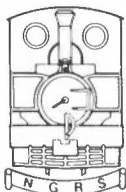


THE NARROW GAUGE

No. 85



NARROW GAUGE RAILWAY SOCIETY



NARROW GAUGE RAILWAY SOCIETY

Serving the narrow gauge world since 1951

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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, Malvern, Stoke-on-Trent and Warrington. Annual subscription £4.50 due 1st April.

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EDITORIAL

No 85 AUTUMN 1979

More than twenty years ago, a member living in the London area admitted that it was easier, and cheaper, to visit narrow gauge lines in northern France than travel to north Wales. There was then a lot of interest within easy reach of the channel ports, and quite naturally, others followed. One of the greatest delights of the narrow gauge is the discovery of something new, or barely remembered, and our two major articles follow this theme.

The Réseau Guerlédan was an imaginative venture, so perfectly executed as to be accepted even by those who normally dismiss miniature railways as mere toys. Its removal after only two seasons operation is unfortunate, but emphasises the many problems which often beset railways in the modern world.

The Hedjaz Railway was also an imaginative venture, constructed through difficult country in a part of the world that has had more than its share of problems. Although the southern section; abandoned for over sixty years but apparently still strewn with derelict locomotives and trains; had the ghostly appeal to hit the headlines from time to time, comparatively little was heard of the northern sections which were still in operation. "TEFS" has gained a high reputation in recent years for introducing enthusiasts to steam operations in ever more remote corners of the world, and it was obviously only a matter of time before the Hedjaz Railway was added to the list. Keith Taylorson is once again our guide, and his article makes exciting reading.

Cover: No, it's not an undiscovered view of the Lynton & Barnstaple Railway, but a striking example of how a well proportioned miniature line can capture the atmosphere of the real thing. The 2-6-2T JUBILEE heads a well filled train on the Reseau Guerledan, the subject of our leading article.
(D. T. Rowe)

THE RÉSEAU GUERLÉDAN

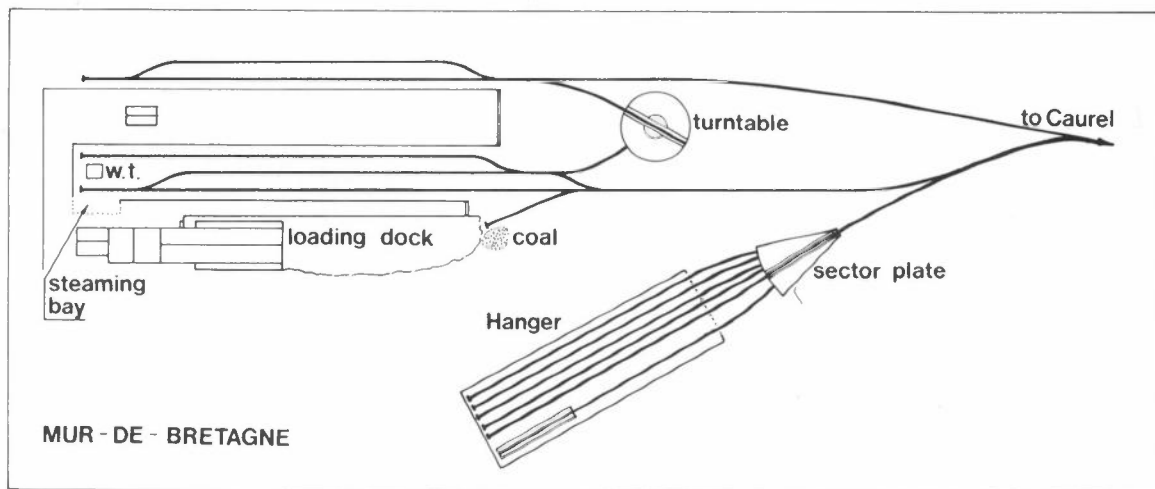
David John



FRANCE makes an impressive sight at the head of six coaches in the station at Mur-de-Bretagne in July 1979. (D. T. Rowe)

This new miniature railway has been mentioned several times in *Narrow Gauge News*, but because it is so different in concept from most lines of this type, and has had but a short life, this description will be of special interest. North west France was served by the metre gauge Réseau Breton until comparatively recently, and its characteristic trains and stations were well known to many visitors from England. The section from Carhaix to Loudéac, opened in 1900, was closed completely in 1967 and abandoned four years later. Mr J de Vries Ellerton, seeking a site on which to build and operate a unique miniature railway, discovered the route, and secured a concession to construct a line on the section from Mur-de-Bretagne to Caurel, in the Côtes du Nord.

The new line was laid to 310 mm (12¼ in) gauge, and work started on 1st October, 1977 at the original RB station of Mur-de-Bretagne, where the station buildings still survived. The trackwork was supplied and laid by Leisuretrack of Stratford-upon-Avon, and consisted of 20 lb/yd flat bottom rail spiked directly to jarrah timber sleepers. The turntable and unusual sector plate giving access to the shed, were specially constructed by Leisure-track. The station is shown on the accompanying diagram, which shows the unusual track layout. Because the carriages have doors on the north side, only the south platform faces can be used to load passengers. Each platform track has a passing loop, and the north platform face is utilised as a storage siding with access to the water tower. A connection is provided from each platform to the turntable. The locomotive, carriage and wagon shed and workshop, known as the hanger, covers six tracks, one of which has an inspection pit. The line to Caurel, 5 km distant, includes three passing loops, and at the terminus are three tracks 150 m long ending at a turntable.



The first locomotive to arrive on the line was a Lister (3593/1931) obtained from M E Engineering Ltd., London, and rebuilt with a three cylinder Deutz diesel engine and converted from 2ft gauge by David Curwen. This was used during construction to propel flat wagons loaded with rails and sleepers to the end of the track.

Passenger services commenced in May, 1978, and were first worked by a replica of the famous "Galloping Goose". These unique machines originated on the Rio Grande Southern R.R. in Colorado, where they operated the sparse passenger and mail services over the 160 mile length of that 3ft gauge line. There were originally six, and five still survive in a state of preservation. The Réseau Guerlédan Goose is a replica of R.G.S. number 3, was built by David Curwen in 1978, and is powered by a diesel engine with cardan shaft drive. Like the prototype, it is painted silver with a portrait of a goose in full cry on the side.

The following month, 15th June, the first steam locomotive arrived from England. Built by Milner Engineering, FRANCE carries their serial number 106 of 1978, and is the new famous half size model of a Darjeeling Himalayan Railway 0-4-0 saddle tank. It is an impressive machine, especially in service at the head of a six coach train on the rising grades to Caurel.

The second steam locomotive is even more impressive. Delivered in good time for the 1979 season, JUBILEE is a 2-6-2 tank constructed by David Curwen, based on the Lynton & Barnstaple prototype. Other locomotives were planned, including a 2-6-4 tank on the Leek & Manifold pattern, to be named THOR; an 0-6-4 tank named DAVID C CURWEN modelled after the North Wales Narrow Gauge Railway BEDDGELERT; a Shay; a Denver & Rio Grande Western 2-8-2, and possibly others to follow.

For the 1978 season the passenger stock consisted of ten closed coaches modelled on the Festiniog Railway end-balcony vehicles. One, presumably 100, is a brake third with two compartments, and 101-109 are four compartment third class vehicles seating sixteen. These were designed by the railway, and have channel section steel frames carried on compensated bogies with roller bearing axleboxes. The bodies are made from wood, with beading to represent panelling, and the roof of moulded fibreglass. These were fabricated by a boat builder in England, the frames by a truck company, and erection was carried out by the railway in the workshops at Mur-de-Bretagne. There were also four open coaches, 150-153, each with five compartments seating twenty passengers, and having a brake handle in one compartment. All are in red livery with white roofs and black iron work. Class numbers, in gold lettering shaded black, are shown on each side together with the company crest, and the running numbers painted in white on each end. Additional first and second class carriages were expected this year to bring the total of passenger carrying vehicles to thirty-two.



Mur-de-Bretagne station, with FRANCE surrounded by a group of admirers, July 1979. (D.T. Rowe)



JUBILEE stands at the halt overlooking the Lac du Guerlédan in June 1979. (H. Holdsworth)

Goods stock is also based on a number of narrow gauge prototypes. Bogie van KF1 has double sliding doors in each side like the L&B design, and four wheel van KF2 is similar to the Corris Railway vehicle. There are ten attractive little four wheel open wagons, UL10-15, UL16-17 and UL19, which have one end removable, and a bogie open wagon, 20, also of the L&B pattern. Three four wheel bolster wagons, QP30, QP32 and 33 were used to carry rails during the construction of the line. There is also another four wheel frame which carries no number. All the goods stock has grey bodies, black ironwork and frames. The running numbers are painted in white, low down on each side, and the classification follows standard French practice, the "f" indicating that a vehicle is fitted with brakes. Van KF1 carries the name of the railway in full, but the remainder of the stock simply has the letters RG stencilled in white on the side. Finally, there is the permanent way van, PW500. This is a bogie vehicle constructed on the same frame as the goods stock, but having a very high body, with double doors and no windows. It is finished in the same red livery as the passenger coaches.

When I arrived at the station to make a trip over the line in June 1978, FRANCE was in the steaming bay with the electric blower hard on, and smoke howling up the chimney. A six coach train stood in the platform, and the two open vehicles were already full. I had been told that the first train would leave from platform 2, hauled by the "Goose", and when those passengers who had already taken their seats realised this, half crossed the line, ignoring notices forbidding this practice, and joined the train behind the "Goose". The remainder elected to wait until 15.00 when FRANCE would be ready.

The carriage doors were locked, the driver turned on the ignition, and the "Goose" instantly came to life. At exactly 14.30, with a blast from a hooter that sounded like a sheep bleating through a clarinet, we were away. The fence at the end of the platform was very close to the side of the carriage, and the noise from the bogies was almost deafening. We passed the turntable, sector plate, then entered a right hand curve away from the station. Once out of the station the track noise decreased to an acceptable level, and there was the chance to admire the

high quality of the road-bed, new ballast edged with old, bordered by stone lined drainage ditches. The train clattered along, passed beneath the only road overbridge on the line, and after about five minutes, with a blast from its reedy hooter at the "Sifflez" sign the "Goose" pulled into the first passing loop at Village de Vacances. This, like the other loops, has spring loaded turnouts set for right hand running. After leaving this loop the gradient steepens, and to the left impressive views of the Guerlédan lake open out. There were some speed restrictions to 5 km/h (3 m.p.h.), and the three coach train trundled along steadily through the second loop at Botminy, apparently situated in the middle of nowhere. The line then climbs again, and, about 25 minutes after leaving Mur-de-Bretagne, our train reached Kerjoly, the temporary terminus marked by a nameboard and a pile of coal. Then, to quote the guide to the railway ".....the train crosses the largest embankment on the line and, still climbing, runs through gorse and broom, over a road bridge and into the station of Caurel, a distance of 5 km."

The train was secured to a brake post set beside the track, and the "Goose" ran round in preparation for the return journey. This unusual arrangement is necessary because of the severe gradient at Kerjoly. Being downhill, the trip back was quicker and quieter than the outward journey. At Botminy we passed FRANCE, looking quite magnificent standing in the loop belching steam. Immediately before arriving at Mur-de-Bretagne we stopped for the guard to reset the points to allow us into platform 1. Leaving the train was quite difficult because of the rush of passengers trying to get on! Trains are controlled by staffs exchanged between drivers at the loops, backed up by radio-telephone between train crews and base at Mur-de-Bretagne. During the first year of operation speeds were restricted to 15 km/h (9 m.p.h.).

A year later Henry Holdsworth visited the line, and was made very welcome by Mr John de Vries Ellerton. Learning of Henry's interest in the L&B he escorted him to the hanger, managed to get JUBILEE in steam, and invited him to share the footplate for the round trip. JUBILEE is a very faithful reproduction of the prototype, but at Mr Ellerton's request Walschaert's valve gear was substituted for the Joy valve gear of the original locomotives. The train was of five carriages, very well filled, and proved to be a really exhilarating run. However, the next train was even more impressive — ten vehicles carrying a large school party, and double-headed by JUBILEE and FRANCE.

Even this summer there were many plans for expansion of the Réseau Guerlédan, and the development of supporting amenities. It was therefore a great surprise to learn of the complete closure of the line at the end of the 1979 season, but this had unfortunately been forced on the operator by unexpected local problems. However, this loss to France is a gain for Britain, and the line is expected to be moved to a site in this country. Services may start in late 1980, so you will also be able to enjoy this delightful railway as I did, but much closer to home.

In conclusion I would like to record my appreciation to the staff of the Réseau Guerlédan, and particularly John de Vries Ellerton, Henry Holdsworth and D Trevor Rowe, for their assistance in the preparation of this article.



Galloping Goose No. 3 running round its train at Kerjoly in June 1978.

(D. John)

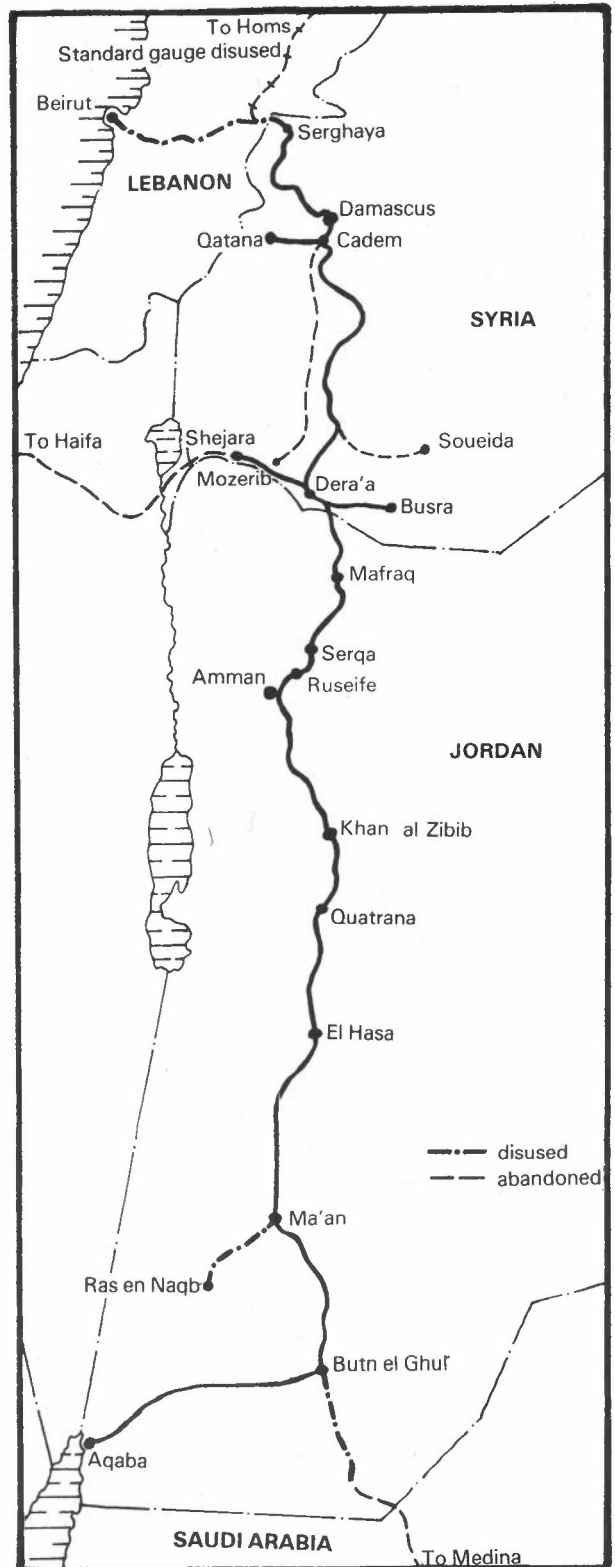
HEDJAZ HOLIDAY

K. Taylorson



In May 1979 the overseas touring club "To Europe—For Steam" ran a one week tour to Syria and Jordan. This was the result of twelve months' negotiation, and the thorough preparation culminated in a tour which was successful to a remarkable degree, considering that neither country had previously played host to that capricious creature, the English "Gricer". So it came about that thirty individuals of assorted age and appearance, but nevertheless instantly recognisable as railfans, met at Heathrow Terminal Three on 6 May. Royal Jordanian Airlines (ALIA) lived up to their acronym "Always Late In Arriving" by failing the original plane, and sending a replacement jet out from Jordan—resulting in an arrival at Amman well after midnight. It was therefore with mixed disappointment and relief that we learned that the Hedjaz authorities had refused to diagram a steam locomotive for the 08.00 train to Damascus, thus sabotaging the lineside photography planned for Monday, but allowing the party to catch up on lost sleep.

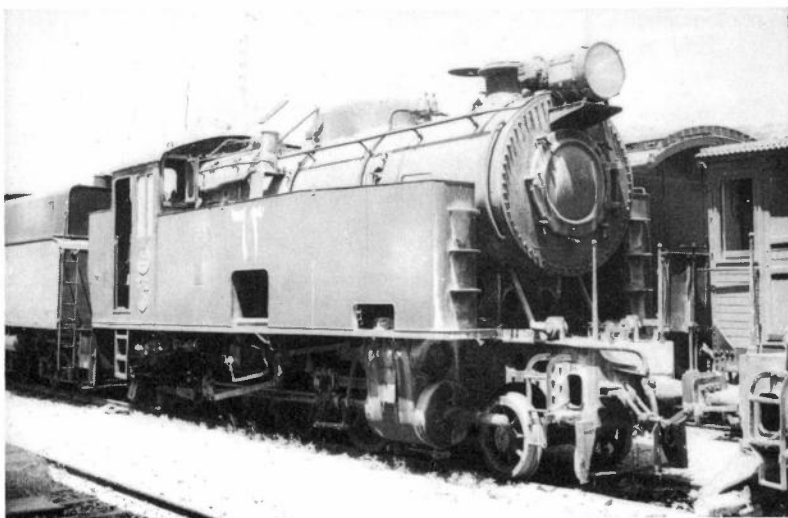
Making use of our free morning, my room-mate and I visited the station, which lies about two miles north of the city centre on the airport road, and is well served by bus routes. The station building is a modest, but attractive stone structure fronting four platform roads, a small goods shed, and the combined locomotive running and maintenance shed. Although the station area is spruce and well-maintained, the whole railway has that atmosphere of mellowed decay reminiscent of Greece, or parts of rural Italy, where one suspects that the railways only remain in being because no-one bothers to close them down. Certainly the amount of traffic carried in both countries can scarcely justify retention of the existing infrastructure, much less the new investment being discussed.



The history of the Hedjaz Railway has been described in numerous magazine articles, the most recent being "Steam in the Levant" (*Railway Magazine*, May 1978), and does not warrant detailed repetition here. It is sufficient to record that the 1.05m (3ft 5¼in) gauge network now consists of the main line from Damascus to Amman (227 Km), its freight only continuation, south through Ma'an to Butn el Ghul near the Saudi border (250 Km), a new line, opened in 1975, from Butn el Ghul to Aqaba (120 Km), and four short branches in Syria (Dera'a - Busra, Dera'a - Shejara, Cadam - Qatana, and Damascus - Serghaya). The latter is the one-time Chemin de Fer Damas-Hamah et Prolonguements (DHP) line which continues over the mountains into Beirut, and, on the Syrian side, has been under Hedjaz management since 1960. Since the troubles in Lebanon through traffic has ceased. The most recent development in Syria is the construction of a new standard gauge line south from Homs to Damascus (201 Km), on which work commenced in 1973, but is still incomplete. This will link Damascus with the European rail network by way of Turkey, but avoid the Lebanon. The next stage of this ambitious plan is to continue the standard gauge through from Damascus to Amman, though this scheme would involve some realignment, and is certainly not achievable by the original target date of 1981. All this is good news for steam fans, because there are no serious plans to phase out steam traction in Syria so long as the 1.05m gauge remains in use.

To return to Amman, my friend and I found fourteen of the seventeen steam locomotives in Jordan. On the shed, which is visible from the main road, were four serviceable Nippon Pacifics and a fifth which was wrecked in a collision "15 years ago"; three Jung 2-8-2's, and a solitary Robert Stephenson & Hawthorn 2-8-2. Discarded outside the shed, or stored in the goods road and obviously out of use, were three 2-8-2's, and two 2-6-2 tanks from Haine St Pierre. We returned later in the day with the main party, and were allowed to take photographs around the shed area. We were also taken to the dump about two miles north of the station, where the three remaining locomotives, two Robert Stephenson & Hawthorn 2-8-2's and a Haine St Pierre 2-6-2 tank, stand forlornly in a wired compound next to the main line, but with no rail connection. There is no chance of these being used again, because the serviceable locomotives are only kept as standby to three diesels built by General Electric in 1976, which work all regular traffic, including the passenger train to Damascus each Monday and Friday. While at the dump we saw the diesel which had worked the Monday train returning from Dera'a with a balancing freight, actually only a brake van. Incidentally, although the dump is open to photography, it should be noted that individual visitors to Amman have not previously been allowed to take photographs in the vicinity of the station and shed.

The daily routine starts early in Jordan, and those resilient enough to sleep through the wailing muezzins at the ungodly hour of 03.00 were up at 06.00 on Tuesday, for breakfast before joining the TEFS special for Qatrana. Our train, behind Jung 2-8-2 No 51, consisted of a water tank car, baggage van, and two teak coaches. These, in common with all Hedjaz rolling stock, dated from World War 1 or earlier. At 07.30 we set off south for Qatrana, the limit of steam working, and the first hour was spent thrashing up continuous grades through the sprawling suburbs of Amman, the railway winding around the city limits to gain height. Amman is 4200 ft above sea level, but Qasir Um El-Heeran, our first station stop, is about 500 ft higher. Before the station we enjoyed two stops for photography, the first on one of the superb stone viaducts that are a feature of the Jordan section.



This modern 2-6-2T, built by Haine St Pierre in 1955, is stored at Amman station.

(K Taylorson)



Our special train from Amman to Quatrana makes a refreshment stop at Khan Zibib. The loco crew take the opportunity to oil round Jung 2-8-2 No 51. (K Taylorson)

With no heavy industry to pollute the air, stonework remains as clean as the day it was laid, and dazzles the eye in the brilliant sunshine. The desert in this part of Jordan is rocky rather than sand, and supports a surprising amount of scrubby vegetation.

Several more photographic stops were made, including one where the train was posed alongside a herd of camels. The intermediate stations are sturdy stone outposts in the middle of nowhere, demonstrating their original function as Turkish garrison forts rather than sources of traffic. Most have passing loops, often full of surplus goods wagons, and appear to be fully staffed despite the lack of regular traffic on this section. From Qatrana we drove to Aqaba, on a good road which parallels the railway for most of the way. Nearing Aqaba, we joined the new line which is used only at the southern end to transport phosphates from mines at El Hasa to Aqaba for export. There are ten 1700 hp Co-Co, and five 1050/950 hp A1A-A1A diesel electric locomotives on this section, all supplied by General Electric in 1975/76. Trains consist of bogie hopper wagons built at Ashford by British Rail Engineering Ltd., and a double-headed train of empties was noted ascending the gradient from Aqaba port during the evening.

On Wednesday morning we took an early flight back to Amman, and by mid-morning were ensconced on our familiar train, this time pointing north behind Japanese Pacific No 82. We had requested 2-6-2 No 23, but this was found, on inspection, to be unfit for a long haul. However, the shedmaster steamed the Darlington-built machine, which bears a strong resemblance to the Indian YD class, and made a couple of short runs within station limits. After some argument our Pacific was turned to depart tender first, so as to be heading into the sun on the return journey, and we set off through more teeming slums, at one stage displacing a street market that had encroached on the tracks. During a halt at Rusiefa we had time to investigate a phosphate mine with a disused 60 cm gauge system. Stored in the open were nineteen Schottler 4wD locomotives, together with a line of modern tubs. A number of older wagons and much track were dumped nearby. Reversing at Mafraq we steamed back through a beautiful golden evening, obtaining some classic lineside scenes in the gorges near Amman as the shadows lengthened over the desert. As before, our crew were highly cooperative, providing black smoke at each runpast and 'instant replays' at the most photogenic locations.

Thursday was a busy day, involving an 07.00 start from Amman on board the same train set behind a different Japanese Pacific, No 85. With a specific timetable to keep we only had time for two runpasts before reaching the frontier station, Dera'a, just after 11.00. Passport formalities were rather prolonged, but our presence was

not required and, permission having been granted, we were able to explore the shed which contained Borsig 2-8-0 No 161, used on the Busra branch service two days a week, and an ancient De Dion Bouton railcar which the driver obligingly drove out of the shed for photographs. Just after midday Hartmann 2-8-2 No 263 steamed in with the twice weekly express from Damascus to Amman. This was taken over by our Pacific, although it would normally be diesel hauled in Jordan. The station pilot at Dera'a is a curious 2-6-0 tender-tank No 66, devoid of plates, but if it follows the original Hadjaz numbering it should be a rebuild of a Jung 2-6-0 built in 1907.

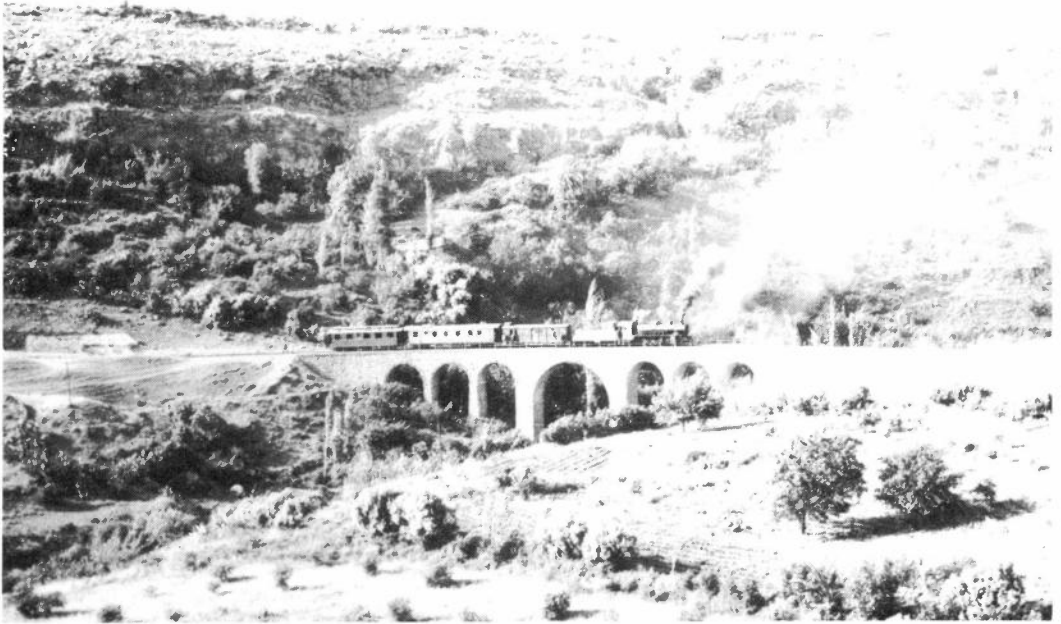
Our afternoon excursion was an unknown quantity, but turned out to be the highspot of the tour. No 263 coupled onto our special train, and set off down the Palestine branch which once ran through to Haifa, although for obvious reasons the line is now cut and terminates short of the border at Shejara. Basically nondescript for the first fifteen miles, the line then plunges into a short tunnel and emerges in a succession of dramatic valleys where the track loops round on itself, clinging to fragile ledges, threading spidery girder bridges, and crossing magnificent stone viaducts before reaching the rocky wilderness of Shejara. About half way down the branch alert passengers noticed the extraordinary sight of a derelict locomotive perched on a hilltop opposite, and about half a mile distant. This is possibly a relic of the line from Damascus to Mozarib, which was opened by the DHP in 1894, fell into disuse when the Hedjaz Railway was opened, and was finally closed down by the Turks during World War 1. On the return journey upgrade several runpasts were made, and favourable comparisons with the railway to the Khyber Pass were overheard. Arriving back at Dera'a the 2-8-2 was serviced, and we made an express run to Damascus in exactly three hours.

Friday was a free day in Damascus, and because our hotel was only five minutes walk from the station, most of the party were to be found clustering there before eight that morning. Damascus station, as befits the headquarters of the Hedjaz Railway, has a magnificent, ornate terminal building leading on to four immensely long platform roads, more than adequate for the meagre present-day traffic. The first departure was the 08.00 passenger train to Serghaya, behind 0-4-4-2 Mallet tank 961. Friday is the weekly holiday so the six coach train was packed, and some aspiring passengers were turned away. Shortly before the Serghaya train departed, Hartmann 2-8-2 No 259 arrived, began to make up a mixed train for Dera'a, and left at 08.30. This runs on certain days, but although these are not publicised they certainly do not include the days on which the international passenger runs.

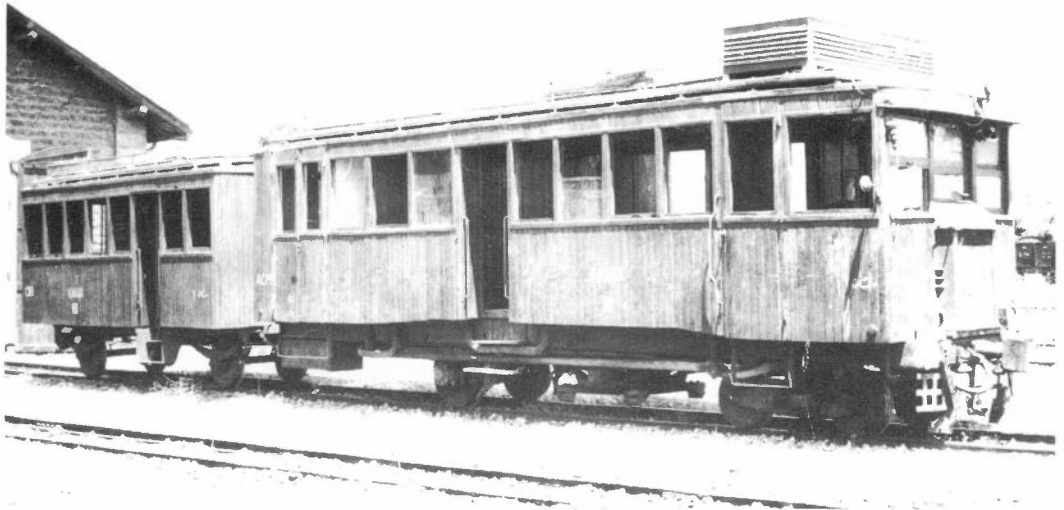


Darlington-built 2-8-2 No 23 poses at Amman with the TEFS special, consisting of a bogie van, 1st class compartment coach, and a typical wooden coach fitted out as a buffet car.

(K. Taylorson)



Hartmann 2-8-2 No 263 pauses for the photographers amidst the spectacular scenery of the Dera'a to Shejara branch.
(K Taylorson)



This vintage De Dion-Bouton railcar, ACM 1, attracted a lot of attention at Dera'a. A turntable, suspended between the wheels, can be lowered onto the rails to lift the vehicle, and permit it to be turned anywhere on the line.
(K Taylorson)

Finally, SLM 2-6-0 tank 755 worked a special train for an East German party up the Serghaya branch as far as Zebdani. The shuttle service to Cadem, and on the new branch to Qatara was worked by new Hungarian railcars which, we were told, are not a success, and are to be converted to 4 ft 8½ in gauge as part of the standard gauge extension scheme.

Later in the day some of the party hired taxis to obtain lineside photographs of the trains on the Serghaya line. This was a frustrating experience because between Serghaya and Zebdani the line disappears into a deep defile, a long way from the road, and the section of the line below Deir-Kanoun, where the line runs through several gorges, is inaccessible except over a secondary road which our drivers flatly refused to traverse. The final section of the line, which threads the backyards of Damascus, lacks any photogenic quality.

On Saturday we found 2-6-0 tank 755 on the lightly loaded Serghaya service, and Mallet ⁹⁶¹ 261 on a TEFS special, also to Serghaya. The first cloudy weather of the tour was encountered during the up journey, which did however demonstrate that the line has some photographic possibilities. On arrival at Serghaya we caught up the service train and discovered the attraction of the town to Friday's crowds—American cigarettes smuggled in from Lebanon at less than £2 for 200! Two further photo stops were made on the return journey, and at one the train was posed in the most photogenic gorge. Saturday evening was enlivened by a gun battle between opposing political factions only yards from our hotel entrance—just as the writer and several companions were setting out in search of dinner!

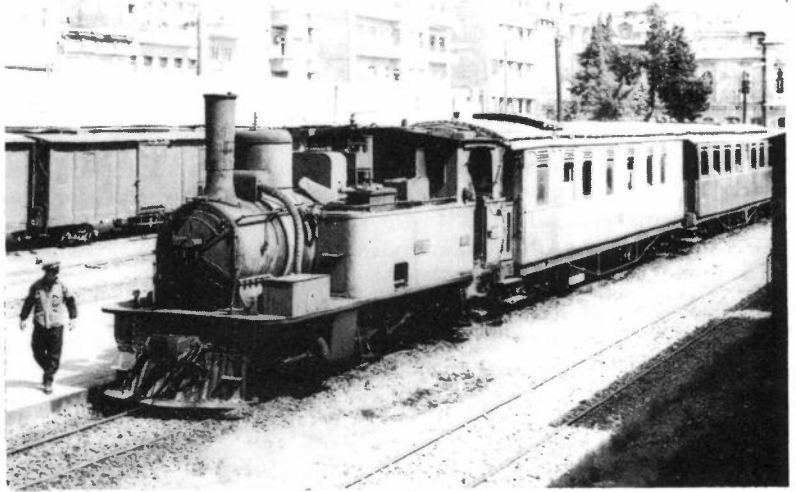
On our final day in Syria the customary visit to the station before breakfast revealed Mallet 961 on the Serghaya service, and Hartmann 2-8-2 No 263 on the international train to Amman, which left at 08.10. A conducted tour of Cadem shed and works had been arranged, and we travelled the three miles out to Cadem behind Jung 2-6-0 tank 61, one of a pair which act as works shunters. Inside the works there was the opportunity to examine the extensive facilities—a mixture of ancient and modern—for overhauling steam and diesel traction, which employ no less than 170 men.

Under heavy repair were Borsig 2-8-0 No 162, Hartmann 2-8-0 No 260, and SLM 2-6-0 tank 751. Work on the latter amounting to the virtual rebuild of an 85 year old loco! At the back of the works is an extensive 'elephants graveyard' of derelict hulks, boilers, and parts, some of the wreckage bearing unmistakable signs of explosive damage. One wreck carried a plate identifying it as Hohenzollern 2401/1908, one of eight 0-6-0 tanks originally designed for construction of the Medina—Mecca section of the Hedjaz Railway, which was in fact never built.



Cadem loco shed epitomises the faded glory of the Hedjaz Railway in Syria. On the left is Jung 2-6-0T No 62, on the right a Hartmann 2-8-2. (K Taylorson)

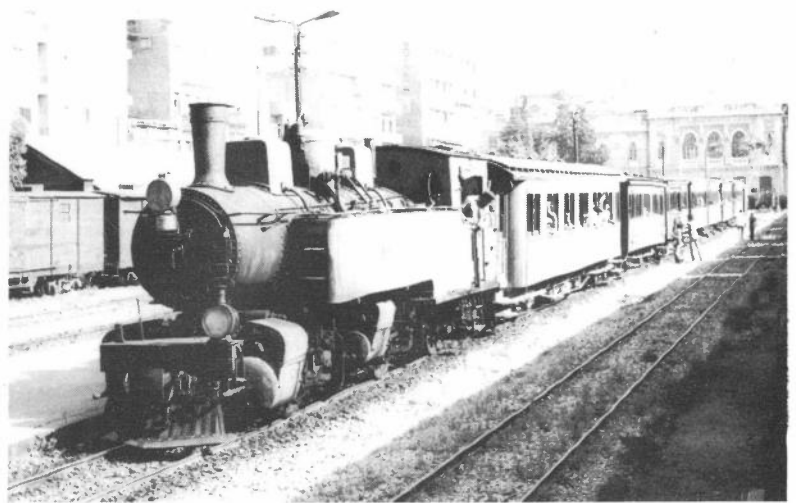
RUSH-HOUR AT DAMASCUS



Mallett 961 waits to depart with the 8.00 to Serghaya.
(K Taylorson)



The 8.20 mixed train to Dera'a leaves behind 2-8-2 No 259.
(K Taylorson)



A special train for an East German party was headed by 2-6-0T 755.
(K Taylorson)

At the front of the works were fleets of idle Hungarian railcars and, disturbingly, five Co-Co diesels built in Roumania in 1977. Enquiries established that these suffered from electrical faults, and had a tendency to spread the track, so there is no intention of putting them into service at this stage. Near the shed, a further reminder of the depredations of Colonel Lawrence was an "armoured" van, actually a wooden-bodied boxcar with rifle slits, and protected by internal steel plates.

Cadem shed is in effect an extension of the works, and contained about fifteen locomotives. Most of them were serviceable, but not in steam, and included several SLM 0-6-2 tanks, a solitary Hartmann 2-8-0, and a second Hartmann Mallet, 962. The shed opens onto a municipal slum, and would be easy to visit on a freelance basis. Indeed, the private visitor should not experience any difficulty with photography anywhere in Syria, railway staff being uniformly friendly and helpful.

A succession of planes brought us back from Damascus to London, and it only remains to thank Bill Alborough of TEFS for organising the tour, Phil Kilner for leading it, and special appreciation for our hard working Jordanian guide, Joseph, whose dedication to his eccentric charges impressed the whole party. I understand that a repeat of the tour is being planned for March 1980, and details can be obtained from TEFS, 22 Paddock Close, Quorn, Leics, LE12 8AX.

H.C. Hughes, in a letter to *Railway Magazine* October 1965, listed the following Hedjaz Railway locomotive stock at the end of World War 1:

APPENDIX

Number	Type	Builder	Date	Remarks
10-12	0-6-0T	Krauss	1902	
13-15	0-6-0T	Krauss	1903	
16-19	0-6-0T	Krauss	1904	
20-21	0-6-0T	Krauss	1905	
30-33	0-6-0T	Hohenzollern	1905	
34-37	0-6-0T	Hohenzollern	1908	
50-52	2-6-0	Hartmann	1906	
53-56	2-6-0	Hartmann	1907	
60-62	2-6-0	Jung	1906	Some later rebuilt as tank engines
63-66	2-6-0	Jung	1907	
70-77	2-8-0	Krauss	1903	
90-96	2-8-0	Hartmann	1907	
97-106	2-8-0	Hartmann	1910	
107-111	2-8-0	Hartmann	1911	
120-130	2-8-0	Jung	1907	
150-159	2-8-0	SLM	1912	
160-164	2-8-0	Borsig	1914	
180-182	2-8-0	Hanomag	1917	
200-203	2-4-6-0	Henschel	1907	
210-215	0-6-6-0T	Henschel	1917	
254-265	2-8-2	Hartmann	1918	
300	2-8-0	Jung	1907	Rebuilt as tank engine 1909
2419-2421	2-6-2T	La Meuse	1914	Diverted to the Hedjaz system
2432/5/6	0-10-0T	La Meuse	1914	

It is almost certain that the party accounted for the entire present-day steam locomotive stock of the Hedjaz Railway. In the lists which follow, all locomotives are available for service except where indicated. The derelict hulks in Cadem works have been omitted.

JORDAN

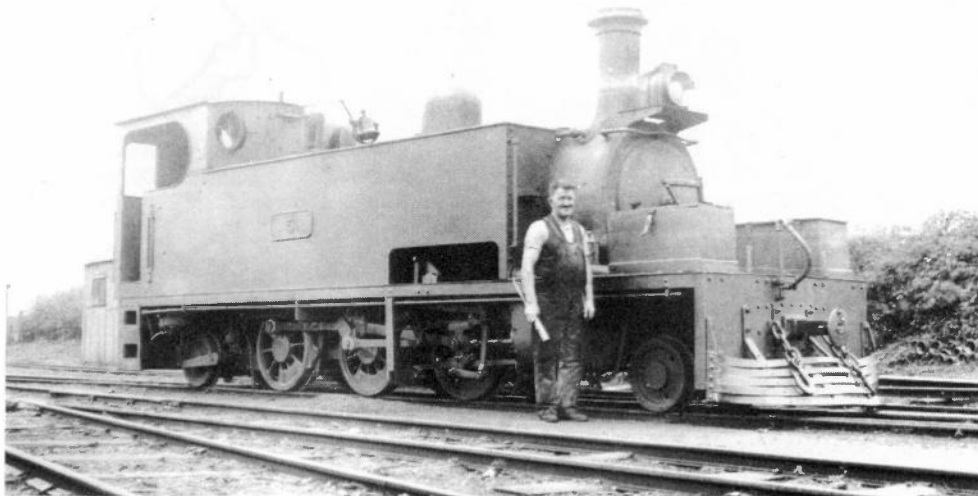
21-23	2-8-2	RSH	1951	21/22 stored
51-53	2-8-2	Jung	1955	
61-63	2-6-2T	HSP	1955	61/63 out of service 62 stored
71-73	2-8-2	HSP	1955	All out of service
81-85	4-6-2	Nippon	1959	83 derelict

SYRIA

61-62	2-6-0T	Jung	1906	Rebuilt from 2-6-0
66	2-6-0TT (Jung)	(1907)		Assumed rebuild of Jung 987/07
93	2-8-0	Hartmann	1906	
160-162	2-8-0	Borsig	1914	
259-263	2-8-2	Hartmann	1918	261/262 out of service
751-755	2-6-0T	SLM	1894	752 out of service
803-805	0-6-2T	SLM	1894/96	804/805 out of service
961-962	0-4-4-2T	Hartmann	1906	

FROM A DINGLE ALBUM

D.G. Rowland



Driver Jack Cotter stands beside his regular engine, 2-6-2T 5T, at Dingle yard in August 1931. From Tralee & Dingle Light Railway days, through Great Southern, and even under CIE it was usual for crews to keep to the same locomotive.

(Bournemouth Railway Club, Kelland collection)



For many years Jack Cotter lived with his family in the gatekeeper's cottage at the end of Dingle yard, where the harbour extension began. Here, on the eve of Fair Day in August 1951, 2-6-0T 2T is being bedded down in preparation for the following day's work. Jack will not have far to walk in the morning!

(P.C. Allen)

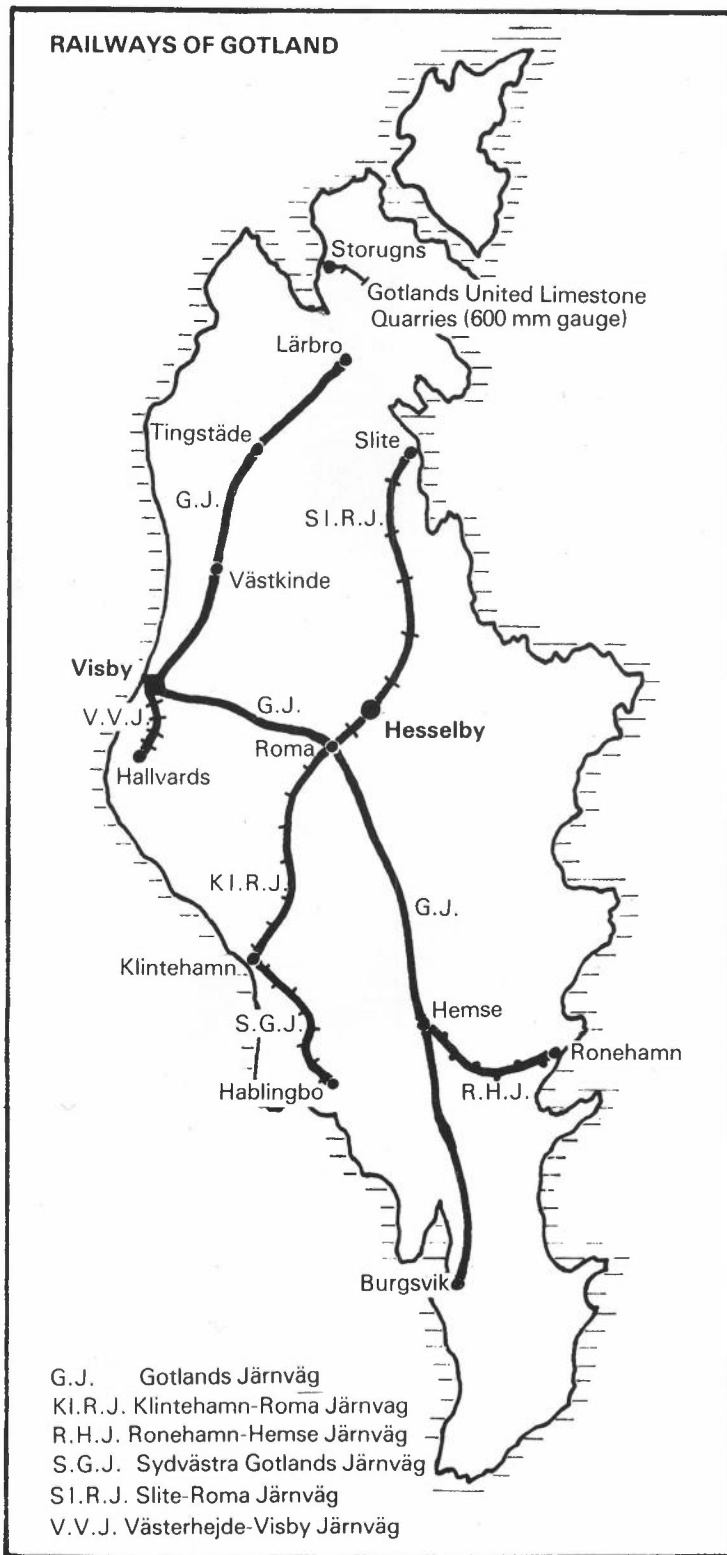
RAILWAY PRESERVATION IN GOTLAND

Neil Pitts

Gotland is the largest of the Swedish islands, situated in the Baltic Sea about 150 miles south of Stockholm. It measures about 75 miles from north to south, and is some 30 miles across at its widest point. It has a total area of 1225 square miles and around 60,000 population, of which a quarter live in the capital, Visby, (formerly spelt Wisby) once an important Hansa port, and still a fine example of a walled medieval city. The island consists mainly of limestone and there are numerous quarries and cement works. A fair amount of agriculture is also carried on.

The first serious efforts to establish railways in Gotland were made in 1870, but it was not until September 1878 that the first section of the Gotland Järnväg (GJ) was opened from Visby to Hemse, a distance of 56 km. The line was built to a gauge of 891 mm, as were all subsequent lines in the island, and the rails for this first section were supplied from Cardiff. A grand banquet was held in Hemse to celebrate the opening of the first railway in Gotland. The next portion of GJ to be built was opened in 1896 and ran north-east from Visby to Väskekinde. It was extended to Tingstäde in 1899, and finally completed to its northern terminus at Lärbro in 1921. Meanwhile, the southern route had been extended to Havdhem in 1900, and on to Burgsvik in 1908. The GJ thus ultimately consisted of a through route from north to south of the island 119 kms in length, but the northern and southern sections were normally worked separately from Visby.

In 1898 the Klintehamn-Roma Järnväg (KIRJ) was opened from



*Hesselby station on the Slite-Roma
Järnväg in 1906.
(Föreningen Gotlandstäget)*



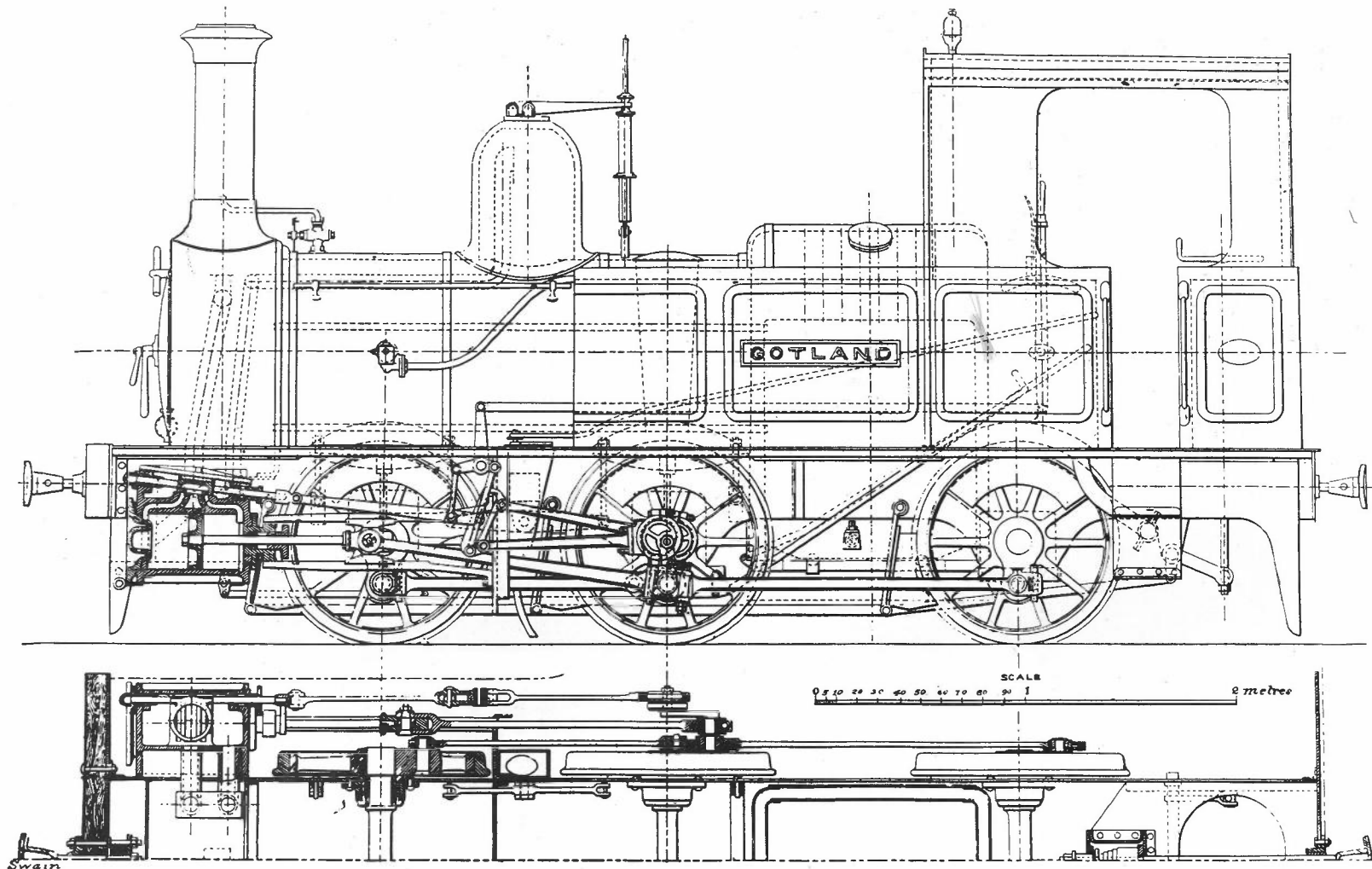
*The station building at Hesselby
in 1975, after restoration and
replacement of the track. In the
foreground stands a rail tricycle,
once common on Swedish
railways.*

(Gunnar T. Ljungdahl)



Roma on the southern line of the GJ to Klintehamn, and in 1924 Hablingbo was reached by the opening of the Sydvästra Gotlands Järnväg (SGJ). In 1927 the SGJ was taken over by the KIRJ, a logical step as the two systems formed on continuous route.

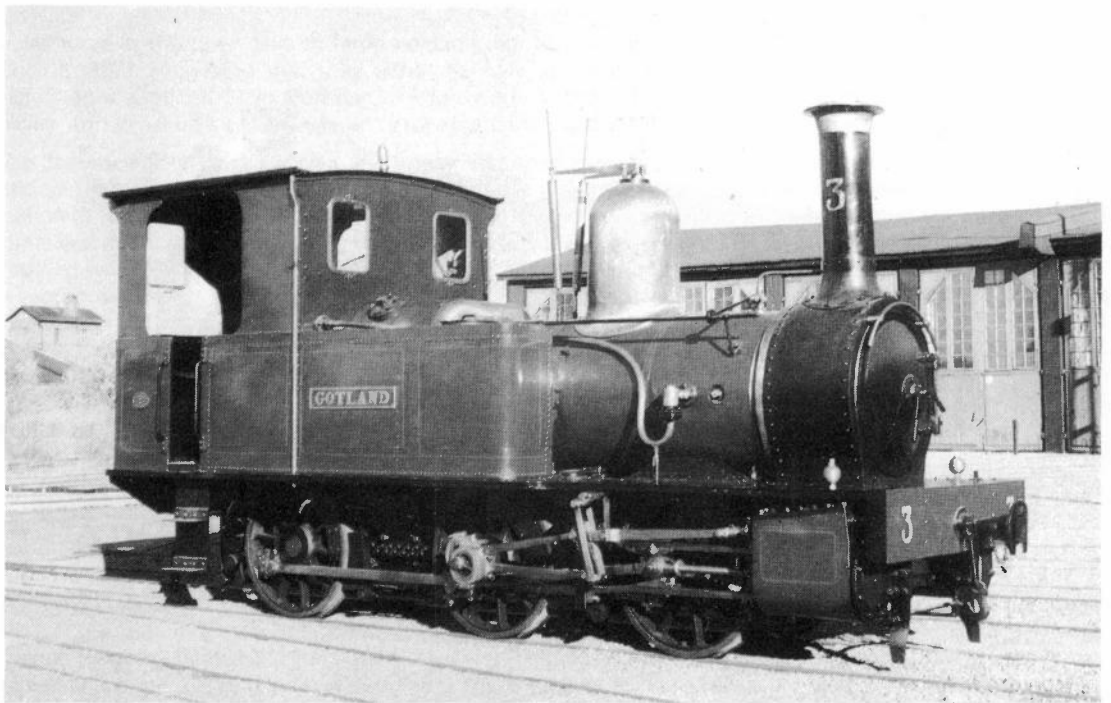
In 1902 the Slite-Roma Järnväg (SRJ) was opened from Roma to the port of Slite on the north-east coast. Roma thus became an important junction station. Two smaller lines were also built. The Ronehamn-Hemse Järnväg (RHJ) from Hemse on the southern line of the GJ to Ronehamn on the south-east coast, a distance of 10 kms, was opened in 1903 but had only a short life, closing completely in 1917. A short suburban line, virtually a tramway, was opened from Visby to Visborsslatt in 1904 and extended to Hallvards in 1912. This line was known as the Västerhejde-Visby Järnväg (VVJ), succumbed to bus competition, and closed in 1940, although the tracks were not lifted until 1946. The main system, consisting of the GJ, KIRJ and SIRJ, in common with railways elsewhere suffered increasingly from road competition, and the financial situation deteriorated. On 1st July 1947 they all became part of Statens Järnväg (SJ), the nationalised Swedish State Railways. This action



This engraving of GOTLAND, described as a goods engine, shows the locomotive as exhibited at the Paris Exhibition of 1878. The accompanying report stated: "The gauge of the line is 3ft. There are many sharp curves and steep inclines. The finish of the engine is very good, and similar locomotives are giving very satisfactory results in daily work."
(courtesy of the Editor, "The Engineer")



*An early scene on the Gotlands Järnväg, showing GOTLAND on a construction or track maintenance train.
(Föreningen Gotlandståget)*



*GOTLAND survived to become SJ 3063 in 1948, was withdrawn from service in 1955, and restored to original condition for display in the Swedish Railway Museum.
(Järnvägmuseum Gävle)*

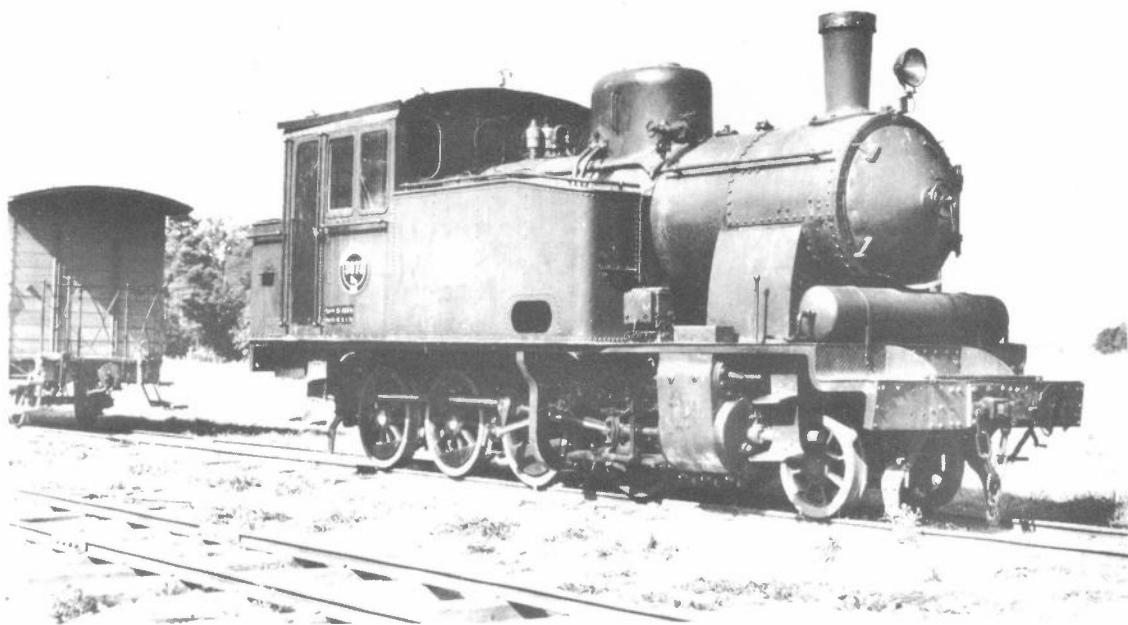
served only to delay the inevitable. In 1953 the lines from Roma to Slite and Hablingbo were closed, and in 1960 the whole GJ line from Larbro to Burgsvik closed down, bringing to an end rail transport in Gotland.

For the opening of the GJ in 1878 three 0-6-0 tanks were obtained from Nydquist & Holm AB (Nohab), Trolhättan, works 87, 88 and 89. They became GJ 1 WISBY, 2 POLHAM and 3 GOTLAND. A further example of the same type was supplied in 1890, and eight more locos of various designs followed from Nohab over the years, culminating in the 4-6-0 LARBRO in 1921. Finally in 1939 a 2-8-2 tank was built by Motala Verkstad. In an effort to cut operating costs diesel railcars were introduced from 1945, and in the last years of operation all regular passenger services were worked by railcars. By this time most of the steam locomotives had been withdrawn.

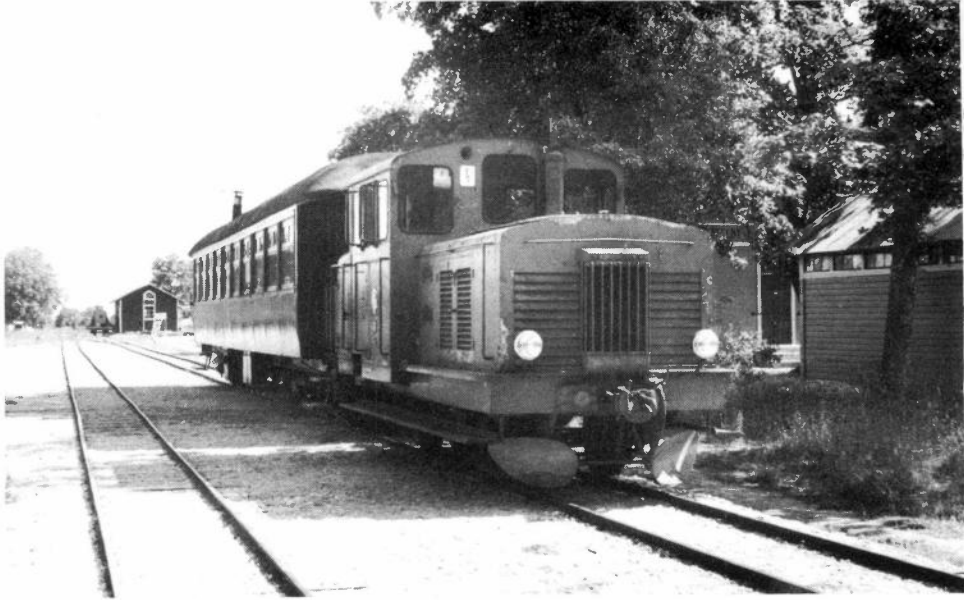
The KIRJ commenced operations with two 2-6-0 tanks from Nohab and two 0-6-0 tanks from Karlstad M.V., finally adding a 2-8-0 tank from Motala in 1936. The SIRJ began with two Karlstad 0-6-0 tanks, and in 1920 acquired a 2-8-0 tank from Henschel. The RHJ had one Karlstad 0-6-0 tank and a steam railcar, and lastly the VVJ acquired a Nohab 2-4-2 tank secondhand from the GJ, and also operated a couple of steam railcars. After the lines were amalgamated with SJ in 1947 diesel locomotives of class Z4p were transferred from the mainland, SJ having in the past owned a number of 891 mm gauge lines. In Gotland these were used for goods traffic and shunting.

As early as 1926 GJ began the introduction of road buses to act as feeders to its rail services, and over the years built up a fleet of buses which were, of course, acquired by SJ in 1947. As closures took place rail services were replaced by SJ buses, and now the whole island is covered by a network of routes. The fine station building at Visby now serves as the city's main bus station, its former railway function being still clearly recognisable. The adjacent workshops are still in use servicing buses and lorries, and one or two lengths of track remain in place nearby. There is also a length of track embedded in concrete on the quay at Visby harbour. In many locations the formation of cuttings and embankments can still be seen, and some of the former station buildings have been converted for residential purposes.

Following final closure in 1960 most of the rolling stock was scrapped or transferred to other SJ lines, but in 1963 a number of items were collected together to form a museum train in the former station yard at Roma. The



*Slite-Roma Järnväg No.3, DALHAM, built by Henschel in 1920, in its later condition as SJ 3073.
(Ulf Ronander)*



*The SJ class Z4p diesel locomotive and the restored bogie coach at Hesselby station,
July 1976. (N. T. Pitts)*

vehicles were in the open and suffered damage due to weather and vandalism over the years. The Gotland Council in 1971 suggested that they either be fully restored or scrapped, and as a result the Föreningen Gotlandståget (Gotland Train Society) was formed in Visby in February 1972 with the object of restoring the vehicles, and to set up a living museum to recapture the spirit of the railways that once served the island.

The Society started by purchasing the former station at Hesselby on the SIRJ, 6 kms from Roma, which had closed in 1953. The station building had served as a post office and bus stop for some years following the cessation of rail services, and subsequently became a repository for junk. Having completed the purchase, work commenced at once on restoring the buildings and laying track. This was pressed forward with such vigour that the station was ceremonially reopened on 13th October 1974 with a run of about a quarter of a mile. Whilst this was in progress the Society transported the equipment from Roma, and also acquired other examples of rolling stock, including a small diesel locomotive, class Z4p 312 from SJ on the mainland, examples of this class having worked in Gotland after the SJ takeover. This engine was used for the opening ceremony, and together with one fully restored bogie coach works passenger trains on open days. The steam locomotive from Roma, 2-8-0 tank DALHEM, No. 3 of the SIRJ and since 1947 SJ 3073, is undergoing complete restoration at Hesselby. It had not run since 1960 and its restoration on a voluntary basis with very limited facilities is bound to take time.

There are several coaches and wagons representing most of the different railway companies, some having been built by Fole Mek. Verkstad of Visby. There is also a 600 mm gauge 0-4-0 tank from Gotland United Limestone Quarries at Storugns in the north of the island. It is Orenstein and Koppel 12900/1937, and was Gotland's last working industrial steam locomotive. A stretch of 600 mm gauge track is being laid so that this engine can be steamed from time to time. It is intended to extend the main line to a total length of about 760 yards. The track bed is intact for this distance and a suitable agreement has been concluded with the present owners of the land. In March 1975 it was decided that the railway should be called Gotlands Hesselby Järnvägar, (Gotlands Hesselby Railways), the plural form being justified by having lines of two gauges. The membership of the Society is around 800, a most encouraging figure for a project of this nature, and the future of the scheme would seem to be assured.

In conclusion I would like to express my thanks to Mr. Gunnar T. Ljungdahl and Mr. Ulf Ronander of the Society for their ready assistance in supplying the information from which this article has been compiled.

"CALPE"

Kenneth E. Hartley

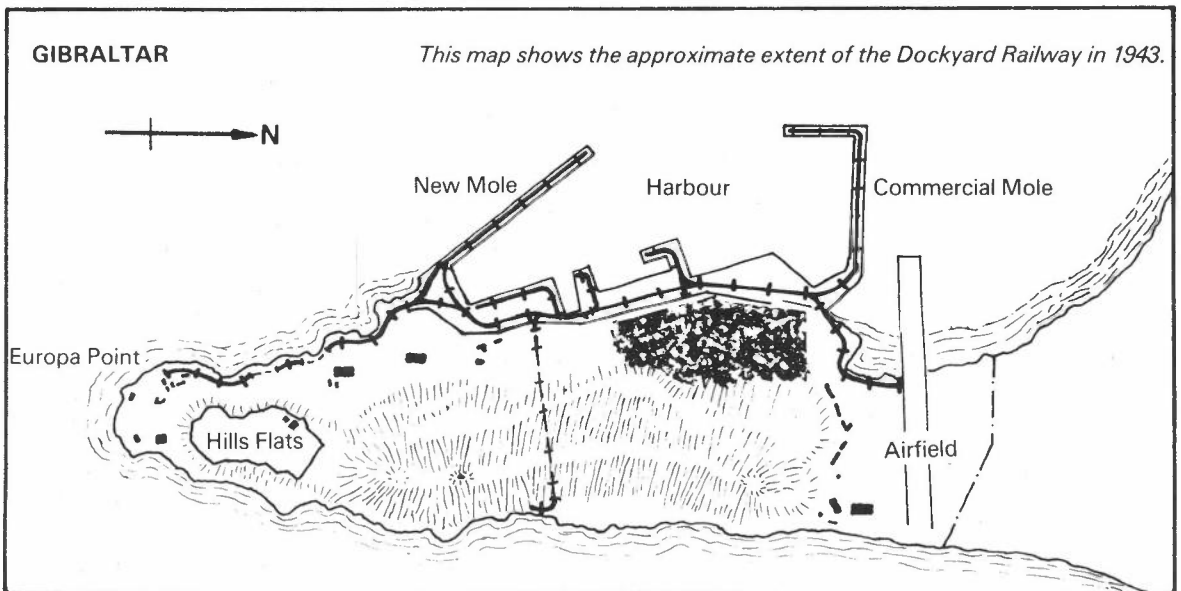
Probably very few people ever associate Gibraltar with railways—I must admit that I did not. Hence, after disembarking from a troopship at this famous harbour early in 1943, it came as a pleasant surprise to find quite a network of metre gauge tracks, and numerous items of rolling stock on the docks. As we marched towards the dockyard gates, just inside we passed a locomotive shed capable of holding at least four small tank engines, and obviously in active use.

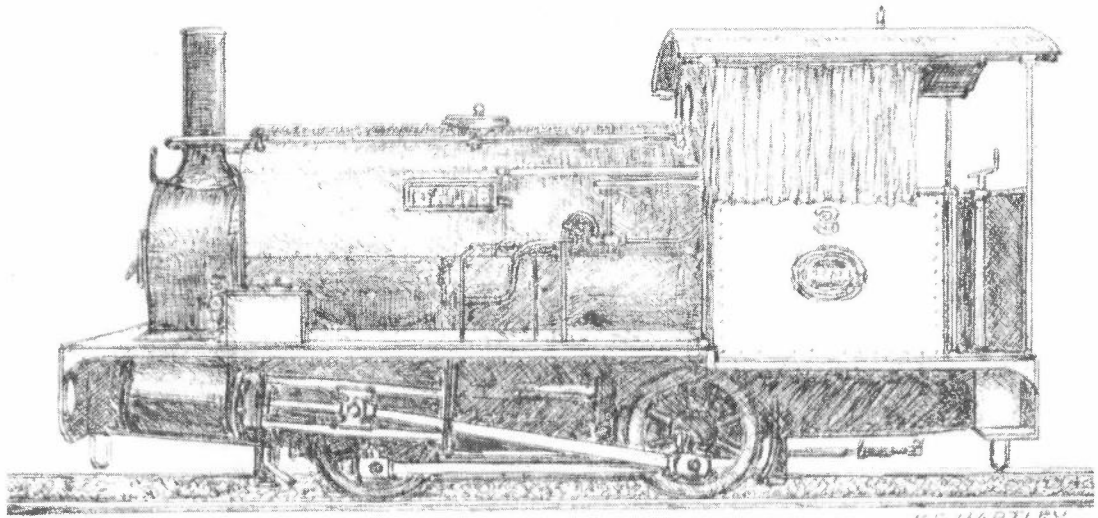
Our billets were in a disused convent about half way up The Rock, and it was soon obvious that we had a magnificent view overlooking the Naval Dockyard. Vessels of various types could be seen, while moving clouds of steam, and shrill whistling frequently confirmed that even more interest was in store—if only I could get to see it.

Our work, as Royal Engineers, was connected with the extension of the airfield runway, and to reach the site we daily travelled in army trucks along Wellington Front, on one side of which a single track branch line ran from the dockyard towards the Seaplane Base. It was here that I regularly saw a couple of neat, outside cylinder 0-4-0 side tank locomotives—part of a batch built for the Admiralty by W G Bagnall Ltd, and known as their Gibraltar class.

It was not of course possible to stop our truck and make a closer inspection of these engines, but No 4—Bagnall No 1752—was painted dark green, with black buffer beams, and No 6—which had no works plates—was a medium green all over except for the smokebox. The side tanks extended up to smokebox, and although the cabs originally had full back plates, the upper parts had been removed prior to 1943.

Later, on the only occasion I was again inside the Naval yard, two more locomotives were seen. One of them, bearing the name CALPE, hailed from Jack Lane, having been built by the Hunslet Engine Company as works No 746 in 1901, and had originally been despatched on 26th February 1901 to Messrs Topham, Jones and Railton for work on the Gibraltar Dockyard extension. It was a bigger engine than the Bagnalls, an outside cylinder 0-4-0 saddle tank with 10in by 16in cylinders, a domeless boiler, and a raised firebox surmounted by two spring balance safety valves. As built, the chimney had a large spark arrester, but in 1943 it carried a plain stove pipe. The footplate was slightly dropped, and had a canopy roof supported by four pillars, although a front sheet had been added later, and heavy side curtains provided. I saw CALPE fairly frequently, from some distance, and it was readily distinguishable even from our billets.





GIBRALTAR DOCKYARD RAILWAY

HUNSLET ENGINE CO. No. 746 "CALPE", IN 1943

CALPE. The name derives from "Mons Calpe", one of the two Pillars of Hercules, as Gibraltar was known to the ancient civilisations bordering the Mediterranean Sea.

The other locomotive seen on this memorable occasion was a rather massive and more modern looking outside cylinder 0-4-0 tank from Andrew Barclay in 1920, which I later learnt was No 8. She had a full cab with well arched roof, comparatively short boiler mountings, and was painted black. CALPE's livery, what was left of it, might have been dark grey, black, or even green, but it is certain that she carried No 3 in yellow paint on the cab sides. Presumably Bagnall No 3 had made its last run some years earlier.

Quite possibly there were other steam locomotives in use, but these four were the only ones which I saw and identified. There were also several internal combustion locomotives, though I saw only one, and at least one four wheel battery electric machine with a centre cab and sloping ends. I saw this only briefly from a distance, but was almost certainly a BEV product of 1918. The rolling stock included considerable numbers of grey—or red oxide-painted vans and open wagons, as well as steel tipping trucks and a number of special vehicles. There were also a couple of small four wheel tramway type passenger cars, tucked away in an odd corner of the yard, seemingly out of use. They never moved during my eleven months on The Rock, and had apparently once been for the use of VIP's and the "Top Brass".

This metre gauge railway served not only the dockyard area, but also the wharves and jetties, some of which were of considerable length. In addition to the Wellington Front branch, a fairly long line went in the other direction, towards Europa Point. After traversing a short rock cutting near the Gasworks this line twisted and curved a good deal, and ran past two or three miniature beaches, negotiating at least two spurs of rock by means of short tunnels. This was the most photogenic part of the railway, but saw little or no use in 1943-4 I think. In any case photography was impossible.

Another short line, of 60cm gauge I believe, commenced inside the dockyard and tunnelled for roughly 700 yards straight through The Rock, to finish near Sandy Bay. This was a permanent line but although I have no details of rolling stock, to facilitate tunnelling operations during World War Two temporary 60cm gauge tracks were laid, on which Jubilee tipping trucks were hauled by Hudson-Hunslet 20 hp four wheel diesel locomotives to remove the spoil. Much of this rock and considerable quantities quarried near Eastern Beach, went to form the 800 yd extension to the runway, built out into the sea.

My sketch attempts to portray CALPE as I remember her in 1943. Despite the stovepipe chimney and side curtains she was still an unmistakable Hunslet product, and a reminder of home so far away at the gateway to the Mediterranean.

A VIENNESE HOSPITAL RAILWAY

Klaus Matzka

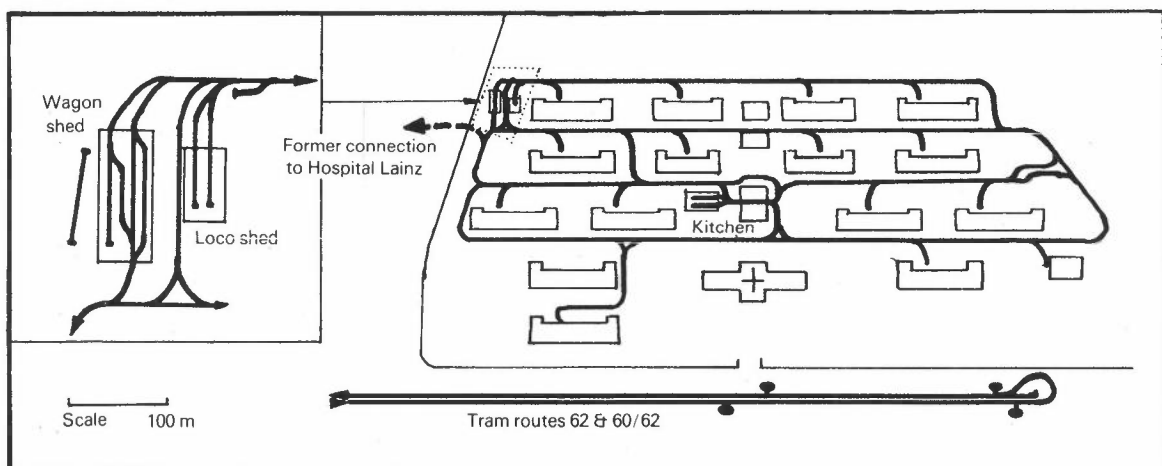
Austria is certainly narrow gauge country, but although the 760mm gauge lines of the ÖBB and provincial secondary railways are familiar to British visitors, many of the industrial railways remain totally unknown. However, when one of these is in the unlikely surroundings of a hospital, perhaps it is not surprising. Originally there were three railway systems in hospitals and convalescent homes in Vienna. The neighbouring hospitals of Am Steinhof and Baumgartner Höhe were served by a 600mm gauge network, electrified on the 500V d.c. overhead system. The second, a 500mm gauge system worked by small diesel locomotives, was at the hospital of Lainz, and a third, also 500mm gauge and originally connected to the second, still operates at Altersheim Lainz.

Altersheim Lainz is a rest home for the aged, built in 1902-04, and is owned and managed by the municipality of Vienna. The layout, as can be seen from the map, consists of a large number of separate buildings, known as "pavilions", and, to connect them with the central kitchen and services buildings an extensive railway system was built. This was used to distribute food, coal and linen in small wagons pushed by hand. Each pavilion had a short siding, reached from a turntable in the main line, which led to a lift to carry the loaded wagons to and from the various floors in the building.

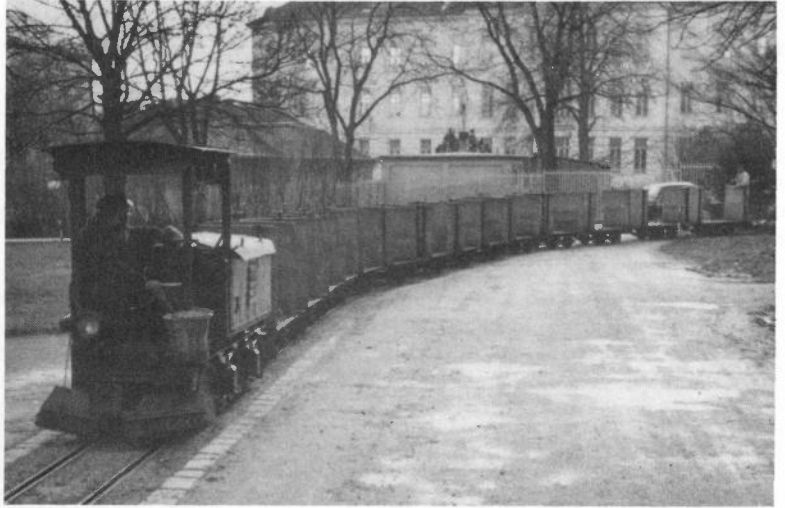
In 1925, to reduce the manpower required, the system was modified for locomotive operation. The turntables were replaced by points to allow direct working to and from the pavilions, and four 6kW battery electric locomotives were supplied by AEG. These carried running numbers 1-4, and works numbers 169-172. Three remain in service today, but although they carry numbers 2-4, they seem to be a mixture of parts from all the original four machines. When the adjacent system at the Hospital Lainz closed some years ago, the complete locomotive stock passed to Altersheim Lainz. This consisted of No 1, an 8kW battery electric by AEG/Goldeband (358/1958), and three 11kW diesel locos numbered 1-3, all built by Jenbacher Werke (1430/1966, 1076/1951, and 1101/1951 respectively.) These generally remain as spare engines, being used only for works trains and snow clearance.

Until recent years the wagons were small four wheel flats, with wooden ends and floors, and fitted with hand brakes. The railway is now responsible only for delivering food from the kitchen, and to accommodate new wheeled containers a fleet of about 40 new wagons was obtained. These are very low, with hinged sides to retain the containers in position while travelling, yet permit them to be wheeled on and off easily. Tubular steel end frames are fitted, and a narrow platform for operating the handbrake, which bears down directly onto the rails. The new system allows the containers to be unloaded before being taken into the lifts, a useful improvement over the original method, where numerous small pots were carried on each wagon.

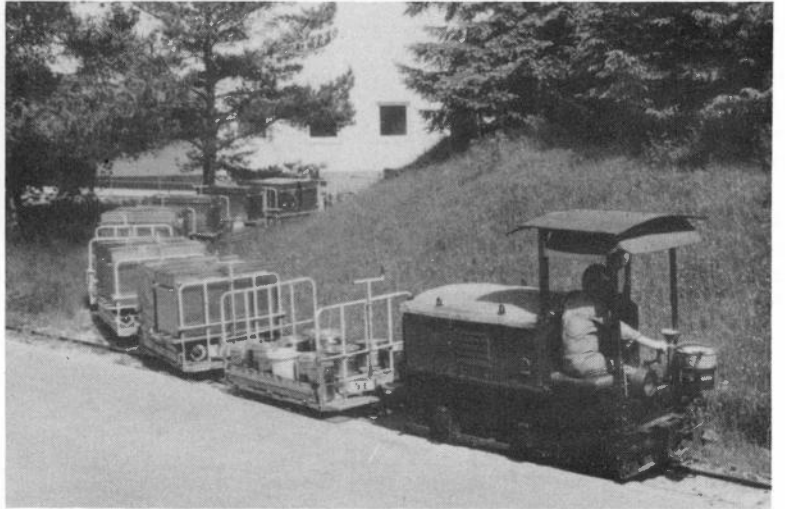
The system, which has a total length of 4km, still works perfectly. It is very economical, the small battery locomotives are virtually silent, and completely pollution-free. It can be seen in operation during the official visiting hours at the home, 13.00—14.30 on Tuesday, Thursday, Saturday, Sunday and holidays, and 18.00—19.00 on Wednesday. Altersheim Lainz is easily reached by tram routes 62, and 60/62 which runs on afternoons only.



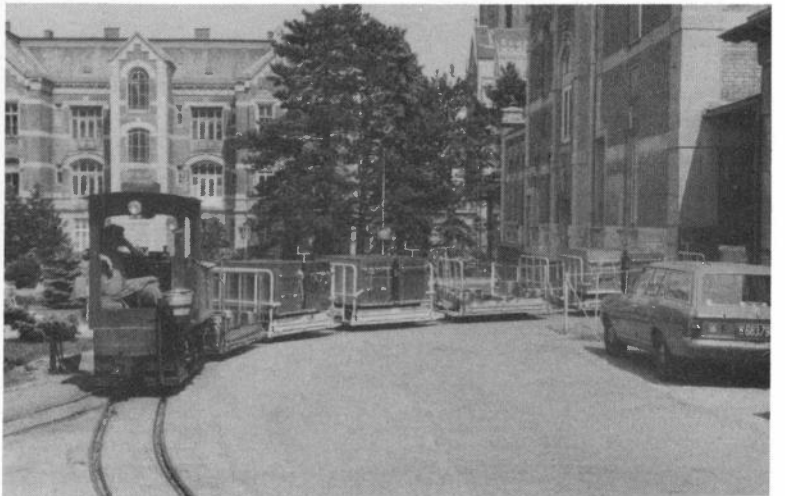
Battery loco 3 on a train of wooden wagons in December 1965. (K Matzka)



Loco 2, and a train of new wagons loaded with containers, surmounts a sharp, steeply graded bend. In wet weather the bucket of sand, and funnel leading to the rails is essential here. May 1979. (K Matzka)



Loco 1 waiting to leave the kitchen with a loaded train, May 1979. (K Matzka)



LOCOMOTIVES AT HATFIELD MOOR

Adrian J. Booth

Fisons Ltd operate an interesting 3ft gauge railway from their Hatfield Moor peat works near Doncaster, comprising approximately nine miles of track including sidings. Main haulage duties are the responsibility of two Simplex and two Hunslet locomotives, which bring wagons of peat from the moors either direct to the mill, or to a stockpile in the yard for eventual transfer to the mill. A small, imported Diema locomotive is usually employed shunting empty wagons, or taking equipment out onto the moor.

The two Motor Rail locomotives, works numbers 40s302 and 40s378, are externally similar 3½ ton machines, but have different engines. The former has a Dorman engine which develops 40 hp at 1800 rpm, and left the maker's works on 15th June 1967. The latter has a Dorman type 2LB engine which develops 48 hp at 1800 rpm, with a maximum tractive effort of 1960 lb, and has a two-speed gearbox with a maximum speed of 10.9 mph in either direction. Leading dimensions are: length over buffers 8ft 3¼in, height 6ft 0¼in, width 4ft, wheelbase 3ft 4½in, and wheels of 1ft 6in diameter. Works number 40s378 left the works on 22nd February, 1971, and is finished in green livery with black wheels and yellow coupler.

The two Hunslet locomotives, works numbers 7366 and 7367 of 1974, are examples of the maker's uprated 3½ ton version of their well known 29 hp class, and although the basic specification is for a cabless locomotive, Fisons' machines have large, glazed cabs fitted because of the exposed conditions on the windswept peat moors. Both are powered by Perkins 3 cylinder engines, which develop 43 hp at 2400 rpm with a maximum tractive effort of 2000 lb. The engine drives a simple, single speed forward and reverse gearbox, with final drive to both axles by heavy duty roller chains. Maximum speed attainable is 7 mph. Leading dimensions are: length over buffer beams 7ft 8¾in, height 4ft 8¼in, width 3ft 5in, wheelbase 2ft 10in, and wheel diameter 1ft 6in. Both are painted in a most attractive light, sky blue livery, with yellow and black striped buffer beams, and red Hunslet nameboard.

The "Diema" locomotive, works number 3543 of 1974, was imported from Germany, and is of the Diepholzer Maschinenfabrik F. Schöttler GMBH type DFL 10/1.1. It is fitted with a Deutz type FIL 411D aircooled diesel engine, which develops 9hp at 2000 rpm, belt drive from engine to gearbox, and chain drive to both axles. It has a two-speed gearbox, giving speeds of 4 and 8 mph in each direction. Leading dimensions are: length over buffers 1800 mm, length over buffer beams 1560 mm, height 1240 mm, width 1100 mm, wheelbase 800 mm, and



*The 48 hp Motor Rail locomotive, works number 40s378, at Hatfield on
9th April 1977. (A.J. Booth)*

wheel diameter 350 mm, with weight in working order of 1150 kg.

My thanks are due to Mr J T Carr, Fisons' works manager, and Mr M P Burgoyne, for help in the preparation of this article.



Hunslet Engine Co Ltd 7366 of 1974 standing in the yard at Hatfield Moor peat works on 24th March 1976. (A.J. Booth)



The Diema pauses between shunting operations at Hatfield on 24th March 1976. (A.J. Booth)

BELLMAN PARK QUARRY TRAMWAY

J.A. Hurley

In the nineteenth century a number of quarries and limeworks were established in the Ribblesdale valley, between Clitheroe and Chatburn in east Lancashire. The works of Ribblesdale Cement, and R Briggs & Sons Ltd will be known to most readers, but the firm of James Carter & Sons Ltd may be less familiar. Their Bellman Park quarry was opened a few years before James Carter took over its operation in 1869, primarily to produce burnt lime. A large, fortress-like bank of shaft kilns was erected beside the Lancashire & Yorkshire Railway about ½ mile west of Chatburn station, and to connect these kilns with the quarry some 750 yards distant, a tramway was laid, probably between 1870 and 1880. It may have originally been worked by horses, but chain haulage was introduced at an early date, and this form of operation continued for nearly ninety years. The track was laid with rolled, angle iron plates about 6ft long, spiked to wooden sleepers. There were no points, instead flat, square turning plates were used where the line changed direction. A horizontal steam engine was housed in a building on top of the kilns, and drove the haulage chain in a clockwise direction, out above one track, around an idler wheel at the quarry, and back above the other track.

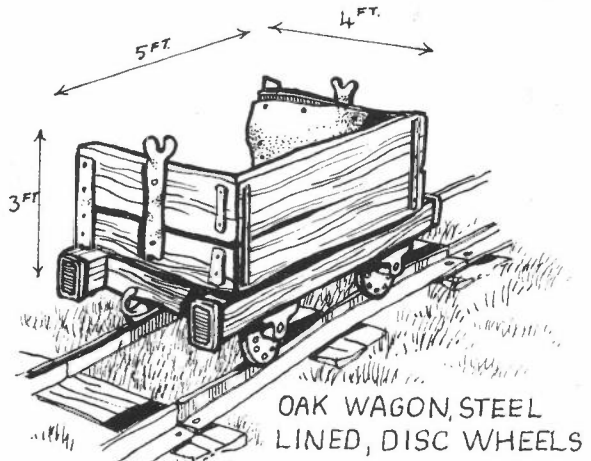
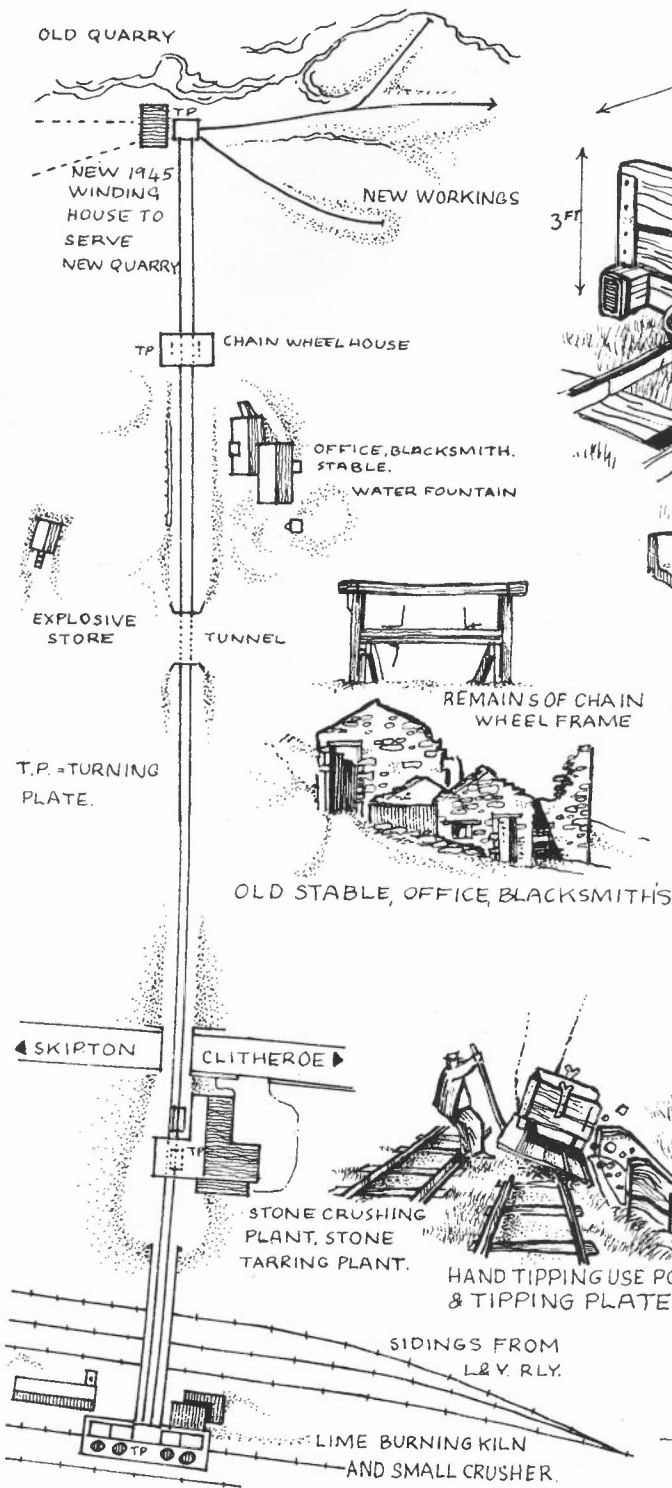
The wagons were loaded with broken stone at the quarry face, then hauled by a horse, or pushed by men over temporary track to a junction turning plate. From here a double line ran towards the idler wheel, a distance of about 200 yards, and served as a reception area for loaded and empty wagons. A horse pulled about four wagons at a time to the idler wheel, where they were run, one by one, beneath the chain to complete their journey to the kilns. The line ran in a cutting past the quarry office, stable and blacksmith's shop, passed through a short tunnel beneath a cart track crossing the fields, then took a straight and level course to a plate girder bridge across the main road from Clitheroe to Skipton. Immediately beyond this bridge stood a stone crushing and tarmac plant, and stone could be tipped into this plant from the embankment. A timber bridge spanned the main line sidings, and carried the tramway across to the top of the kilns, where a turning plate allowed the wagons to be detached from the chain and pushed to one or other of the kilns. One side of each wagon was open, and to empty the load at either the crushing plant or kilns it was run into a tipping plate, hinged at one side. A chain and hook secured the wagon in position on the plate, which was then lifted by a man using a stout lever, and raised at an angle to discharge the load. This required considerable effort, and made the tramway quite difficult to operate, especially for the man at the crushing plant, who had to operate a tipping plate in a line which also carried wagons to the kilns. Fortunately for him the chain ran fairly slowly.

The steam engine was replaced by an electric motor during the nineteen-thirties, and this drove the chain wheel through gears and a clutch. After some accidents, a bell signalling system was installed as a safety measure. Then, after the war, the quarry was excavated to a much lower level, and to reach these new workings a double track incline was laid. At the foot of this incline the track divided, and simple points were provided instead of the traditional turning plates. An electric motor housed in a concrete shed at the head of the incline drove a cable, so far as I can make out, which hauled up the full wagons on one track and lowered the empties on the other. Although these new workings extended the quarry reserves, they ultimately brought about the closure because an underground spring was encountered, resulting in flooding and the need to instal pumps.

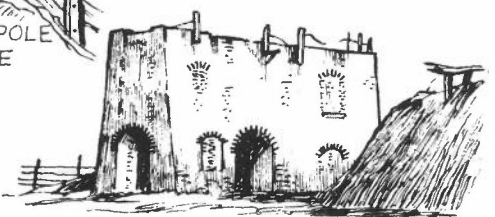
By the late nineteen-fifties the tramway was completely worn out, and was replaced by an old army lorry. Some of the better track was disposed of to a colliery on the moors above Bacup, but most of the equipment was just dumped. The cost of pumping finally became prohibitive, and the end was inevitable—Bellman park Quarry closed in 1959. The company went into liquidation, and the plant here, and at Salthill quarry was sold by auction on 24th March 1960.

Although I have located no photographs or accounts of the quarry operation in local libraries or museums, there are still substantial remains on the site. The kilns have defied any attempt at demolition, but the crushing plant has gone and the location is partially landscaped. The girder bridge over the main road survives, and the route of the tramway across the fields is still well defined. Very soon after the line became disused the short tunnel either collapsed, or was demolished. The quarry buildings are in a tumbledown state, but the water fountain, erected as a memorial to James Carter, remains as an unusual reminder of the man who developed this quarry. Preston Museum has expressed an interest in obtaining a sample of track, and perhaps a wagon from the flooded quarry, but to date nothing appears to have been done.

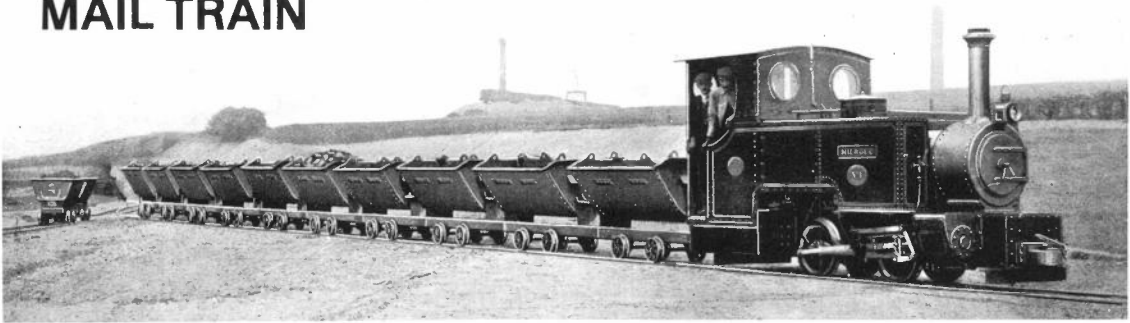
On the facing page is a sketch of the line, and my drawings will, I hope, give a better idea of this unusual operation. Had it survived a few more years it might have been preserved as a museum piece.



CHAIN SPIGOT ON WAGON
 THIS FOUNTAIN WAS
 ERECTED BY THE
 WORK PEOPLE OF
 SALT HILL AND
 BELLMAN QUARRIES
 IN MEMORY OF THEIR
 LATE EMPLOYER
 JAMES CARTER
 WHO WORKED AMONGST US
 FROM 1869 TO 1903



MAIL TRAIN



STEEPEST ADHESION WORKED GRADIENTS

Pursuing the above theme, may I draw attention to a series of articles by J.H. Price, entitled "Mountain Climbing sans Rack", in recent issues of *Modern Tramway*.

The July 1979 issue contains a table of steepest adhesion-worked grades still in operation in Europe and Japan. Many of these are on urban tramways, and the steepest gradient quoted is 1 in 7.4 on routes 12 and 28 of the 900mm gauge Lisbon tramways. The Pöstlingbergbahn at Linz, Austria, mentioned in Derek Bayliss' letter in *The Narrow Gauge No. 83*, heads the list of non-tramway lines with its maximum gradient of 1 in 9½, and a plaque at the summit station claims that it holds the world record of steepness for adhesion working. If we regard this line as a tramway after all, because it is worked by tramway-type cars, the steepest "real railway" appears to be the St Gervais-Vallorcine metre gauge line of the SNCF, with its 1 in 11.1 grade, also mentioned in Derek Bayliss' letter.

In this country, the steepest grades were undoubtedly on street tramways. I have no idea which held the record, but it would be hard to beat the short length of 1 in 8 at New Springs on the short-lived (1906-22) Aspall route of the Wigan Corporation Tramways. This was worked with double-deck cars, on the 3ft 6in gauge, until the Ministry of Transport suddenly realised, around 1921, that it did not normally allow top-covered, double-deck narrow-gauge cars on gradients of anything like this steepness, and insisted on the cars being cut down to single-deck.

NEWCASTLE, STAFFS.

E.K. STRETCH

Having instigated the esoteric and totally pointless series of letters on this topic, for which I am bitterly remorseful, here is my bid to have the last word on this amazingly irrelevant subject. The winner, as anyone who has read "The Stanton Coach" in No 75 will know, is the Grwyne Fawr valley railway immortalised by the Rev D A Tipper in *Steam & Stone in the Black Mountains*. Another first for Wales! The gradient here was 1 in 9, the gauge was 3ft and the line ceased to operate in 1928. So there!

LEOMINSTER, HEREFORDS.

E.A. WADE

LOUGH SWILLY MEMORIES

Many thanks for this article in No.85. I am reminded of a grand late evening session with Mr Whyte, Manager of the L. & L.S. when at 10 p.m. we had to break off to go to the door to see the last passenger train to Buncrana go by, (buses were taking over) and a footplate journey from Derry to Letterkenny on the legendary 4-8-0. Also the stormy trip across the Irish Sea one night in December 1954 to bring back one of the number plates from a Hudswell Clarke 4-8-4T, now on view in the Manchester Locomotive Society headquarters in Sale. I spent the night clinging to my bunk, and arrived in Belfast too late to catch the direct train over the NCC, so travelled by the 11.15 from Great Victoria Street as far as Strabane. Here, after suitable inspections, the journey to Derry was completed on the footplate of a County Donegal locomotive over the NCC 3ft gauge. Regrettably I never made another trip on either line.

KENDAL, CUMBRIA

HAROLD D. BOWTELL

BRUSSELS EXHIBITION LOCOMOTIVES

I was most interested to see the article in No.83 because I rode this line in the distant past. The track was a continuous circuit around the exhibition, with all trains working in the same direction down the severe gradient. From what I recollect of one section it would have been almost impossible to work trains up the incline.

GOLCAR, HUDDERSFIELD

R. P. LEE

The Tubize Pacifics do not appear to have been fitted with electric headlights as stated in the article. Closer inspection shows that the light is supplied by two tubes, indicating that it is an incandescent gas lamp, probably using a low-pressure air/acetylene burner. Air would be drawn from the brake system, acetylene either stored or generated on the footplate, perhaps in the cylindrical device mounted just in front of the cab on the right hand footplate. This was certainly a very late application of gas lighting—electric headlights had been mandatory in the United States, for example, since 1913 and one could scarcely call the small turbo-generator an untried concept in 1935. The mechanical lubricator seems to have been an afterthought, as it does not appear on works photographs of these locomotives. The brass plates attached to the smoke deflectors are an interesting example of sponsorship, frequently thought of as a recent phenomenon; but in fact it is only the garish, tasteless presentation of most sponsorship that is modern.

KENILWORTH, WARWICKS.

RODNEY WEAVER

THE PARIS EXHIBITION OF 1878

This article in *The Narrow Gauge No.83* included a Decauville advertisement which referred to sugar cane at Bourbon, and asked where this is. The *Britannica* and *Collier's Encyclopedia*, in their articles on Réunion, state that it was formerly called Bourbon. Réunion is an island in the Indian Ocean, between Madagascar and Mauritius, and is a French overseas Département. It was called Bourbon until the French Revolution, and again between 1815 and 1848, but I believe that the old name was unofficially used for many years after, which no doubt accounts for its appearance in an advertisement of 1879. Today there are apparently about a dozen big sugar estates with mills; I wonder whether any still have narrow gauge railways?

Réunion also had a metre gauge public railway, for about 80km from Pointe des Galets to St benoit and St Pierre. It ceased regular operation on 31 December 1963, but about 12km from St Denis to La Possession was kept, with three Billard A150 railcars and three trailers, for occasional use when the road was blocked by rockfalls. The section included three tunnels, of 4060m, 730m, and 5760m. It finally closed at the end of 1975 after road improvements.

EAST CROYDON, SURREY.

DEREK A. BAYLISS

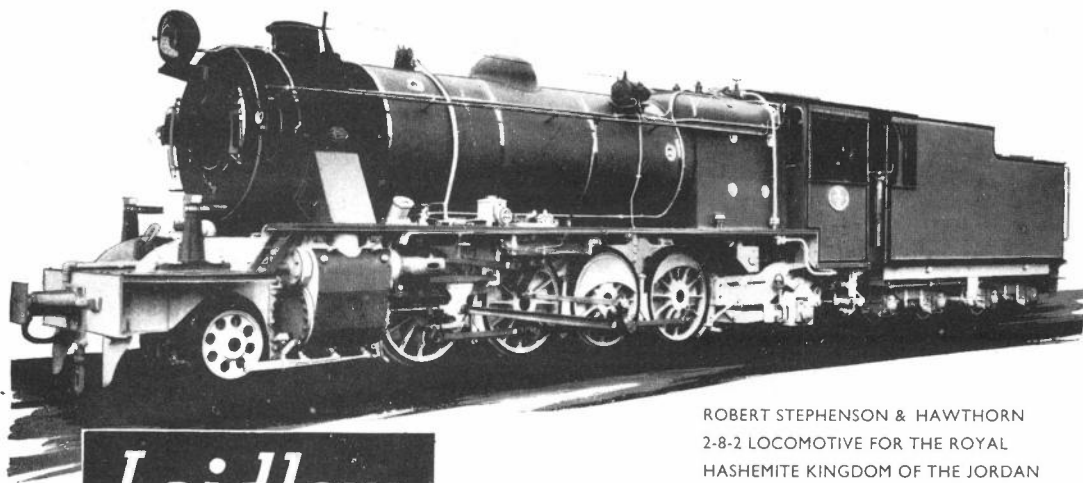
Another narrow gauge locomotive exhibited at Paris was the prototype Mékarski compressed air mining locomotive, probably the one introduced at Grassesac in 1879 shortly after the close of the Exhibition. It was of 600mm gauge, weighing 2.3 tonnes fully charged. I do not have any dimensions beyond those of the air reservoirs, which contained 1500 litres of air at 30 atmospheres; one charge could propel a gross load of 20 tonnes for 2½km. The locomotive was fitted with Mékarski's hot water saturator, mounted horizontally as on Porter tramcars and locomotives of forty years later; despite its obvious advantages this must have been a mixed blessing in the typical restricted workings of a European mine. The locomotive was part of quite an impressive display mounted by the licensees of Mékarski's two patents, tramway equipment predominating, but I have never seen any illustrations of any of the exhibits apart from the prototype tramcar. Do any members have such illustrations?

Regarding the introduction of Decauville's portable track, one notes the remark that there were four manufacturers of such equipment currently operating. Decauville had apparently been manufacturing since 1876, but who were his three contemporaries, and for how long had they been in business? Was Decauville in fact the originator of the all-metal portable railway, or was he simply the first one with the money to promote it successfully and thereby achieve prominence? Finally, why was the odd Corpet-Bourdon metre gauge locomotive described on page 17 displayed on the Decauville stand, instead of by Corpet himself? Was Decauville already in business as a railway equipment supplier as opposed to a manufacturer of portable track?

KENILWORTH, WARWICKS.

RODNEY WEAVER

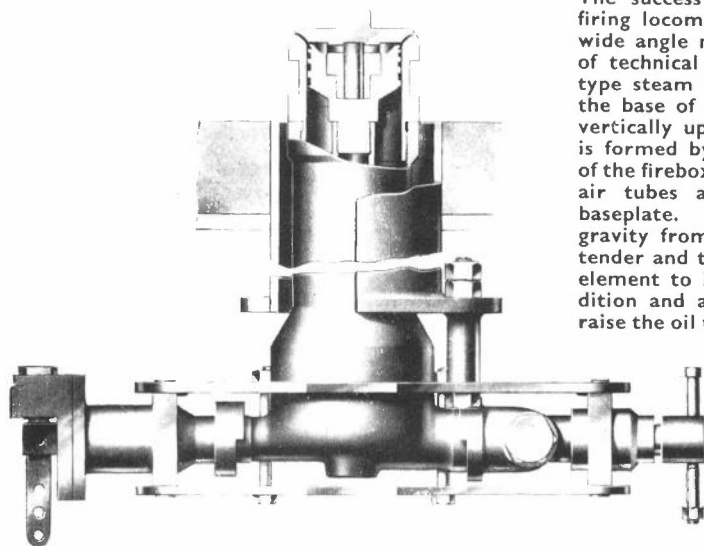
Oil Firing of Locomotives...



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This advertisement, published in 1955, features Hedjaz Railway 2-8-2 23, (RSH 7433/1951) shown on page 8 in this issue. The locomotives, essentially of the Indian "YD" type, were shipped fully erected to Beirut, hauled first to Damascus, then to Amman before entering service on the line to Dera'a.

(N. G. R. S. Library)