is still unknown, even after three visits! There is a small mill here, built of concrete blocks and corrugated iron. When first visited, lines served fields on both sides of the canal, and Schöma 2731 was standing in the yard. By 1973 the works had closed, the Schöma and wagons had gone, and the Kröhnke was derelict beside the road. However in 1975 the line was in use again, the Kröhnke had now gone, and a fairly new Schöma was in the yard with some new wagons. The company have lifted the line across the canal and only the western line is still in use. They have also taken the unusual step for a peat works, of erecting a wire netting fence around the yard, but unfortunately have still not put up a name board !

600mm

4wDM	Schöma	2731/64	22PS	(1)
4wDM	Kröhnke	287/		s/s
4wDM	Schöma			

(1) to Gebruder Brill, Werk Twist.

6) Klasmann Werke GmbH., Torfwerke Annaveen

See under Klasmann, Torfwerk Gross Hesepe (22).

7) Gebhard Strenge, Versener Moor 1970, 1975

This company used to be based at Ocholt, on the DB's Emden-Oldenburg line, but their operations there were closed some years ago. This line out onto the Versener Moor is of medium size and was still active in 1975.

600mm.

4wDM	Schöma	329/	16PS	2.75t
4wDM	Gmd	4325/47	10PS	2.6t
4wDM	Schöma	3418/72	27PS	3.0t

8) Gebrüder Brill, Werk Twist 1973, 1975

There was a small elevator line here in 1973, but it had closed and was being lifted by 1975.

600mm.

4wDM	Schöma	576/41	10/12PS	
4wDM	Schöma	2731/64	22PS	(a)
4wDM	Diema♦			

(a) ex ? , Schöninghsdorf (5).

♦carries plate - "N.V. I.V.B. Zwolle-Groningen".

9) Emsmoor Dungetorf GmbH., Werk Twist 1973, 1975

A typical example of how the loco position can change from year to year. In 1973 the Jung was partly dismantled and the Kröhnke & Deutz appeared to be totally derelict, with the two Diemas 1687 & 1941 as working locos. However in 1975 the Jung & Kröhnke were both working with Diema 1941. Diema 1687 had disappeared and the Deutz & Schöma were now the derelict locos. The system has an elevator in a concrete block shed and there are rough sheds used as workers rest-&-locker rooms.

600mm.

4wDM	Kröhnke	333/			
0-4-0DM	Deutz				Der.10/75
4wDM	Schöma	876/47	10PS	2.25t	Der.10/75
4wDM	Jung	7317/			
4wDM	Diema	1687/54	14PS	2.25t	s/s
4wDM	Diema	1941/56 DS14	14PS	2.8t	

10) Torf-und Dungemittelwerk Johann Dues, Werk Twist 1975

This small elevator system is unusual in that the locos are painted blue, instead of the usual green or black. Another feature is that the wagons have double-flanged wheels.

600mm.

4wDM	Schöma	2167/58	20PS	2.8t

11) **?, Georgsdorf** 1970, 1973

This small system was very primitive, and of the unusual 700mm gauge. In 1973 the facilities consisted of only a small loco shed and a crude wagon tipping device, incorporating a pivoting section of track worked by a large lever. No locos were seen and the whole system had gone by 1973.

12) **Emsmoor Dungetorf GmbH., Werk Georgsdorf** 1970, 1973, 1975

A small mill system. The loco has lost it's bonnet & cab.

900mm.

4wDM	Diema	1586/53	10PS

13) **Torf-und Dungemittelwerk Johann Dues, Werk Georgsdorf** 1975

A small operation that had just been started at the time of the 1975 visit, the loco and first sections of track having just been delivered to the site.

600mm.

4wDM	Diema	1848/55	DS14	14PS	2.8t

14) **Gebruder Brill, Georgsdorf** 1970

In 1970 a few old wooden side tipping wagons and some 600mm gauge track sections were dumped in a small sandpit beside the road. It is not known what this equipment was used for, but it has now been preserved by a group in Neuss.

15) **Torfwerk Minke NV., Georgsdorf** 1973, 1975

A little elevator system that was derelict by 1973 and had mostly been lifted by 1975. The first was Dutch and the whole operation was a rather ramshackle affair.

600mm.

4wDM	Gmd	1144/	10/12PS	OOU 10/75

16) **Gebrüder Brill, Georgsdorfer Torfwerk** 1970, 1973, 1975

This large system has a substantial brick built mill, workshops & loco shed and appears to be quite old. According to maps the line once served fields to the west of the mill, but this has been lifted for some time and the line now runs north along the canal bank for several hundred metres to a reversing point, and then heads westwards into the fields, parallel to a minor road. One of the locos seems to be home made, but with a Diema engine & transmission.

600mm.

1	DIE ALTE EMMA	4wDM	Diema	2103/57	DS14	15PS	2.8t
2		4wDM	Diema	1310/		12PS	
3		4wDM	Diema	1670/		14PS	
4		4wDM	Diema	1991/56	DS14	14PS	2.5t
5	MINNA	4wDM	Diema	2291/59	DS14	16PS	2.8t
7		4wDM	Diema	2566/62	DS14	16PS	2.8t
8		4wDM	Home made (?)				
10		4wDM	Diema	2841/65	DS14	16PS	2.8t
11		4wDM	Windhoff	390/38			
12		4wDM	Diema	2574/62	DS14	16PS	2.8t
14		4wDM	Diema	2386/	DS20	22PS	3.0t
15		4wDM	Schöma	257/		20/24PS	3.6t
		4wDM	Schöma	1428/53		14PS	

17) **Georgsdorf** 1970, 1973, 1975

The owner of this large elevator system is unknown, but it may belong to Gebr. Brill. According to the map a line once crossed the canal to reach fields on the west bank, but now all operations are confined to the east bank, and only a few traces of the bridge remain. In 1970 the Diema was here, but by 1973 it had been replaced by the Schöma. No locos at all were found in 1975, despite a long walk onto the moor, although the system was obviously still in use. There are several lines onto the moor and the loco may have been parked on one that was not checked.

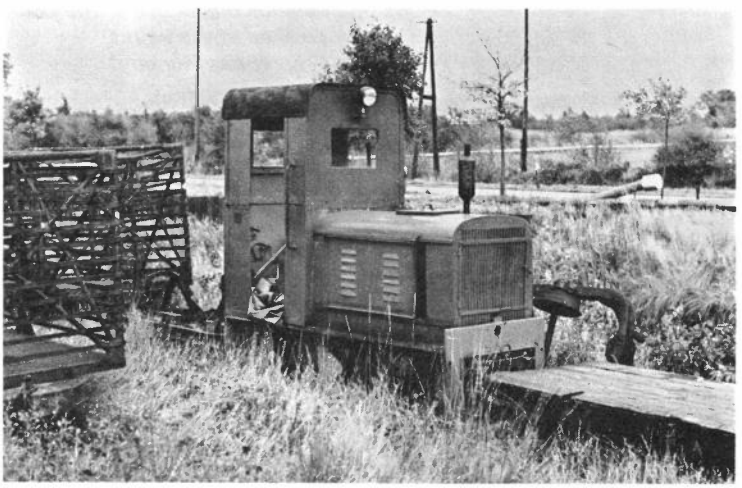
600mm.

4wDM	Diema	1720/56	15PS	s/s ?
4wDM	Schöma	2618/62	12PS	s/s ?

Gebr. Brill, Torfwerke Georsdorf (16), 600mm gauge. 4w-DM Diema 1991/56 stands outside the workshops on 13th April, 1975. Note the more modern all steel wagons in use here. (Brian Rumary).

18/19 **Aug. Mainka/ Wintershall AG., Rühlermoor oilfield** 1969

An extensive 900mm. network connects with the Klasmann Werke system (6/22). The lines exist to carry supplies used for maintenance of the oil well pumps on the oilfield, and a grid of tracks serve nearly every well-head. No locos belonging to the oil company have been seen, but in 1969 the contracting firm of Aug.Mainka had 4 locos and some rough workmens coaches in a siding near the main workshops & depot (18). The oil company are believed to be Wintershall AG., but this is not certain.



Gebr. Brill, Torfwerke Georgsdorf (16). 600mm gauge 4w-DM 15 (Schoma 257/?) on the canal bank on 13th October, 1973. (Brian Rumary).

900mm. (Aug. Mainka)

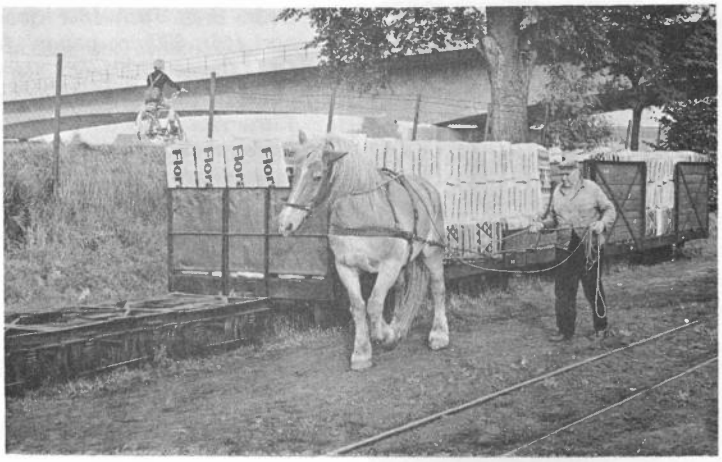
1	4wDM	Schöma
2	4wDM	Schöma
3	4wDM	Schöma
	4wDM	Schöma

20) ?, **Rühlerfeld** 1975

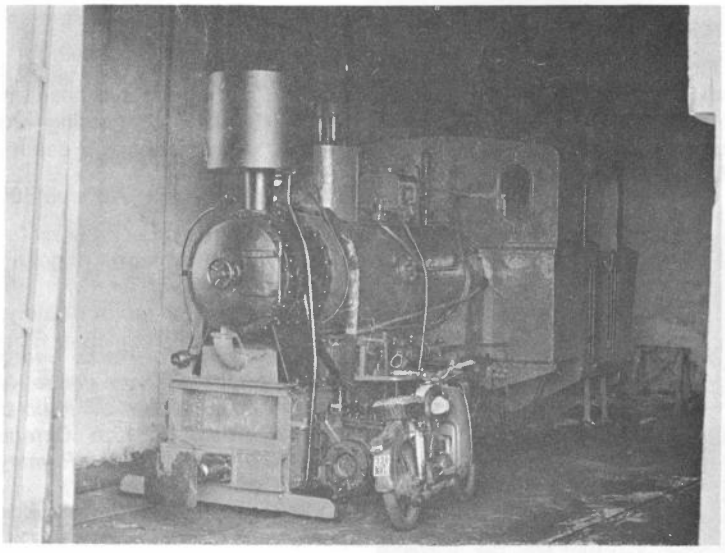
This operation was just being started in 1975 and no locos had yet been delivered. However the fact that the equipment was painted blue and the wagons had double flanged wheels suggests that it might belong to Johann Dues.

21) **Trio N.V., Rühlerfeld** 1970, 1973, 1975

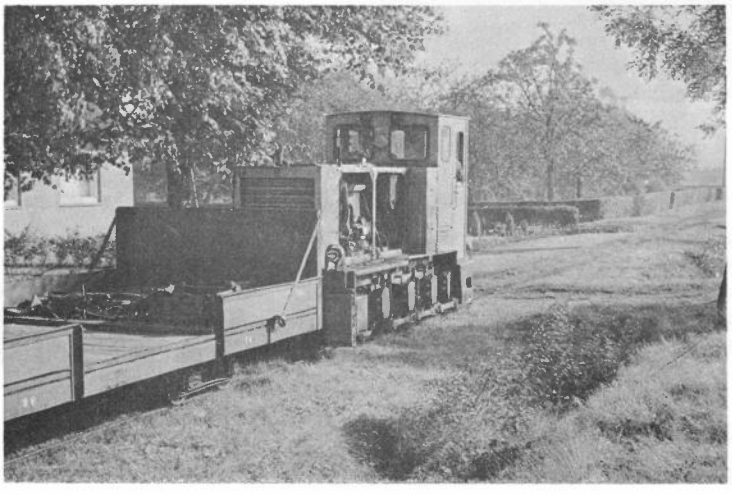
A Dutch company with a large elevator system to the unusual gauge of 700mm. All locos have "N.V. I.V.B. Zwolle-Gron ingen" plates.



Three generations of motive power at Heseper Torfwerke (22)on 8th October, 1969. Top: One horse power traction at the cableway sidings.
(Brian Rumary).



Middle: 0-6-0WT Jung 3396/22 stands out of use in the old loco shed at the works.
(Brian Rumary).



Bottom: 0-6-0DM Gmeinder 4228/46 leaves the works with a train of bogie flat trucks for Meppen. (Brian Rumery).

700mm.

4wDM	Diema	1839/55	DS14	14PS	2.8t		
4wDM	Diema	1950/56	DL6	7.5PS	1.15t		
4wDM	Diema	1990/56	DS14	14PS	2,8t		
4wDM	Diema	2004/57	DS14	14PS	2.8t	OOU	10/75

22) **Klasmann Werke AG., Heseper Torfwerke, Gross Hesepe** 1969, 1970, 1973, 1975

The largest system in this area and also the only one known to have used steam locos. For a fuller account of this company see INDUSTRIAL RAILWAY RECORD No. 32 which has an article by Peter Hoogland. The works was opened in 1913 and originally sent peat to the DR at Meppen by boats on the Sud-Nord & Haren-Rutenbrock Kanals. In 1922 a line was built to Meppen and the wagons were carried across the River Ems by an overhead cable-way. This line also served a peat-fired electric power station, the Kraftwork Ruhle (22A). This cable-way was closed a few years ago and the line beyond the Kraftwerk lifted. Kraftwerk Ruhle itself is now closed and the line to it also lifted. DB standard gauge wagons are now brought to the works by road low-loader. The works was also rebuilt and modernised about the same time. The extension to the bank of the canal at Twist has been lifted for some years, but the connection to the subsidiary Torfwerk Annaveen (6) at Schöninghsdorf is still in regular use.

Steam locos were used until 1965 and the last of these is now preserved beside the main entrance to the works. The company have a large workshops here, and these are also used to manufacture peat-cutting machinery for sale to other firms.

900mm.

9	0-6-0WT	OC	Jung	3396/22			Pres.
17	4wDM		Windhoff	363/36	40PS	4.7t	
18	4wDM		Diema	997/37	40PS	4.7t	
19	4wDM		Windhoff	830/42	25PS	4.9t	
21	4wDM		Windhoff	831/42	25PS	4.9t	
22	4wDM		Windhoff	832/42	25PS	4.9t	
23	4wDM		Diema	/43	40PS	5.3t	
24	4wDM		Diema	1251/48	40PS	4.7t	
25	4wDM		Diema	1252/48	40PS	4.7t	
26	4wDM		Diema	2140/58	90PS	11.0t	
27	4wDM		Schöma	732/43	25PS	3.75t	
28	0-6-0DH		Gmd	4228/46	130PS	16.0t	
29	0-6-0DH		Gmd	4229/46	130PS	16.0t	
30	0-6-0DH		Gmd	4330/46	130PS	16.0t	
31	4wDM		Schöma	1419/52	28PS	3.75t	
32	4wDM		Schöma	2074/57	28PS	4.0t	
33	4wDM		Diema	981/37			
34	4wDM		Diema				
35	4wDM		Windhoff	611/39			
	4wDM		Diema	2633/			(a)
	4wDM		Diema				(a)

(a) ex ? , c/75.

23) **Wasserwirtschafts Bauleitung, Gross Hesepe** 1970, 1973

This company is the local water board and appear to have been engaged on moor drainage work. The system had already closed when it was first visited in 1970 and the long connection to the Trio NV works (24) had been lifted. All that remained was a yard with several sidings full of V-skips and some wood & iron sheds & workshops, containing approximately 7 locos. By 1973 all the yard tracks, V-skips and the shed had gone, but several of the locos were dumped in the Trio yard. Part of the track is still used by Trio for their peat operations.

600mm.

0-4-0DM	Deutz	23397/39	22/24PS	(1)
0-4-0DM	Deutz			(2)
0-4-0DM	Deutz			(2)
0-4-0DM	Deutz			(2)

(1) to Trio NV., Dalumer Moor.

(2) to Trio NV., Dalumer Moor (?).

Also 3 other diesels.

24) **Trio NV., Dalumer Torf Werk** 1970, 1973, 1975

Trio are rather unusual in operating a lot of V-skips here, in additon to the more normal slat-sided "cages". This is an elevator system, but there is also a wooden workshop & loco shed in which the working locos are locked outside working hours. There was a long line southwards, parallel to the road, serving fields at Weitmarscher Twist, although in 1970 this was already out of use, and by 1973 most of it had been lifted. The company now mainly take peat from the moor to the west of the loading point. In 1973 several old Deutz locos were dumped in the yard, believed to have come from the near-by yard of Wasserwirtschafts Bauleitung (23), but these had gone by 1975.

600mm.

ADLER	0-4-0DM	Deutz				(a) s/s ?
	0-4-0DM	Deutz◆	21120/37	22/24PS		(a) s/s ?
	0-4-0DM	Deutz	23397/39	22/24PS		(b) s/s ?
	0-4-0DM	Deutz	23552/			(a) s/s ?
	4wDM	Diema	1259/47			
	4wDM	Diema	1858/55			
	4wDM	Schöma	1205/51	25PS	4.0t	Dsm. /73
	4wDM	Schöma	2206/58			

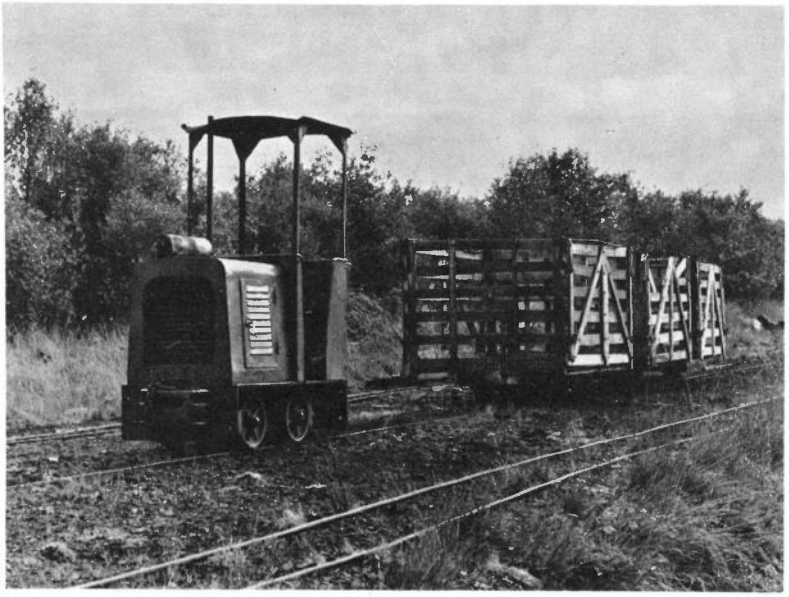
(a) ex Wasserwirtschafts Bauleitung, Gross Hesepe (?).
(b) ex Wasserwirtschafts Bauleitung, Gross Hesepe.
◆carries plate — "Klingemann & Krebs GmbH., Hannover".

25) **Gewerkschaft Elwerath, Betrieb Rühlermoor** 1970, 1973

This 900mm gauge appears to be an oil field system similar to that on Rühlermoor oilfield (18/19) and was still in use in 1970, although no locos or wagons were seen. The line ended in two sidings near the road, with a small hoist over one track. By 1973 the hoist had gone and the line was derelict. There appears once to have been a connection with the Trio NV 600mm line.

26) **Gewerkschaft Elwerath, Erdölwerke Hannover, Betrieb Dalum** 1970

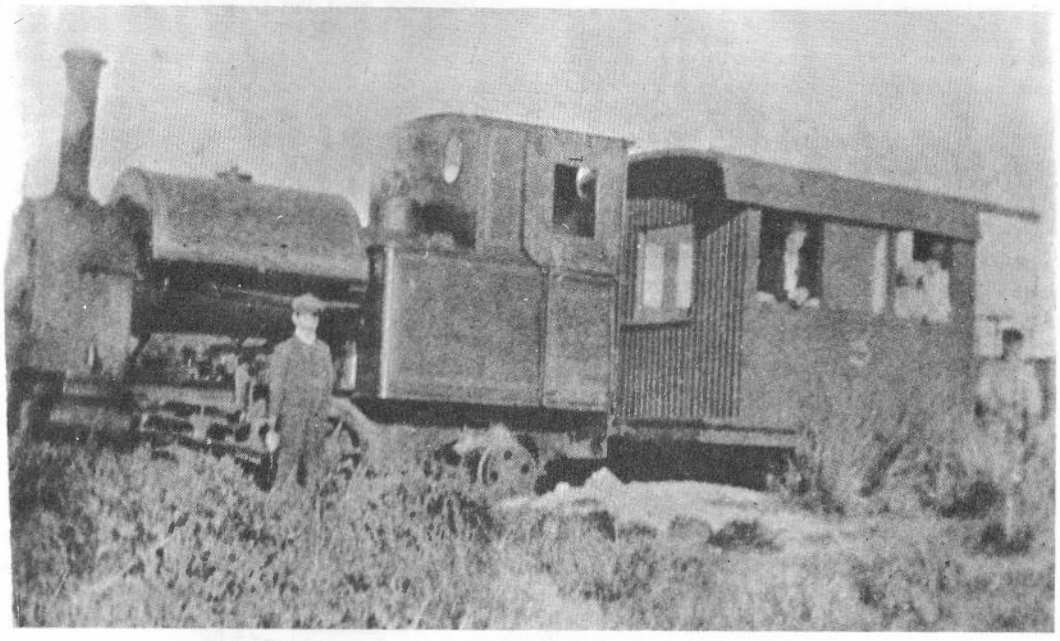
A 600mm system that seems to have performed the same functions as the network in the Rühlermoor oilfield further north (18/19). However when visited in 1970 the line had been disused for some years and the only track left was that set in the road outside the service depot in Dalum.



Unknown owner, Torfwerke Georgsdorf (17). 600mm gauge 4wDM Schöma 2618/62 stands on a loop line with some small wooden slatted peat wagons typical of those used at many small U.K. and German peat bog railways.

DARTMOOR TATTOO

E.A. Wade

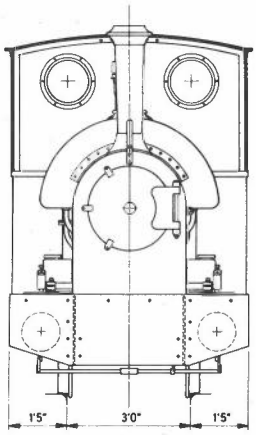


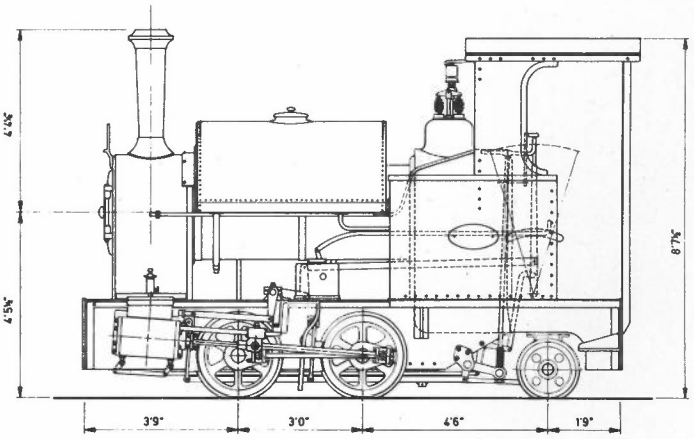
DARTMOOR posed with one of the four wheeled carriages. Although passengers were not officially carried, the three girls in the carriage, who lived in a remote house near Redlake, used the line twice a week to take them to school and home at the weekends. *(Collection E.A.Wade)*

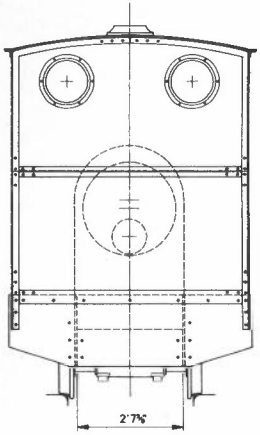
On southern Dartmoor there once existed a 3ft gauge china clay railway which is undoubtedly one of the least documented industrial lines in the country. Known as the Redlake Tramway, it commenced on the edge of nowhere and terminated right in the middle of it. It had a healthy birth on 11 September 1911 and, despite certain troubles in infancy, it reached maturity; only to suffer a sudden death in its twenty-first year and to be plunged into almost total obscurity. The only important documentation of the line since its demise in 1932 was a short article written by H G Kendall in 'The Railway Magazine' of June 1952; although tantalizingly brief references have appeared elsewhere from time to time. The tramway ran from the GWR main line between Ivybridge and Bittaford, to which it was connected by a 300ft incline and an exchange siding, some 7½ miles due north into the heart of the southern moor. Here, in one of the most desolate spots imaginable, was located the Redlake china clay works, which was the raison d'etre of the line. However, the tramway never carried the clay as it was pumped in liquid form, along a double conduit, to the settlement beds beside the GWR. The tramway merely transported men to and from the works in its three small coaches and carried coal to the pumping engine at Redlake and returned with sand. The latter was a by product of the industry, which was used as a fertilizer and in building. Twelve coal wagons and twelve sand wagons proved sufficient for the traffic. Passengers were never officially carried as, other than at its southern end, the tramway was remote from habitation.

The works which the tramway was built to serve were opened by the China Clay Corporation Ltd, who were based in Ivybridge, and they were a somewhat smaller organisation than their title might suggest. Their first steam locomotive, which was named C.A. HANSON after one of the directors, was built for them by Kerr Stuart and was an 0-4-2 side tank of their 'Waterloo' class (1228 of 1911). With 9½" x 15" cylinders, this was a large and powerful locomotive for such a minor line and is said to have proved most reliable. Indeed, most of the locos of this class were built to standard gauge with inside frames and 1228 is the only narrow gauge, outside framed example known to the writer. She was dispatched from the California Works on 13 September 1911 — two days after the official opening of the tramway !

However, this article is really concerned with the second locomotive on the line. This was another Kerr Stuart 0-4-2, but this time it was a saddle tank of the much more common 'Tattoo' class. She carried the works number



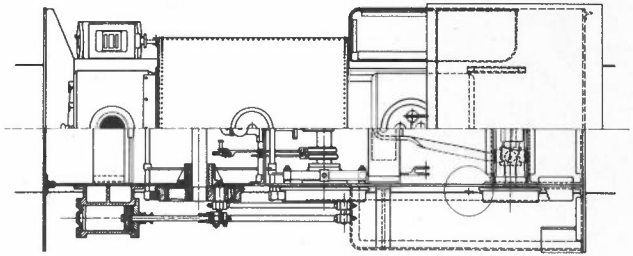




NOTES

Reproduced from maker's drawings and photographic evidence.

Buffers and couplings omitted owing to a lack of evidence.



Kerr Stuart & Co.
Works No. - 1146
0-4-2ST Built 1911

'DARTMOOR' of the Redlake Tramway
Cylinders - 7" bore x 12" stroke Gauge - 3'0"
Wheel diameters - driving 2'0" trailing 1'4½"
Weight in working order - 8tons 5cwt approx
Boiler pressure - 160 p.s.i.
Tank capacity - 140 gallons

1146 and left the works on 27 January 1912 bearing the name DARTMOOR. The reason for the earlier works number is presumably that she was one of a batch built for stock (a favourite pastime of Kerr Stuart's) and lay in a half completed state until ordered by the tramway. She must have been ordered soon after the opening of the tramway and the only Kerr Stuart drawing of her which is extant is dated 20 December 1911 (No 20082). This drawing shows the details of her fully enclosed cab, which was fitted to counteract the severe weather conditions which prevail on Dartmoor, and was, in all probability, the only drawing produced specifically for her as she was otherwise a perfectly standard 'Tattoo'. The traffic on the line could hardly have justified two locomotives and it seems probable that she was intended as a shunting and standby engine; that is indeed how she was used. The 'Tattoo' class, which normally had completely open cabs and a diminutive weather screen, were produced in large numbers from 1904. The first two engines of the class were works number 856 of 1904, a 2ft gauge locomotive which was built for a company in Lancashire but went instead to Somerset; and 859 of 1904 for the Dinas Silica Brick Company of Penwyllt, built to a gauge of 2'3" and named GWENDOLEN. (The writer would appreciate information and photographs of the latter). The majority of engines of this class were built to such narrow gauges and were consequently fitted with outside frames in order that the firebox might fit between them. However, as 1146 was of 3ft gauge, this problem did not arise and she was thus built with inside frames. Early engines of the class had inside Stephenson's valve gear and DARTMOOR was no exception. It was not until the Great War that Kerr Stuart began fitting their small standard classes of locomotives with the much simpler outside Hackworth valve gear. The first engine so fitted was 'Wren' class 2458 of 1915 and the first 'Tattoo' was 2395 which, despite its earlier number, did not leave the works until 1917. The latter engine was, of course, STANHOPE of Penrhyn quarry fame.

Only two photographs of 1146 are known to the writer (there was no works photograph) and they are both of rather poor quality; one being taken from a considerable distance. The name, which would undoubtedly have been carried on the saddle tank as the works plate was on the bunker, is not visible on the photographs. Either it was originally painted on and had worn off (which is unlikely as the lining is still visible), or it was never carried, or she was named after the photographs had been taken. The most likely explanation is that the name was carried on a cast brass plate, as was the case with the other engines on the line, and had been removed before the taking of the photographs. One may discern the mark left by the maker's plate which had also been removed. It is also apparent from the photographs that the special cab with which she was fitted by the makers was still insufficient to protect the crew from the worst excesses of the Dartmoor climate as the left hand door has been blocked in but for a small rectangular opening. She is said to have been most unpopular with her crew as she had the habit of derailing fairly regularly but this was probably due to poorly maintained trackwork.

DARTMOOR'S dimensions were as follows:

Outside cylinders	7" bore x 12" stroke	Working pressure	160 psi
Driving wheels	2'0" diameter	Tractive effort (at 89%	
Trailing wheels	1'4½" diameter	working pressure)	3,485 lbs
Fixed wheelbase	3 feet 0 inches	Weight in working	
Total wheelbase	7 feet 6 inches	order	8 tons 10 cwt
Tank capacity	140 gallons	Length	13 feet 0 inches
Bunker capacity	27½ cubic feet	Width	5 feet 10 inches
Heating surface (tubes)	89.5 square feet	Height	8 feet 10 inches
Heating surface (total)	109 square feet	Boiler length	5 feet 3 inches
Grate area	4 square feet	Boiler diameter	2 feet 0 inches

Kerr Stuart usually calculated tractive efforts at 89% boiler pressure although 75% is the more common figure. Tractive effort at 75% is 2,940 lbs.

In 1921 the company, which had suffered from a decrease in traffic during the Great War, was purchased by the principle shareholder; Sir Harry Mallaby Deeley, and renamed the Ivybridge China Clay Company. C.A. HANSON was scrapped in the same year, as she was in need of major repairs, and for seven years DARTMOOR worked the line alone. In 1928 she was joined by an Atkinson-Walker Class A.3 rail tractor, similar to that which ran on the Clogher Valley Railway, and both survived until the closure of the works and the tramway in 1932. DARTMOOR appears to have been scrapped on site while the Atkinson-Walker was sold, in 1933, to a firm of scrap merchants and machinery dealers in Sheffield. They probably scrapped her too but that is another story.

Mr Wade is working on a full history of the Redlake Tramway and the neighbouring Zeal Tor Tramway, to be published in book form, and would appreciate any information and/or photographs. He will be pleased to cover any expenses which may be incurred.

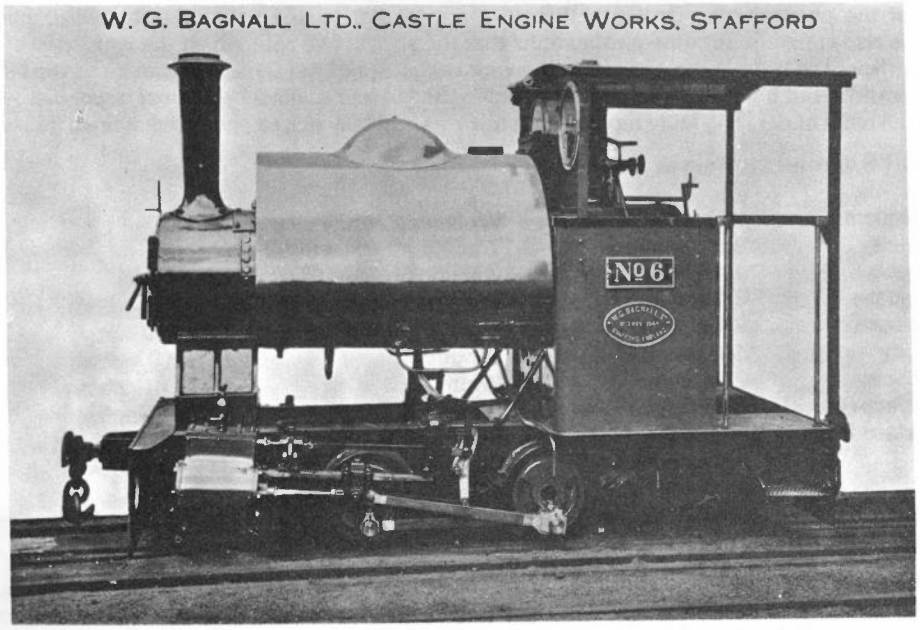
TURKISH DELIGHT

Allan C Baker

On the 3rd May 1946 the British Geco Engineering Co. Ltd, a South London based firm of engineering agents, ordered ten 60 cm gauge (1'11⅝") locomotives from W G Bagnall Ltd, for use in Turkey. They were destined to be the smallest steam locomotives built in this country for industrial use since the War, indeed they were small by any standards.

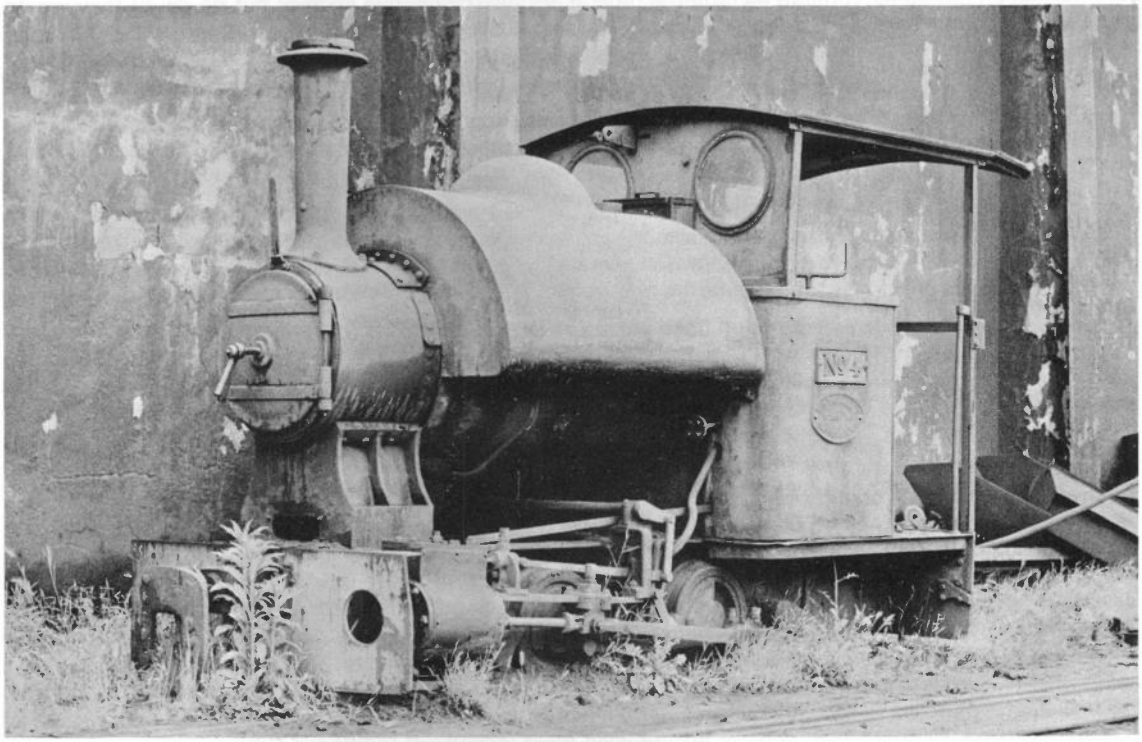
Intended, it was stated, for use at State owned collieries in Turkey, and until very recently that was all that was known about their proposed use. They passed into obscurity after leaving these shores so far as Western enthusiasts were concerned.

The design followed well established Castle Engine Works practice being of their standard narrow gauge saddle tank type. This had first been introduced at Stafford in 1893 and considerable numbers had been built since that date with but minor modifications and alterations. These ten locomotives however, had one major difference which had only previously been used on a very few occasions. They had a normal locomotive type boiler and firebox. A notable characteristic of the basic design was the use of a circular, marine type firebox, this being referred to at Bagnalls as the "Bull-Head" type. For reasons which will be clear later and presumably at the insistence of either agent or customer, this arrangement was discarded in this case in favour of the normal type. Because of the narrow distance between the inside frames this firebox could not be accommodated in its normal position between them, hence the whole boiler was perched on top of the frames and tended to look, as indeed it was, rather high. A steam dome was fitted in the normal place and, surprising for the date, two 1¼" Ramsbottom safety valves were mounted on the firebox and in the cab. A handbrake only was fitted and this actuated one block on each wheel, the classic Bagnall-Price valve gear completed the picture. This gear had been introduced by Bagnalls as long ago as 1903 and was, in fact, a re-arrangement of the Walschaerts type. It was much favoured by Bagnalls for their narrow gauge locomotives and special designs.



Maker's official photograph of Bagnall 2865/48. *(Collection Allan C. Baker).*

One special requirement of these locomotives requested in this specification, which, no-doubt, led to the decision to use a conventional loco-type firebox, was the type of fuel that they were to burn. This was to be of a very low grade being comprised of equal parts of Washed and Tailings coal. 60% of this was to be in the form of particles between 0 and 0.1 mm in size, and the remaining 40% between 1 and 10 mm in size, in common language dust ! The average ash content was to be 25%. To accommodate this a grate, with an area of only 2.6 sq ft, fitted with special firebars was used and a mild steel ashpan of the self dumping type was mounted underneath it. This was worked by a handle on the footplate and a further requirement of the specification was



0-4-0ST No.4 (WB2863/1948) out of use at E.K.I. Uzulmez Colliery, near Zonguldak on 25th May. 1976. (Allan C. Baker).

that this should be capable of being discharged whilst the locomotive was in motion. Strange this, one would have thought that this would be the last thing one would have wanted to do with ones ash pan, otherwise why have one ? The locomotives were obviously intended to burn any old rubbish that was lying about the colliery yards etc.

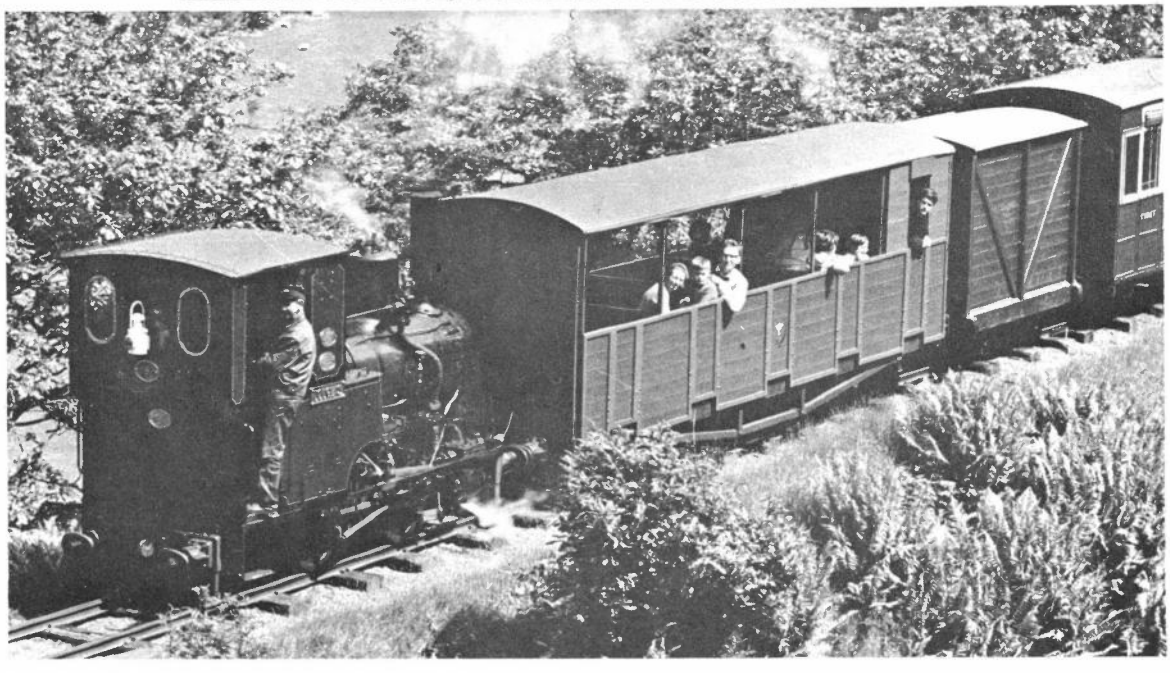
The firebox was copper and the tubes steel, the haulage capacity claimed being 85 tons on the level, not bad with but 4½" diameter cylinders. People build bigger models these days ! As Bagnalls were very busy with loco work at this time, in the main a back-log of war time orders, these ten locomotives were erected, side by side, in the old Wagon Shop. Because of a drop off in general rolling stock orders since the War this had actually become the Frame Shop. Costing £1115 each they were delivered free-on-board and shipped fully erected in large crates, suitably marked: "This Way Up" ! All left the Castle Engine Works, carrying works numbers 2860-9 and running numbers 1-10 consecutively, in 1948. No 2865, running number 6, was duly photographed before departure.

Only within the last year or so has anything come to light of what these locomotives did or indeed exactly where they did it. However as almost all the coal in Turkey is in the Zonguldak area, on the Western end of the Black Sea coast, it was always assumed that that was where they went. However recently two have been discovered, both belonging to Eregeli Komurlerei Isletmesi (E K I), a firm (State Owned ?) operating coal mines in that area. One, No.4, WB 2865/1948, is lying out of use at Uzulmez Colliery, some 2-3 miles inland from Zonguldak, the other is semi-preserved at the nearby Uzulmez Ikohulu School. The former was stated in May of this year to have been disused since 1957 but did not appear to have been so for such a long period. Apart from the left hand injector and feed clack it was complete, if one excludes the whistle. Some adjacent coke ovens were stated at the same time to have only been disused for about one year. The second locomotive had been moved from the same colliery to the school as a sort of attraction in 1965. It originally ran on an oval track of some 800' in length. Operations commenced thus on the 23rd April 1965, according to local sources, (Turkish Childrens Day) but only lasted 4 days ! The only track remaining was that the loco stood on, after having children playing on it in the intervening 10 years, I leave readers to their own imagination as to its present condition ! She had acquired the name SIRAM painted on her cab sides but lacked builders plates, however the running number remained and her identity was confirmed by numbers stamped on her motion parts.

No information has so far come to light on the other 8 of these diminutive engines but no doubt they would have all worked somewhere in the Zonguldak area. Incidentally E K I also operate several Bagnalls 0-6-0 pannier tanks as Uzulmez and other nearby collieries, 9 of which were delivered in the period 1942-7, all metre gauge. Several of these are still known to be working and one, at least, has been converted to standard gauge.

What intrepid readers are going to brave the wilds of the Zonguldak area of Turkey to find those elusive 8 locomotives ?

Cylinders	4 ½" x 7 ½"
Wheel Diameter	1' 3 ¼"
Wheelbase	2'6"
Tank Capacity	70 galls.
Fuel Capacity	4 cub.ft. (2 cwt)
Heating Surface, tubes	57 sq.ft.
" " firebox	11.5 sq.ft.
" " Total	68.5 sq.ft.
Grate Area	2.6 sq.ft.
Working pressure	170 psi
Tractive Effort at 85% Working pressure	1,439 lbs
Weight empty	3 tons 10 cwt
Weight in working order	4 tons 5 cwt
Boiler feed	2 No 3 m/m injectors
Overall length (over buffer beams)	9'3 ⅜"
Overall height	6'6 ¾"
Overall width	4'2"
Length of boiler barrel	4'0"
Inside diameter of boiler barrel	1'9"
Length of firebox	2'3"
Height, rail level to centre of boiler	3'6"



DOUGLAS heads a train on the T.R. in 1967. The first vehicle is the rebuilt Stanton coach, now T.R. No.16. Note the absence of door and grab handles and the introduction of a guard's compartment.

(Talyllyn Railway)

THE STANTON COACH

A.S.R. Parsons

Many interesting items of rolling stock have been discovered in recent years, and "The Stanton Coach" was a unique survivor from the days when 3ft gauge railways were an important part of reservoir construction projects. These railways rarely had proper passenger coaches, home made four wheelers or converted street tramway cars usually sufficing for the "Paddy Mail" carrying workmen to and from the site.

The coach carried the inscription "Kerr Stuart & Co., London" on the floor treads, but is alleged to have been built by either the Falcon Engine & Car Works, Loughborough, or Metropolitan Railway Carriage & Wagon Co., Saltley. Kerr Stuart & Co. acted as agents for railway equipment from 1881 to 1893, prior to establishing their own works at Stoke-on-Trent, and Falcon was a frequent supplier during this period.

There are reasons for believing that this coach was originally used during construction of Lake Vyrnwy for Liverpool Corporation because on Wednesday 23rd July 1890, on completion of the contract, the plant and machinery was put up for auction at Llanfyllin. The sale continued on the following day at Lake Vyrnwy. The sale catalogue included "LOT 374. Tramway carriage built of wood and iron, covered with canvas roofing, and fitted with powerful double acting brake on four cast steel axles and wheels 21in diameter. 3ft gauge. Standing in the carriage shed at Lake Vyrnwy." No further particulars were given, but the description tallies almost exactly with a coach obtained in 1920 by the Abertillery and District Water Board.

The Board constructed a 3ft gauge railway from Llanvihangel Crucorney station, on the Great Western Railway north of Abergavenny, a distance of some eleven miles through the Grwyne Fawr valley to Blaen-y-cwm and the reservoir site. This railway operated from 1920 to 1928 and its history has recently been told by the Rev. D.A. Tipper in *"Steam & Stone in the Black Mountains"*. Their bogie saloon coach, described as the tramway type, was about 20ft long overall with a saloon about 15ft long x 6ft 6in wide. The saloon had six drop lights on each side, the end balconies were ornamented by simple iron railings, with handles operating the brakes on each bogie. The roof was of wood with canvas covering weatherproofed by white lead paint. The bogies had 16in diameter wheels, and were somewhat unusual in having three coil springs to each axlebox. One pair of springs supported the keeper plate beneath the axlebox, and the third rested on top.

Before entering service with the Abertillery & District Water Board the coach received heavy repairs and was fitted (or refitted) with glass windows. It was known as "The Glass Coach" or "Saloon", and being completely enclosed was a non-smoking coach normally reserved for ladies travelling from the workmens camps on shopping trips. It contrasted markedly with the crude semi-open coaches used by the workmen, but despite its length and the nature of the line, which included two short gradients as steep as 1 in 9, there is no record of it derailing. However, it must be admitted that it was only used occasionally.

On completion of the Grwyne Fawr reservoir in May 1928 the Water Board valued the coach at £5 and were no doubt delighted to accept £10 offered by the contractor, Lehane, McKenzie & Shand. This company constructed a number of reservoirs in the Pennine hills from 1923 to 1936, including Fernilee for Stockport Corporation, Brownhill at Holmbridge for Batley Corporation, and Gorple for Halifax Corporation. So the coach travelled north to the contractors yard at Darley Dale in Derbyshire.

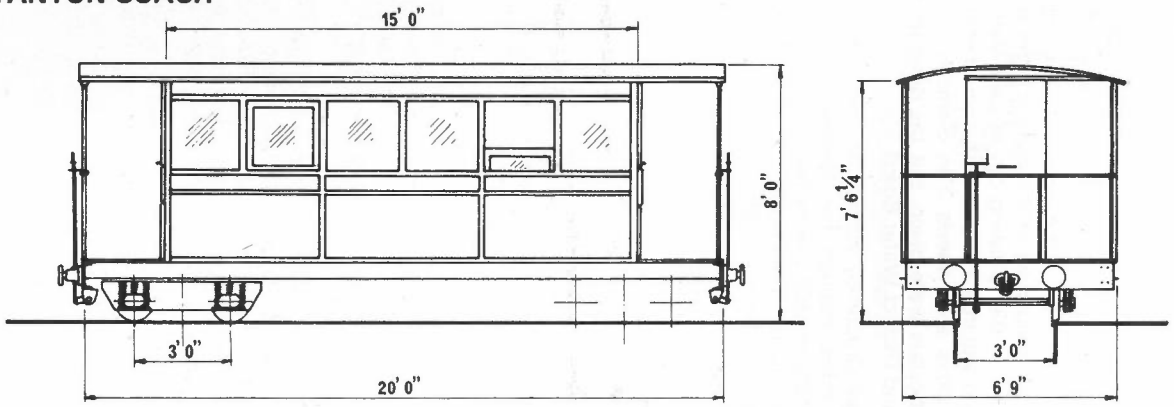
There was already a complete paddy train at Gorple reservoir in late 1928, and no need for the coach at either Fernilee or Brownhill, so there is every reason to think that it was surplus to requirements very soon after arrival in Darley Dale. It was therefore sold to Boden (Stone) Ltd., Rowsley, and transported complete with its bogies to their Stanton Moor Quarry, Stanton in Peak, about 1½ miles up the road from the contractors yard. Boden used the coach as a store at the quarry, where it remained for nearly thirty years.

In 1957 the Talyllyn Railway Preservation Society were seeking additional passenger coaches, acquired the coach from Boden and transported it to Tywyn. Transport cost about £80 — ten times the purchase price! On arrival "Bodger's Corner" examined the coach and condemned it as fit only for scrap. It was certainly in a pretty delapidated state, and being 3ft gauge it is hardly surprising that the Talylln did not consider the cost of complete reconstruction justified. So, in late 1958, the saloon was demolished and only the frame, bogies and sundry other parts retained.

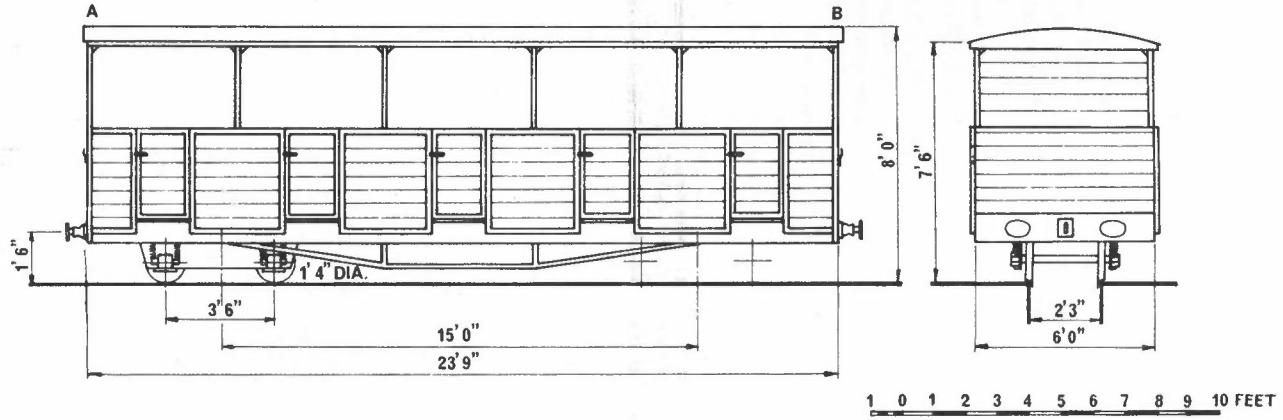
The frame was lengthened and fitted with underslung bracing. The wheels and axles were altered to 2ft 3in gauge and fitted into new bogie frames. A new wooden body with steel roof supports was constructed to the same design as three existing vehicles, having five semi-open compartments each seating eight passengers. In common with other Talyllyn coaches, doors were fitted on one side only.

No.16, popularly known as "The Stanton Coach" entered service in 1961, but was found to be very stiff —

THE STANTON COACH



T.R. COACH NO. 16

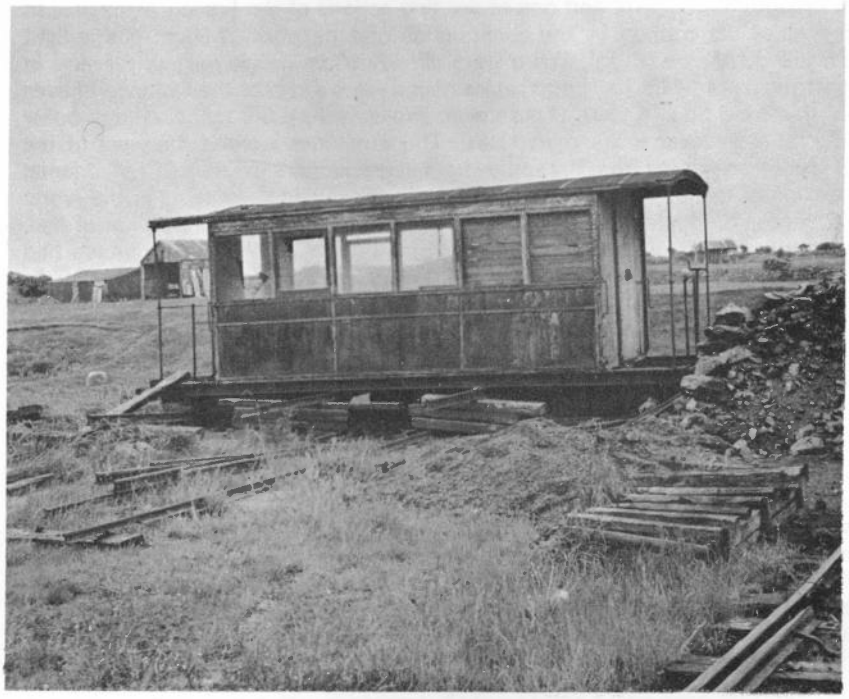


MS 2/77

The drawings were prepared from overall dimensions and photographs, and are not guaranteed accurate in every detail. The Stanton coach is shown in the condition it first arrived at Tywyn, and T.R. No.16 as first rebuilt and operated in 1961. End marked A (nearest Abergynolwyn) is closed above the waistline. The flat steel roof formers, shown in the end view, are fitted at each end and between the intermediate roof support pillars. The brake wheel in the compartment nearest Abergynolwyn is omitted.

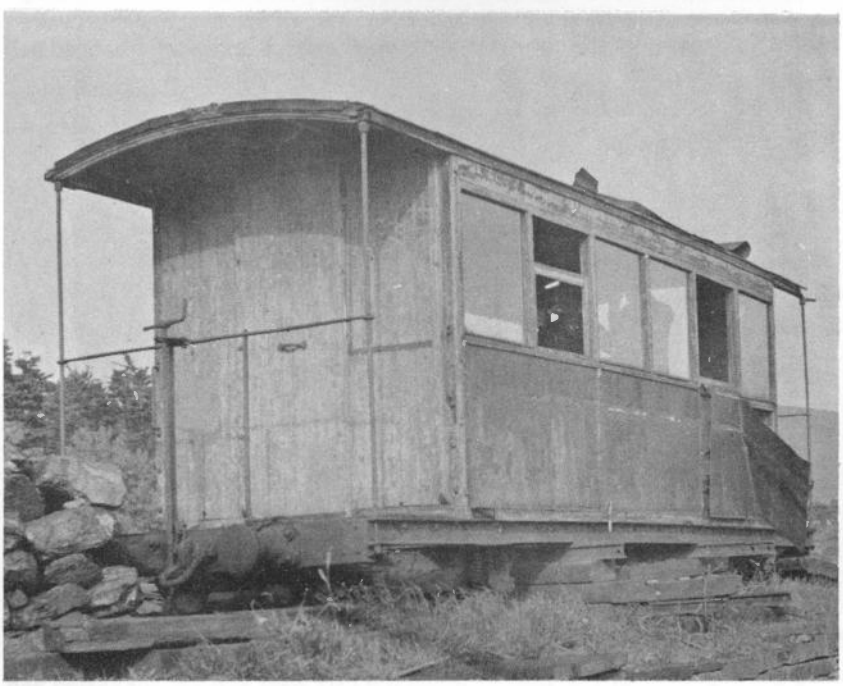
it appeared to be a dead weight on trains — and was rebuilt the following year with new tyre profiles and an enclosed guards compartment with hand brake at the Abergynolwyn end. It has since continued to give satisfactory service, and is now very similar in appearance to coach No. 10.

Many people have helped in the preparation of this article and I would particularly thank M. Sheppard, Rev. D.A. Tipper, J.L.H. Bate, A.J. Wilson, J.J. Davis who kindly provided illustrations, and M. Swift who prepared the drawings.



The Stanton Coach at Tywyn Wharf on 25th May 1958 after arrival from Derbyshire.

(J.J. Davis)



The Stanton Coach at Tywn Wharf on 25th May 1958 after arrival from Derbyshire.

(J.J. Davis)

MOROCCO BOUND RAILCARS

Rodney Weaver

No, not a presentation set, rather the opposite in fact as many Moroccans must have regarded the extension of French military power within their country as anything but a presentation. Morocco became a French protectorate by the Treaty of Fez on 30th March 1912 and one of the first actions of the French Army was to improve the internal communications of the country by the construction of a network of 60cm gauge light railways, the Chemins de Fer Militaire du Maroc (CFM). There were already 60cm gauge military railways in Morocco bearing this title, the construction of which had begun at least nine years earlier as the first locomotives specifically designed for the CFM had been built in 1903. (These were Weidknecht 4-6-0 tanks, a large-boiler version of the standard Decauville 0-6-0 tank for military purposes). The early lines were in the west of the country and became the CFM Occidental as distinct from the somewhat later, and more extensive CFM Oriental in the eastern part. The real expansion of the CFM into one of the largest 60cm gauge systems in the world began in 1912, however. By 1925 the system had achieved its maximum effect with just over 1600km of line, divided up into a number of separate systems and including at least one international main line which had originally been laid with 9kg portable track. The military importance of the system was waning however, while its commercial importance was growing and it was decided to convert the more heavily used sections to standard gauge. Conversion proceeded quite rapidly, so that although the last bit of 60cm track was laid as late as 1930 the last 60cm gauge train ran in 1936. Detailed information about the CFM is hard to come by and as far as I know no proper history of the system has ever been published.

British contributions to the CFM were limited to 46 Drewry railcars delivered between 1915 and 1921. All these were of the same basic design and, like all Drewry products of the 1911-30 period, were designed and built at the Shobnall Road Works of Baguley Cars Ltd, Burton on Trent. They were twelve-seat railcars on Baguley's standard B-type chassis, powered by a four-cylinder Baguley petrol engine of 90mm bore x 130mm stroke rated at 20hp driving through a three-speed gearbox onto one axle of the car. Dimensions varied between batches, but those of the first car built for Morocco may be taken as typical for the 60cm version of the B-type car. This car, No 616 of 1915, weighed 1 ton 17 cwt 1 qtr (1894kg) in working order; the frame was 16ft (4.9m) long with 24in (600mm) wheels on a wheelbase of 7ft (2.1m). The engine of this car when tested developed 21.8bhp continuously at 1000rpm and the gear ratios were chosen to give speeds of 6.5, 14.3 and 23.3mph (10.4; 22.9; 37.3 kph) at 1000rpm; maximum speed would be about 35mph (56kph).

The standard body fitted to these cars was open above waist height but provided with a roof and windscreens at both ends, canvas screens being available to close the sides in bad weather. Two of the cars, however, were provided with a fully enclosed centre compartment for the conveyance of senior officers and were described as "Limousines".

The works numbers and delivery points of the Moroccan railcars was as follows:

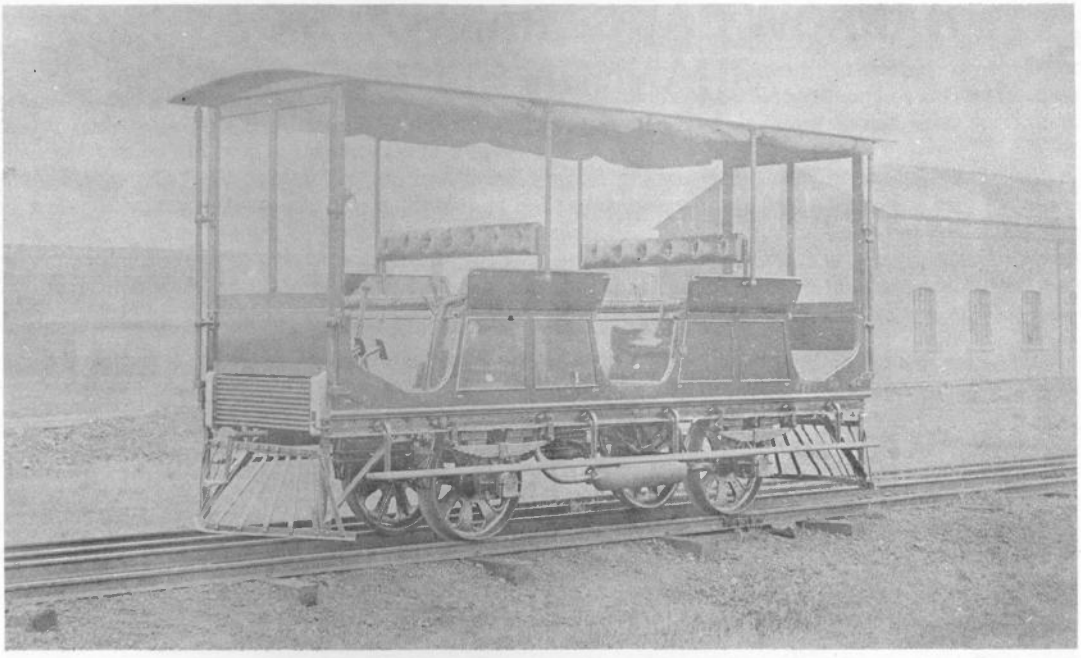
Baguley/Drewry works No.	Date	Recorded destination	
616 - 8	1915	Kenitra	
813 - 20	1916	CFM Occidental	Nos 1 - 8
861 - 70	1916	CFM Occidental	Nos 9 - 18
881/2	1916	CFM Occidental	Nos 19, 20 (The Limousines).
952/3	1917	Casablanca	
954 - 8	1918	CFM	Nos 1-5
959/60	1918	CF Marnia - Taourirt	Nos 2,3.
981/2	1918	CF Marnia - Taourirt	Nos 4,5.
1042	1919	CF Marnia - Taourirt	
1113 - 5	1919	CF Marnia - Taourirt	
1151 - 4	1920	CFM Occidental	Nos 1 - 4
1215 - 8	1921	CFM	Nos 1 - 4

Numbers allocated in the following order relative to Baguley series :

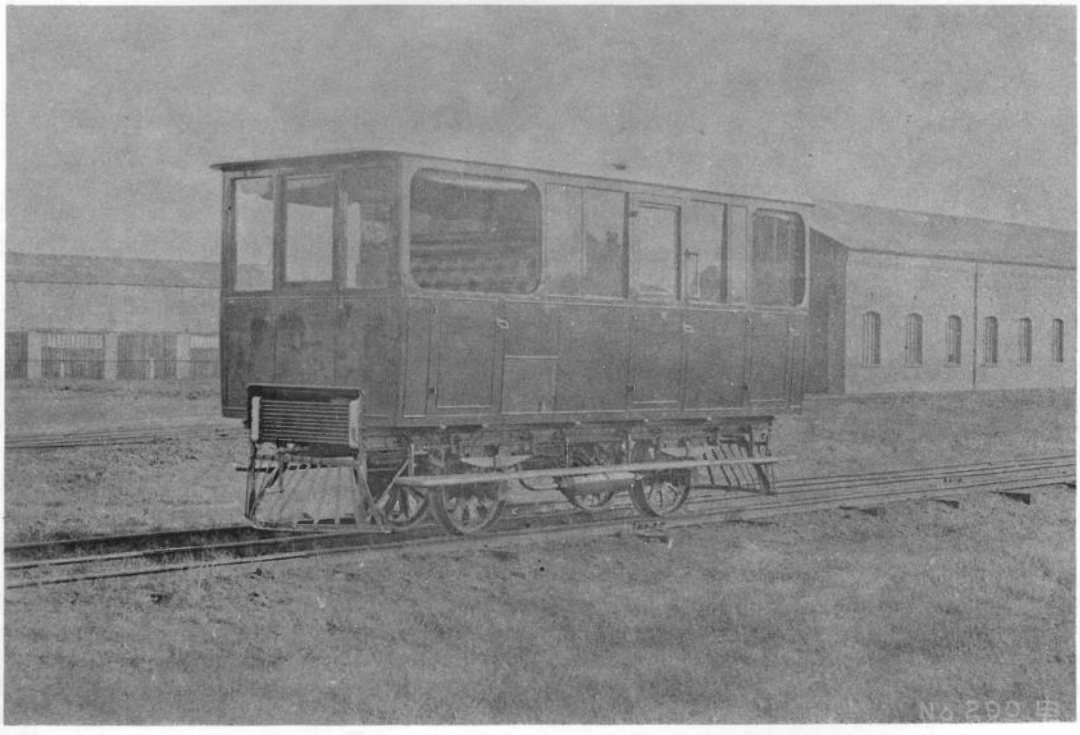
813 - 20: 2, 4, 1, 6, 3, 5, 8, 7.

861 - 70: 9, 11, 13, 10, 14, 18, 12, 15, 16, 17.

The random allocation of numbers is explained by the order in which the cars were actually completed and despatched.



20 H.P. car supplied to the French Government for the 60cm gauge military railways in Morocco. *(Collection Rodney Weaver).*

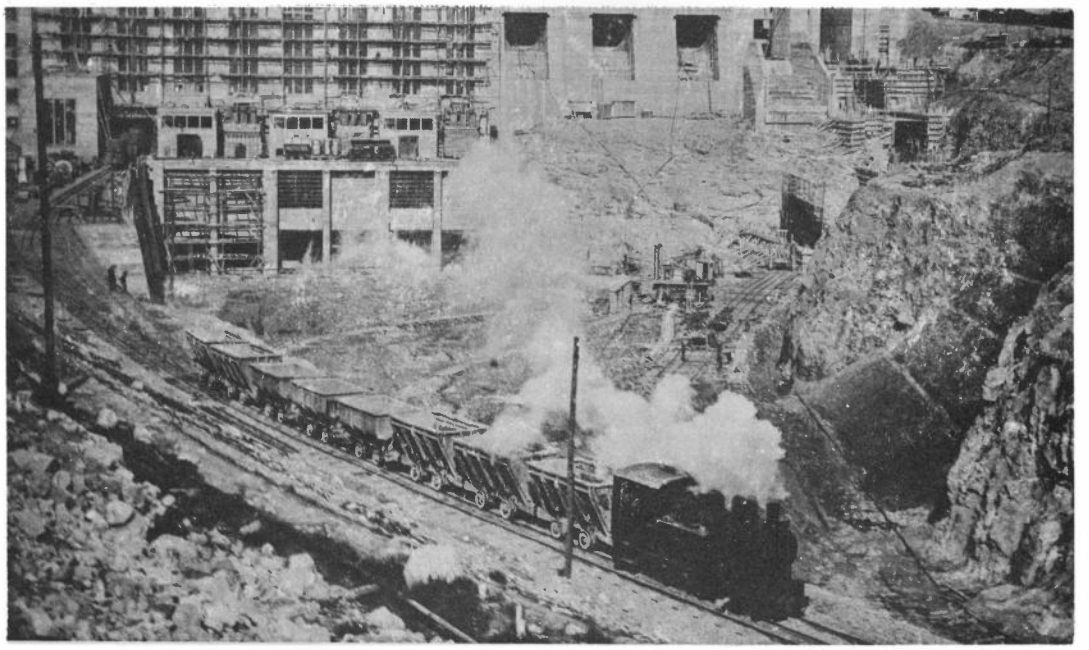


20 H.P. Limousine car for the French Military Railways. *(Collection Rodney Weaver).*

NARROW GAUGE RAILWAYS OF THE SHANNON SCHEME

Walter McGrath

1977 is the golden jubilee of the Irish Electricity Supply Board and the building of the "Shannon Scheme" power project was the biggest industrial undertaking seen in Ireland up to then. Narrow gauge railways were extensively used by the contractor's, Siemens Bauunion, and we have reprinted the article on these lines that appeared in Walter McGrath's long out of print book, "Some Industrial Railways of Ireland", together with some additional notes on the locos used, by Martin Murray. Needless to say, any further information, or on the Banagher 600mm gauge lines, would be most welcome. - AN.



The most gigantic industrial undertaking carried out in modern Ireland, and the first major achievement of the Government after the establishment of the Irish Free State was the harnessing of the Shannon (the longest river in Ireland and Britain) to supply electric power to the greater part of the country. It changed the face of the entire countryside around Ardnacrusha, north of Limerick city.

The Irish Government's contract for the work (which lasted from 1925 to 1930) was awarded to the German firm of Siemens Schuckertwerke who, in turn entrusted all civil engineering to the sister company of Siemens Bauunion. The latter were entirely responsible for the extensive railway network which came into existence and which was to require the services of 106 steam locomotives and 3,000 wagons.

The Shannon rises in the Cavan-Leitrim district and in its long journey to the sea at Limerick it passes through three large lakes, Lough Allen, Lough Ree and Lough Derg, which have a total storage capacity of 827 million cubic metres. The main works were below Lough Derg and consisted of the blasting of a lengthy canal; huge jobs of embanking and dredging; massive earth works between Killaloe and O'Briensbridge, Co. Clare; the construction of a head-race twelve kilometres long; the building of power houses and ancillary buildings at Ardnacrusha, etc.

One of the first steps to be performed towards the equipment of the site consisted in the conveyance of the machinery from Germany to Ireland, Emden and Hamburg being the ports of departure, and Limerick of arrival. Within the first few months of the contract, 87 steamers loaded with machinery, including locomotives and wagons, had arrived, and thereafter a full steamer-load came every fortnight or three weeks. (One of them, in 1926, was lost at sea without trace or tidings.)

A short distance north of Limerick, and formerly the first station on the railway to Ennis, is the suburb of Longpavement, which place played a vital role in the Shannon Scheme railway story, for it was in this locality, on a piece of vacant ground near Thomondgate, that the narrow gauge transport line started. Limerick docks are not connected with the Irish railway system, so to this "terminus" near Longpavement the materials and equipment had to be hauled by road and then mounted on wagons. The motor lorries used for the road haulage were the largest seen in Limerick up to that time.

The line, double track for part of the way, ran along a road for a short distance and then crossed the standard gauge Limerick-Ennis line on the level. The crossing was protected by a stop arm on each side, this signal showing "road clear" to the industrial railway except when a standard gauge train was due. Beyond this crossing the line took to the fields, skirted the tail-race works and continued on through Co. Clare to O'Briensbridge, eight miles away. An extensive network of branch lines ran to the various huge excavators and dredgers at work throughout the countryside.

This railway was to a gauge of 900 millimetres (a little under 2'-11½") and ancillary to it was a web of 600 millimetre (1'-11⅝") gauge lines of light pre-fabricated track capable of being moved about as the work progressed.

During the five years of the job a total of 93 locomotives worked on the 900 mm. track and 13 on the 600 mm. lines. Details of these and their builders are best given in tabulated form as follows:-

Number of Engines	Makers	Date	H.P.	Cylinders	Gauge
3	Krauss	1920	160	320 x 400	900
16	Henschel	1925	160	310 x 430	900
16	Henschel	1925	200	340 x 430	900
18	Borsig	1925	220	340 x 400	900
19	Hanomag	1925	200	330 x 430	900
21	Rheinische Metalwaaren	1925	220	350 x 350	900
2	Henschel	1919	40	185 x 250	600
10	Linke Hoffmann	1923	50	215 x 300	600
1	A. Jung	1920	40	190 x 300	600

All the engines were 0-4-0 tanks. At first they had stove-pipe chimneys; later many of them were fitted with spark arresters. A large dome and sand box were on the boiler. Others had low, squat chimneys; one of those was photographed in 1927 by the late Mr. J.M. Robbins, first secretary of the Irish Railway Record Society, and the illustration appeared in THE RAILWAY MAGAZINE in May, 1940. Only minor repairs were carried out to the locomotives locally; for heavier repairs and overhauls they were returned to Germany.

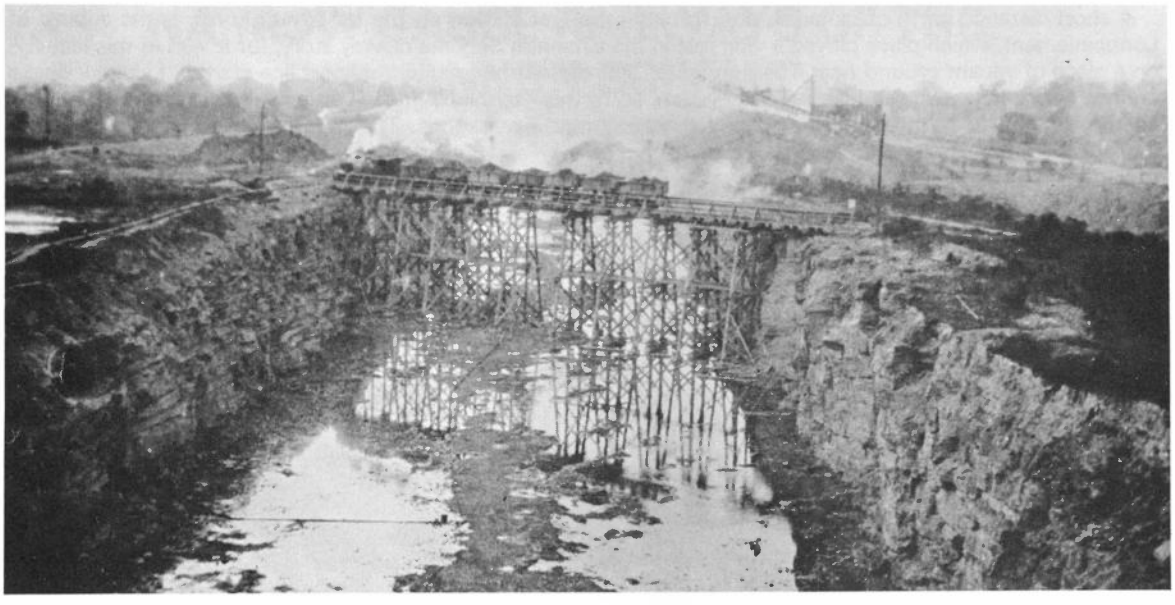
A short length of electric railway also operated for a time (900 mm. gauge) and was powered by four locomotives with two 500 volt d.c. motors (44 kw.)

When the contract was nearing completion a standard gauge G.S.R. branch line was built from Longpavement to Ardnacrusha Power House. This brought some sections of mixed gauge track into existence (see photograph), one rail being common to both 900mm. and 5'-3". This branch is still in existence.

The Shannon Scheme attracted international interest and when it was finished the Government marked the occasion by issuing a special commemorative postage stamp (only the second in the history of the state).

The project formed the subject of a lecture to the Institution of Civil Engineers of Ireland by Dr. Georg Garbotz of Dublin on January 10, 1927, and it is recorded in Volume 53 (1926-27) of the Transactions of the Institution. The lecture dealt in detail with the plant, machinery and rolling stock on the site and among the interesting facts revealed in it is that the tipping wagons were of a special, strong, iron construction and "had already proved nearly indestructible at the Schwarzenbach Dam." It dealt primarily with the main activities around Ardnacrusha, Killaloe, etc., but it also recalled what is now often forgotten, that there were fairly extensive works, too, north of Lough Derg up by Banagher and Meelick in Co. Offaly.

An interesting fact is that the Shannon Scheme railways and locomotives figured on many commercial postcards in the 1927-28 period.



A brief description of the system was given by Mr.W.J. South of Limerick in the May, 1958, issue of THE RAILWAY MAGAZINE. To the present writer Mr. South has recounted many of his own interesting recollections of the lines, including the amazing rapidity with which the entire railway was dismantled the moment it had served its purpose and the rolling-stock and rails all shipped back to Germany. By 1931 there were no signs of the system left. In use to this day, however, at Limerick docks, is one of the large cranes erected by the contractors for the unloading of the Shannon equipment and later acquired by the Harbour Board.

Additional notes by Martin Murray:-

An attempt to identify some of the locos more closely was made by D. Cole in the INDUSTRIAL RAILWAY RECORD No. 8 of 1965, based largely on notes supplied by G.S. Moore. Since then more information has come to light, and the current state of knowledge about these locos can be summarised as follows.

The following locos have been definitely identified as being delivered to Siemens Bauunion around 1925, all 0-4-0T's, 900mm.

Henschel	20304-20310	Borsig	11660-11665
Henschel	20616-20630	Hanomag	9416-9426
Borsig	11618-11621	Hanomag	9429
Borsig	11657		

The Borsigs are given as 0-8-0T's, but this is probably a clerical error. They are also the only locos definitely stated as having been sent to Ireland (Limerick and Shannon River are mentioned), though it is probable that all the above locos were in fact for the Shannon Scheme.

Other locos which were probably delivered to Siemens Bauunion were

Borsig	11617	
Borsig	11656	No entry in Borsig works list
Borsig	11658-11659	
Hanomag	9397- 9409	Uncertain if ever built
Rheinmetall	1003- 1007	No complete Rheinmetall list known

The locos listed thus total 65, and it must be assumed that the remaining locos, except for the Linke-Hofmann and Rheinmetall (these lists are not complete) were obtained by Siemens second-hand, unless the totals given by Mr. McGrath are wrong. All of the builders mentioned built sufficient numbers of 900mm and 600mm locos during the years in question to cover the totals given, but it is of course idle to speculate on which locos may have come to Siemens second-hand.

THE CANNING RIVER & TURTLE CREEK RAILROAD

Keith Watson

A new 12in gauge railroad based on narrow gauge practice is under way in the grounds of a Boys Home beside the Canning River, ten miles from Perth in West Australia.

Construction commenced in 1974 when over ¾ mile of track, and several wagons, became available when a local brickyard closed. The 12 lb. rails were hauled out manually in temperatures up to 105°F, and we were all covered in the fine clay which had settled over the last fifty years. Much of the rail was in good condition, but the second rate rails were useful for sidings, check rails and point blades.

The 16in gauge wagons had a complicated system of rise and fall table to lift pallets of bricks, and four additional wheels at right angles to the running wheels which could be lowered to move the wagons sideways into the Hoffman kilns. These wagons were dismantled and the 9in diameter chilled iron wheels were regauged to 12in, and reprofiled to narrow gauge standards. Six bogies were constructed using the wheels, to give us our first three bogie wagons.

A four wheel petrol locomotive was constructed using an Austin A30 engine, centrifugal clutch and Perkins marine gearbox. The Austin differential provided the second reduction and right angle drive through ⅝in sprockets to the 9in wheels. This, together with one wagon, worked the line during its first year of operation.

A heavy 7¼in gauge locomotive was already being built to operate at Castledare, the well established railway started by the author in 1963. It was decided to convert this to a light 12in gauge 2-4-4 by removing the flycranks and substituting 10in driving wheels outside the frames. COLORADO, as she is now named, is based on early American practise with a strong South Park flavour and is the eighth steamer to leave the Watson works. She has pannier tanks to leave the bunker free for the driver, and is 8ft 6in long, 2ft 6in wide and 4ft high. The boiler is of the Briggs pattern used extensively in 7¼in and 12in gauge construction in Australia. It has an 11¾in diameter seamless steel barrel, ½in tube plates, and a 5½in diameter dome upstand. Twenty three 1in outside diameter copper tubes are expanded into the firebox, which has water walls with ½in by 16 gauge risers every in to a 1in collecting manifold coupled into the crown. A 1in downcomer and mud drums are also fitted. The two outside cylinders have 3¼in bore and 4½in stroke, with 1in travel slide valves actuated by American pattern Stephenson link motion, and lever reverse. A mechanical lubricator supplies oil to the valves. Driving wheels are 10in diameter, and bogie and pony truck wheels 7in diameter. All wheels are heat treated and hardened iron, and the axles are carried in sealed ball races.

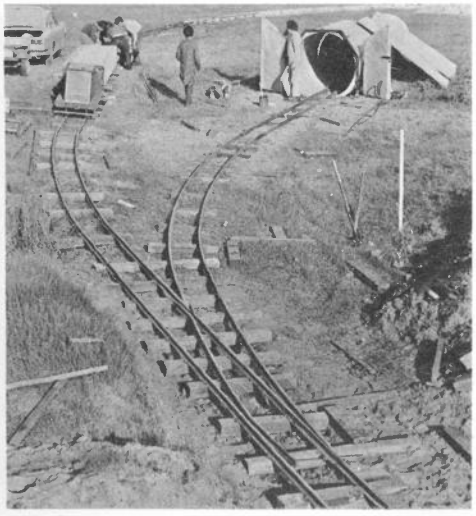
COLORADO weighs approximately 1550 lb, and took three years to build. Now finished in mid green, lined black and orange, with red trim and polished wooden cab she looks very smart. Local soft coal or wood is fired, and the full pressure of 100 pounds per square inch can be raised on natural draft in forty minutes. Using a blower steam can be raised much more quickly. She was first put to work in April 1976 and hauled three loaded bogie wagons with effortless ease, raising nearly $400 for the Boys Home in one afternoon !

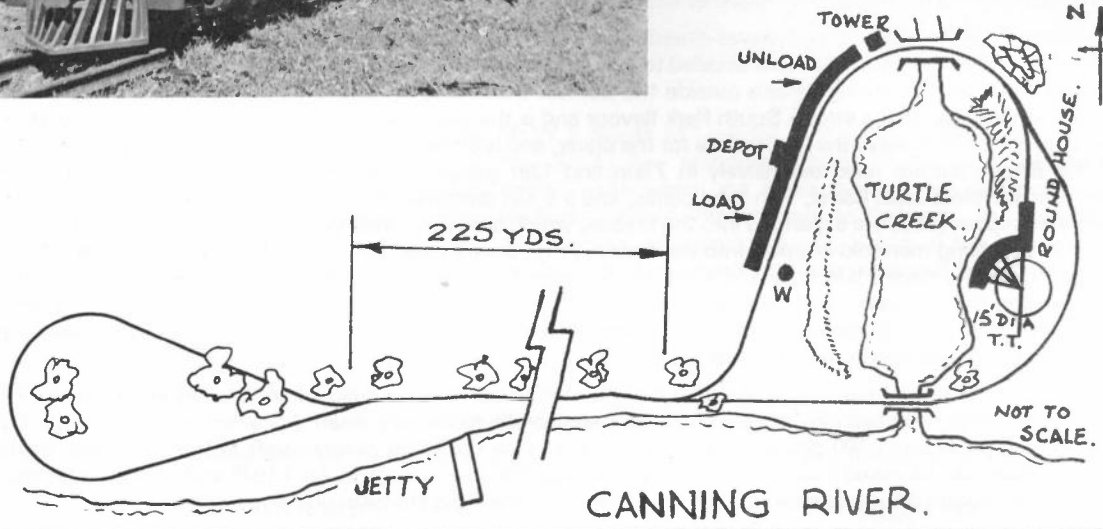
The bogie wagons are 14ft long, 2ft 7½in wide and 2ft high, with three compartments seating four children in each. Australian hardwood was used to construct the bodies and frames. When the line was being laid out, one wagon was fitted with an open gondola body to carry spoil for the embankments. This was loaded by tractor shovel and carried about three tons each trip.

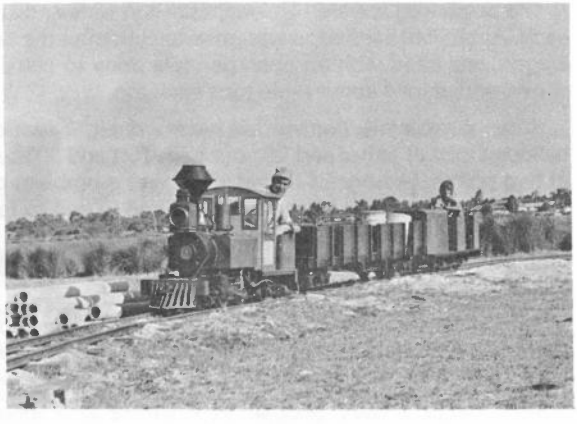
When completed, the line will have a straight section some 225 yards long beside the Canning River, and balloon loops at either end laid out with 75ft and 100ft radius curves. Bridges carry the tracks over Turtle Creek at two points. Storage of rolling stock was a problem because boys will be boys. Reject 4ft diameter concrete pipes were therefore obtained and laid end to end to form a shed 50ft long. The track inside is laid on specially shaped steel sleepers. One end was bricked up and the other fitted with heavy steel doors. A three road roundhouse and 40ft foot wagon shed are planned, together with a 15ft diameter turntable, but meanwhile the concrete pipes give excellent, secure storage.

The track will be completed very soon, and a small four wheel caboose is under construction to complete the train. To speed track laying an unusual lever operated rail bender was made and is much easier than a Jim Crow. I can strongly recommend this to members, and a drawing is available from the Society Librarian.

12in gauge is very popular in Australia and there are many locomotives operating, ranging from an overgauged 10¼in machine to a hefty 2-8-2, and even a replica of Stephensons ROCKET. One locomotive currently under construction for the Smokey Mountain Railroad in New South Wales (featured in "The Narrow Gauge" No. 71) is a half size Fowler 0-6-0 tank COOLUM. I would like to hear from members in other parts of the world interested in similar projects, my address is "Talyllyn", 11 Sandra Way, Rossmoyne, West Australia 6155.

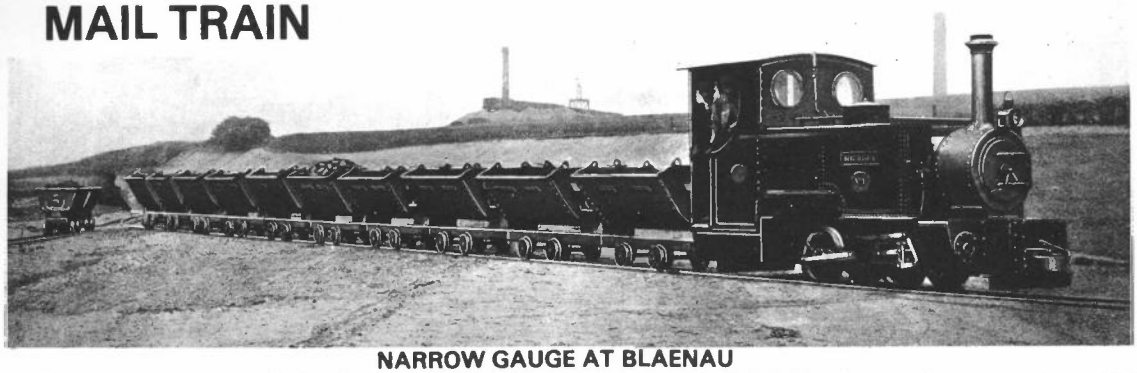






Top left: COLORADO after delivery. Top right: Track construction in progress, showing the concrete pipe shed. Bottom left: Petrol locomotive and wagon during the first year of operation. Bottom right: Trial run with COLORADO before final painting *(Keith Watson)*

MAIL TRAIN



NARROW GAUGE AT BLAENAU

The apparent contradiction between Muir Hill (E. Boydell & Co.) building locomotives as early as 1922 when their No.2 was only delivered in 1926 is easlily explained. Boydell really only built locomotives as a sideline at first, and their early ones were simple adaptations of the Fordson tractor. (Early standard gauge machines were simply tractors fitted with flanged wheels in fact.) These were clearly numbered in the same series as their other products. When the more elaborately engineered and heavier narrow gauge locomotive appeared in 1926 a seperate series of numbers was started for these and the R &ER example quoted is No.2 in this new series. The early converted tractors, as exemplified by the one illustrated in NG 72, retained the tractor gearbox and rear axle assembly and thus had a higher top speed forward than in reverse. This is no great handicap in a shunting locomotive but would be useless in one expected to make long journeys, as the F R discovered when it borrowed the Dolgarrog one in 1924! The 1926 locomotives had proper bi-directional gearboxes.

An interesting point about the locomotive illustrated is the origin of its frame, which appears to have come from an American battery or trolley locomotive. Did Boydell perhaps obtain some war surplus battery locomotives as a basis for their early locomotives? If they did, they may not have created a seperate number series until they started producing complete locomotives of their own design.

KENILWORTH, WARWICKS. **RODNEY WEAVER.**

THREE LITTLE KNOWN ENGINES

Bagnall 1410 is an interesting example of a "transitional" design which has obvious affinities both with the early, long-wheelbase Bagnall designs and with the more compact type then being introduced by E.E. Baguley. The general layout of PLATELAYER is probably due to Baguley, but it would be interesting to know whether it had a normal firebox or was fitted with Baguley's new "bull head" boiler with circular firebox. It clearly has Stephensons valve gear rather than Baguley, a characteristic of some early "bull head" locomotives, and while on the subject of valve gears it should be pointed out that Bagnall 1999 had Bagnall & Price, not Baguley, valve gear.

The LMSR also owned three 2ft gauge Simplexes at various times during the pre-War years. According to Motor Rail records the following locomotives, all of the classic 20hp bow-framed design and all ex-WDLR, were with the LMSR:

1064 delivered 8.10.1918 as WDLR LR 2785 at Horbury in March 1928

1651 delivered 13.5.1918 as WDLR LR 2372 to Manchester (original location unknown)

1762 delivered 30.8.1918 as WDLR LR 2483 at Crewe in November 1935

It is odd that MR 1651, one of the few WDLR locos to be delivered to a UK destination, should end up on the LMSR and makes one wonder whether it was in fact used at premises connected with the LNWR and passed to them when the War Office had finished with it.

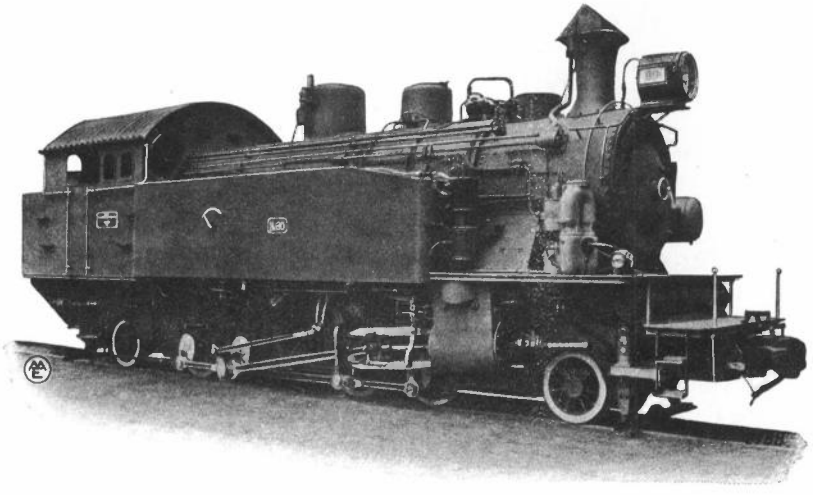
KENILWORTH, WARWICKS **RODNEY WEAVER**

An electric railway on the 2ft. gauge has been opened at Ramsgate connecting the amusement park on the site of the former Ramsgate Harbour terminus of the L.C. & D. Ry. with the Hereson Road station which is about five minutes walk from Dumpton Park Station. The original tunnel on a grade of 1 in 75, built in 1863, is used for part of the way. The line is three-quarters of a mile in length and the journey takes four minutes.

("The Locomotive Magazine", August 15th., 1936).

Maschinenfabrik Esslingen

Esslingen am Neckar



ZEUGNIS-ABSCHRIFT

FERROCARRIL DE ARICA A LA PAZ
ADMINISTRACION

CERTIFICADO

El Administrador del ferrocarril Internacional de Arica a La Paz certifica: Que las Locomotoras de cremallera Nos. 78 - 79 - 80 - 81 - 82 - y 83 de este F. C. con los siguientes números de fábrica: 4127 - 4128 - 4153 - 4154 - 4155 - y 4188, adquiridas a la MASCHINENFABRIK ESSLINGEN (Alemania) son de buena calidad y cumplen satisfactoriamente el arrastre de trenes de 140 toneladas en gradientes de 6%, en el trayecto de 40 kilómetros. -

Arica, Abril de 1928.-

gez.: OSVALDO GALECIO C., Administrador.

Übersetzung

Der Verwalter der Internationalen Eisenbahn Arica la Paz bestätigt hiermit, daß die Zahnradlokomotiven 78, 79, 80, 81, 82 und 83 dieser Bahn mit den folgenden Fabriknummern 4127, 4128, 4153, 4154 4155 und 4188, die von der Maschinenfabrik Esslingen (Deutschland) gekauft wurden, von guter Qualität sind und in zufriedenstellender Weise Züge von 140 Tonnen auf einer Steigung von 6% und einer Strecke von 40 km transportieren.

XI. 29. 500. C.

Esslingen leaflet from collection of R.N.Redman.