

Downhill all the way

Andrew Charman looks at one of the oldest forms of narrow gauge travel, and tries it out for himself...



The Ffestiniog Railway is not the only line to have made use of gravity trains, but it is without doubt the one forever associated with this most natural of propulsion methods. The line was built for a combination of gravity and horse haulage long before the age of steam, and the gravity trains were still running right up to when the FR closed following the outbreak of the Second World War in 1939.

The FR was opened in 1836 to carry slate from the quarries at Blaenau Ffestiniog, principally to the then Portmadoc (today Porthmadog) for onward transit by sea. The line's engineer, James Spooner, built it with a continuous downward gradient from Blaenau to Boston Lodge, on the opposite side of the Cob sea wall from the harbours at Portmadoc, and all trains were sent down by gravity, controlled by usually a pair of

Above: Charman's eye view as the gravity train descends the FR. Brakesmen ride on the waggons, guests in them. Uncredited photos in this feature by Andrew Charman

Below: Engraving of the FR shortly after opening. In the foreground a gravity train heads towards Boston Lodge with its horse riding in the back, while in the distance more horses are pulling their load over The Cob.

Image courtesy FR Heritage

brakesmen standing on top of the slate loads.

The trains also carried horses, travelling in bespoke waggons (to use the original terminology) called Dandys, the animal's job being to haul the empty waggons back up to the quarries. Trains would cross a couple of times on route and a fresh horse from the downward train would be swapped with one heading back uphill with its waggons in tow.

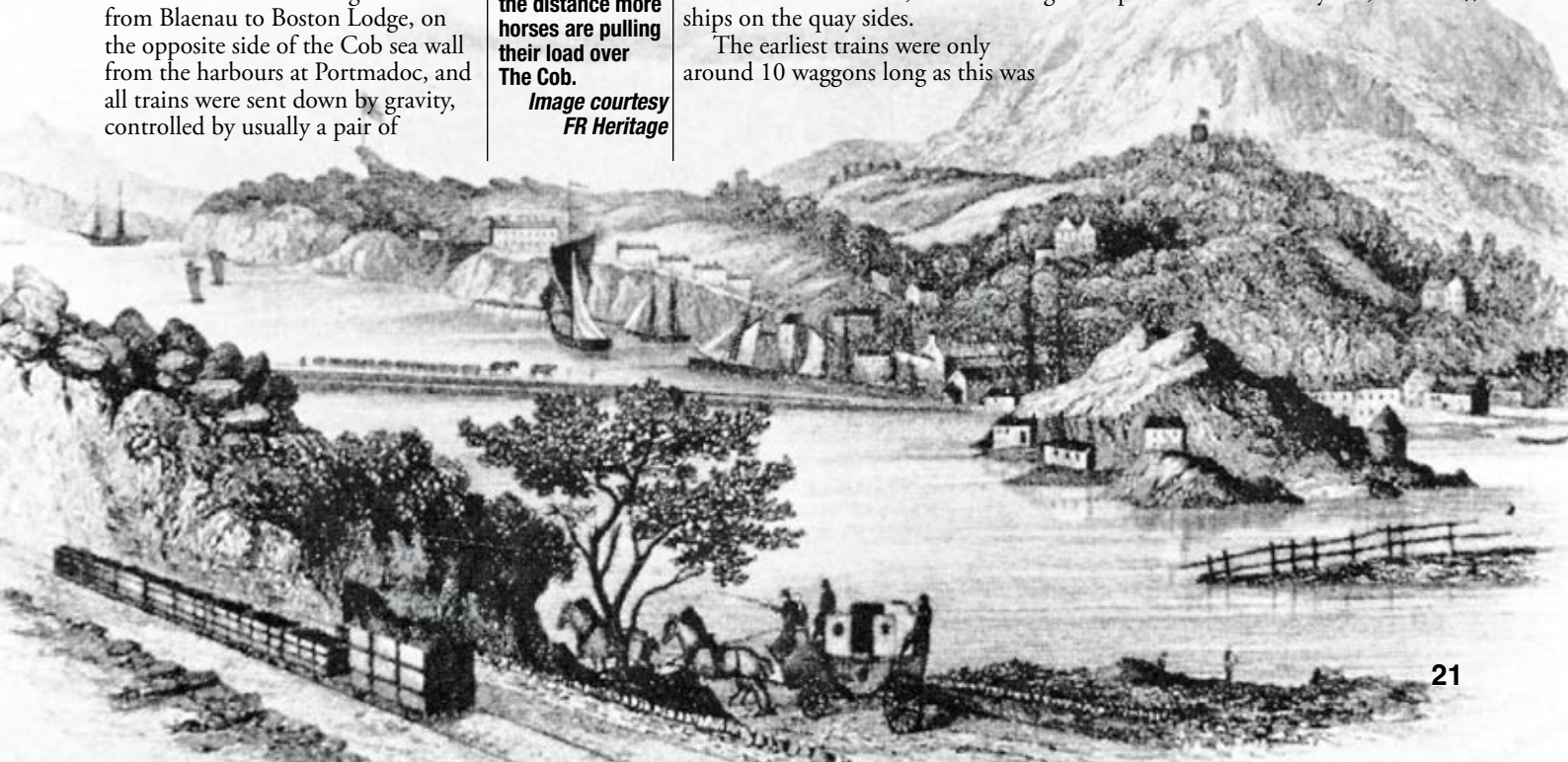
Arriving at Boston Lodge, at that time more a stables with its steam-age workshop status in the future, the slate loads would be weighed and further horses would take the waggons across The Cob sea wall, which was on the level, to the waiting ships on the quay sides.

The earliest trains were only around 10 waggons long as this was

the maximum weight that could be hauled by a horse. As demand grew the up trains were split into several sections as the down gravity trains extended in length, but the big change came in 1863 with the arrival of the first steam locomotives to replace the horses.

Non-stop travel

After this point the down trains could run without stopping from Blaenau to initially Boston Lodge and then from 1871 just slightly shorter to Minffordd, where new weighing facilities had been built. These were alongside the standard-gauge Cambrian line and some traffic was dispatched from here by rail, the rest »





continuing on by gravity to Portmadoc. A shunting loco was available at Boston Lodge to take the train over The Cob but reputedly some gravity workings reached sufficient speed to continue along the sea wall by themselves and even onto the slate wharves. From the 1920s transit around the wharves was controlled by the FR's two ex-War Department i/c locos, the Baldwin later named 'Moelwyn' and the Simplex later dubbed 'Mary Ann'.

The gravity trains eventually reached numbers of around 80 waggons and reputedly sometimes hit speeds of 40mph, all controlled by just three brakemen who would run along the top of the loads, adjusting the brakes as they went.

Gravity carriages

What, however, about the locos, once they reached Blaenau with their empty waggons? Well from 1865 the FR introduced passenger trains and

Above: The two brakemen take a seat as a gravity slate train passes through Minffordd station – note that both wooden and steel-framed waggons are in the formation.

Photo courtesy of FR Heritage

remarkably the earliest of these were also worked by gravity, mixed sets of goods waggons, carriages and finally the locomotive hung on the back. Perhaps unsurprisingly this method of working did not impress the Board of Trade, the then equivalent to today's Health and Safety Executive, and as the FR's passenger traffic grew both up and down trains became locomotive-hauled all the way, with rakes of slate waggons often attached to the rear of up passenger trains.

The down slate trains, however, continued to be operated by gravity throughout the entire pre-preservation history of the FR. Following the revival of the railway in 1955 there was some unofficial use of gravity working, primarily by permanent way or signalling department teams, while when the Deviation was built above Dduallt gravity trains were run to Tan-y-Bwlch which had road access.

In the mid 1980s the first demonstration gravity train was operated as an attraction at an FR Gala, to great acclaim, and the operating of such trains has become a regular feature at events ever since, particularly the October heritage

weekend now known as Bygones.

Much effort by FR members has seen the length of the trains steadily increasing as more waggons are restored for use on them. Following the receipt of a Heritage Lottery Fund grant the train run at the 2002 Vintage Weekend numbered 51 waggons and it has since expanded to 60, though operating trains of such length is not a regular occurrence due to logistical reasons – they don't fit in passing loops and require a lot of shunting during events that tend to have intensive timetables to keep to.

Investment and innovation

In recent times the train has been boosted by the Waggon Tracks project, resulting in a 90-metre long five-road shed being built at Minffordd to house not just the waggons already restored but several more awaiting restoration.

There have also been modern innovations to help with the presentation of the heritage. Current sets now include a couple of waggons with water tanks, both to add propulsive weight and if necessary to lubricate the rails if conditions make the set sluggish to start rolling along.



Above: The FR's gravity slate train in its modern incarnation – note how the lead brakeman, and his colleagues, have got their hands on the essential levers.

Photo: Chris Parry/FFWHR

Providing correct slate loads is another challenge and the heritage team even keep an eye out for houses undergoing roof replacements, in the hope of acquiring the traditional slate tiles that are being removed.

NGW readers will no doubt be disappointed, however, to learn that a ride on a gravity train remains a strictly invite-only experience and not something that can be booked – the health and safety requirements for making it a commercial venture

would certainly be a challenge... We can, however, continue to enjoy viewing the unique spectacle of a rake of waggons on the move and appreciate the continued embracing by the Ffestiniog Railway of a very important part of its heritage – long may it continue. **NGW**

■ Thanks to all at the Ffestiniog Railway, FR Heritage and the Festipedia web resource for making this feature possible.



Above: Heading up the line, with 'Merddin Emrys' giving a very close-up view of how tight the clearances are on the FR...

Below: The ledge along which the higher reaches of the line runs on is very evident as we begin our descent back towards Porthmadog.



We'll be coming down the mountain...

As mentioned above a ride on a gravity slate train really is a money-can't-buy experience. So your Editor felt particularly pleased to be standing on Porthmadog Harbour station platform on the first day of the Ffestiniog's Bygones weekend, receiving from head brakeman Geoff Hurlock a safety briefing that primarily consisted of; "stay sat in the waggon at all times until we tell you that you can move."

It's no longer possible to run gravity trains over the full line, due to the up grades that formed part of the deviation route built to traverse the reservoir that flooded the original trackbed, and today's trains usually start from Dduallt. But obviously to come down the line the train first has to be taken up and this is almost as exciting an experience, sitting behind double Fairlie loco 'Merddin Emrys'.

Fellow journalist Paul Appleton and I made a beeline for the closest available waggon, just two from the loco, and I can only compare it to being on the front end balcony of a Welshpool & Llanfair train out of Llanfair, but without the roof to protect one from particles expelled from the loco's chimney (or in this case, chimneys) – we were grateful for the issued safety glasses as our driver made some evil comment about looking forward to grit-blasting us...

There are some concessions to comfort for the 'guests', who are provided with redundant seat cushions from FR passenger stock – these are not very thick and on the metal floor of an unsprung slate waggon one before long experiences a somewhat numb posterior. Not that it matters!

Even behind the loco riding in a slate waggon provides a whole new view of the FR infrastructure that one simply can't see from a 'normal' train, the impressive stone embankments that a lot of the line is built on and particularly just how narrow the clearances are – this is a line built to a very tight loading gauge...

Once at Dduallt the loco uncoupled – it would return later coupled to the service train we now awaited. Once

that had passed through on its way up to Blaenau it was a simple case of Geoff yelling "all off", brake levers being released and away we went, the waggons gently gathering speed, though not too much. In a waggon progress can feel rather fast but today's trains stick to the line speed – no 40mph jaunts of past times...

Speed control is helped by there being rather more brakemen than in the pre-preservation era who now sit on their allocated waggon rather than running along the top of them. Our train, a modest 22 waggons, had 11 brakemen, Geoff communicating his requirements for brake assistance by holding up the requisite number of fingers.

At the back you learnt to look for these signals and brace yourself. The first brake at the front of the loose-coupled train causes the waggons behind to run into the leading one as coupling chains compress. By the time it reaches the back, what began as a gentle jolt can be anything but...

We had a skilled team of brakemen on hand as even two mandatory stops just before the Garnedd tunnel and outside Tan-y-Bwlch station were accomplished without two much teeth removal among those in the rear. On we went down the line, the only sound that of wheels on rail and the occasional jolt of couplings compressing, passing en route various photographers and videographers secreted at what in places seemed to be quite remote locations.

All too soon we were rounding the curve at Boston Lodge to come to a halt on The Cob, where the Manning Wardle 2-6-2T 'Lyd' was waiting to couple up at the back and propel us into Harbour station. By now the light was beginning to go, the slightest of chills in the air. The cushion had long ceased to have any softening effect on my behind and I was really looking forward to a cup of tea. But the moment we came to a halt and were told we could alight, the first thing I wanted was to do it again – truly a unique travel experience...



Above: Plenty of braking assistance on this trip – up front the head brakeman can be seen indicating with his fingers the level of activation required.

Below: Almost at the end as the train rounds Boston Lodge curve and slows to a halt – 'Lyd' waits to propel the rake into Harbour station.

