

## TRAINS WORTH MODELLING

# QR/QRN 'Sweeper' Freight Train Nos 243/752

*Lincoln Driver describes a Queensland train service, much associated with steel traffic, as it was during the 'noughties' (2000-2009). Photos by the author unless otherwise credited.*

As with the rest of Australia, steel products are a commodity that is carried by rail in Queensland. Unlike the other states of Australia, Queensland has never had dedicated steel-carrying trains. This is due in part to the considerably smaller amount of steel products being transported and the restrictions of having a smaller loading gauge as a result of Queensland's 3'6" (1067mm) gauge track. The only exception to this was the Queensland Rail/QR National (QR/QRN) 'sweeper' freight trains of the noughties (2000-2009) that ran on the North Coast Line (NCL) from Acacia Ridge (Brisbane) to the northern city of Townsville. These trains sometimes carried large quantities of steel products. The focus of this article will be on the mid-to-late noughties, which this author

remembers fondly from his time working for QR, but will include some information on the early noughties as well.

### The 'Sweeper' Train 243/752

QR/QRN's 'sweeper' trains carried a variety of goods such as timber, logs, petrol, diesel, oil, molasses, overflow container traffic, departmental wagons, new out-of-gauge coal wagons for the Central Queensland coalfields (both QRN and Pacific National) and of course steel products. It was also used for locomotive and wagon balancing/servicing purposes. On the odd occasion, this train could be comprised purely of wagons loaded only with steel products, however this was rare. This would only have been a result of not having any of the other loading on this train.

The term 'sweeper' train was given to this service due to the nature of its operation, as it would pick up (sweep up) and drop off wagons enroute to and from Townsville. The service number designated to this train was 243X in the down direction (northbound to Townsville) and 752X in the up direction (southbound to Brisbane). The character X at the end of the service number denotes the owner of the service, in this case the Intermodal business within QR/QRN. In the early noughties this service would run up to five times a week in each direction (Monday to Friday), but by the mid-to-late noughties it only ran up to three times per week in each direction.

During this latter period the northbound (243X) service departed Acacia Ridge on a Tuesday, Thursday and

▲ QR National northbound 'sweeper' freight train, Y243, hauled by GE locomotive 2820, is seen crossing Kanyan Rd between Theebine and Paterson crossing loops (between Gympie and Maryborough) on 5 May 2006. Unusually, the train is conveying steel products only to destinations north of Brisbane. Photo by Matt Green.

◀ QR National train, Y752, the southbound 'sweeper' is seen departing Glanmire crossing loop (south of Gympie) on 26 November 2006. GE locomotive 2814 is hauling Clyde/EMD locomotives 2501D and 2357 'dead attached'. Most of the rolling stock is made up of empty steel carrying wagons returning to Acacia Ridge. Other rolling stock of note in the consist are four VAOW woodchip wagons (converted from old coal wagons) which were being transferred to Acacia Ridge for eventual use in Western Australia by ARG (a subsidiary of QRN). There are also a few fuel tankers bringing up the rear. Photo by Matt Green.





On 3 November 2007, QR National northbound 'sweeper', Y243, was photographed just after it had departed Elliott (south of Bundaberg) with 2840 and 2494H towing locomotive 2602 'dead attached'. A good variety of wagons appeared in this train; a container wagon carrying a 40' open container loaded with timber products, followed by a single QLX lowbed van, three WSE water wagons (by this time these wagons were being used to transport molasses) and a fuel tank wagon. Steel loading (in the three types of wagons detailed in this article) has been marshalled in the middle of the train, with rail and sleeper carrying wagons at the rear.

QR Heritage Locomotive 1620 was transferred from Rockhampton to Brisbane on the QR National southbound 'sweeper', Y752, for overhaul/reactivation to the QR Heritage fleet. Only the leading locomotive, 2388, was powering on this occasion; 2842, 1620 and 2410D were all 'dead attached'. Empty steel-carrying wagons returning south are marshalled at the front of the train and empty fuel tankers (out of picture) are at the rear of the train. The train is seen passing through Bundaberg station in the afternoon of 13 January 2008.







◀ Solid round bar bundles loaded in a HWOS open wagon at Acacia Ridge on 11 March 2007. Photo by Arthur Hayes.



Saturday arriving in Townsville on a Wednesday, Friday and Sunday. The southbound (752X) service would depart Townsville on a Tuesday, Thursday and Saturday with the arrival at Acacia Ridge on a Wednesday, Friday and Sunday. Compare that with today; with the privatisation of the coal and freight businesses (Aurizon formerly QR National) it now only runs on an as-required basis, often only carrying departmental wagons and very little revenue freight.

The corresponding train number utilises the first three characters of the service number with the addition of a prefix character denoting the train type. In the case of 243/752 'sweeper' freight train, the first character of the train number differed depending on the motive power and the maximum train speed of that particular service (based on the maximum speed of rolling stock being conveyed). Most of the rolling stock on these trains restricted the maximum speed to 80km/h.

The list below shows examples of the first character of the train number:

- 6- 80km/h diesel-hauled
- 7- 60km/h diesel-hauled
- 8- 100km/h diesel-hauled
- C- 80km/h electric-hauled
- D- 60km/h electric-hauled
- F- 100km/h electric-hauled
- Y- 2800 class-hauled train, running between Rockhampton and Brisbane (maximum speed not applicable)\*

\*2800 class locomotives are out-of-gauge rolling stock between Rockhampton and Brisbane and this train ID character is used any time a 2800 class loco is marshalled in a train in this area.

The second character of the train number denotes the destination. In this case the "2" refers to Townsville and "7" refers to Acacia Ridge.

### Motive Power

There was a wide variety of locomotives used on 'sweeper' trains during the noughties. Both diesel electric and electric locomotives were used. However, if electric locos were used ex-Brisbane they had to be replaced with diesel locos at Rockhampton in order for the train to



▼ C channel and angle iron loaded in a HWOS open wagon at Acacia Ridge on 11 March 2007. Photo by Arthur Hayes.

◀ Bundles of steel rod loaded on a PFU flat wagon passing through Bundaberg on 21 October 2006. Note the use of timber dunnage between rows of bundles for ease of loading and unloading.



► Various types of steel could be carried on the same wagon, as depicted here with C channel and I beams loaded on top of plate steel on a PFU flat wagon, seen here passing through Bundaberg on 10 January 2006. As with the previous photo, timber dunnage is placed between the steel plates and the I beams/C channel to facilitate loading and unloading.



continue the journey north (Rockhampton is the northern limit of electrification on the NCL). The use of Clyde ASEA Walkers (CAW) 3900 class electric locomotives (EL) ceased after 2005, as the class was transferred from the Regional Freight group to the Coal and Mineral Group to assist in the expansion of coal services in Central Queensland (CQ).

From 2005, General Electric (GE) 2800 class and 90t Clyde/EMD 2170/2470/2300 class diesel electric locomotives (DEL) became the main motive power on these services. It wasn't uncommon to see a lash-up of different classes of locomotives on this service, although not all were providing power, instead being 'dead attached'. Locomotives of the 1720 class DELs also appeared on these trains from time to time, however this would normally be for locomotive balancing/servicing purposes. Occasionally, Central Queensland coal locomotives, such as the 2600 and 4000 class DELs, would be attached to this service to be sent to and from Redbank for repairs or overhauls. New locomotive deliveries to the northern coal depot would also be attached to this train.

Between 2008 and 2010, 45 Siemens-built 3800 class electric locomotives were shipped from Germany to Queensland, arriving at Brisbane's Fisherman Island port. They were then transferred to rail at Fisherman Island and railed to Acacia Ridge to then be hauled up to Yukan/Jilalan (near Sarina) on train 243 for eventual use in the Goonyella Coal System. The 3700 class electrics (converted by United Goninan in Newcastle from Comeng/Hitachi built 3100 and 3200 class) were also conveyed from Acacia Ridge to Yukan. An unusual locomotive transfer occurred in 2008, QR Heritage English Electric diesel (and class leader) 1620, was relocated from Rockhampton to Redbank for overhaul/reactivation to the QR Heritage roster.

### Steel Loading

Numerous types of steel products were carried on these trains, including plate, I beam, H beam, angle, C channel, tubing, plus solid round bar and reinforcing bars. These steel products were a part of a contract with BHP, having been brought up from the south on standard gauge trains to Acacia Ridge and then transferred to narrow gauge wagons. The steel products were then transported on 243 to northern cities such as Rockhampton, Mackay and Townsville. After unloading, these wagons would return empty back to Acacia



▲ Various sizes of I beams loaded on a PFU flat wagon at Acacia Ridge on 13 April 2006. Photo by Arthur Hayes.

▼ Long steel beams (up to 25m) could be carried using three PFU flat wagons marshalled together. As can be seen here at Acacia Ridge on 5 October 2007, the overhang of the long load is above the adjacent runner wagon by a minimum of 200mm, as required by the loading regulations. The 'runner' wagon could be loaded too, as long as its loading did not prevent the long beams moving through curves. Photo by Arthur Hayes.







◀ An empty HO open wagon, passing through Bundaberg on 27 November 2005.

Ridge on 752. In the early noughties, steel was also transported to Maryborough, Bundaberg, Gladstone and Cairns. QRN lost the BHP Steel contract in 2009/10, however some steel products are still carried today by Aurizon in the form of open-type container traffic, but the task is considerably smaller.

### Steel Carrying Wagons

QR/QRN utilised two types of wagons for carrying these steel products; flat and open wagons.

### Flat Wagons

One type of flat wagon was used during the noughties; the PFU flat wagon. Originally built as the QFX/QFC flat/container wagon (between 1965 and 1976), a total of 25 PFU wagons were converted and available for steel traffic by the end of September 2000. They were fitted with permanent timber bolsters across the wagon to assist with loading and securing devices. Permanently mounted securing chains and winches were also fitted. The tare weight of a PFU was 21.2t with carrying capacity on the NCL of 41.8t, giving a gross weight of 63t. PFU flat wagons would generally carry large steel plates, owing to the ability to carry wider steel plates than were possible within the confines of an open wagon. Some of these larger steel plates were out of gauge to QR's normal loading gauge, but were able to be transported with restrictions on what lines they were allowed to travel on (as allowed by the Manager of Special Loads).

It wasn't uncommon to carry other steel products, either separately or on top of plate steel up to the maximum weight permitted to be carried by the wagon. Utilising three PFU wagons marshalled together, 25m long steel beams could be transported. The beams would be loaded onto the middle PFU wagon, 5m of overhang would be across the adjacent two wagons (also known as 'runner' wagons). Extra bolsters made from sleepers were mounted on the ends of the middle wagon to reduce sag and ensure that a minimum height of 200mm above the floor of the runner wagon was maintained. The entire PFU class was withdrawn from service in 2009 at the completion of the BHP contract.

### Open Wagons

Two types of open wagons were also used for steel traffic. These were the HO and HWO classes of open wagons.

The HO class of open wagons was originally built in 1973, with a total of 250 made for general freight duties. They were the largest open wagon QR had (largest by cubic carrying capacity), more than doubling the size of the previous largest open wagon type. The tare weight



▲ Some empty HWO open wagons passing south through Bundaberg on 27 November 2005. The timber dunnage was left in unloaded wagons and used again for the next northbound load.

▼ A loaded HWOS open wagon passing through Bundaberg on 21 October 2006.





► Empty SCFU 20' open containers riding on PCZY container wagons passing through Bundaberg on 27 November 2005.



of the HO was 20.8t, with a carrying capacity on the NCL of 42.4t, for a gross weight of 63.2t. They featured two sets of swing-opening doors on each side and were less than ideal as access to load and unload the wagon was restricted.

Ironically, in 1992, 20 HO wagons were converted to the HOE class by removing the doors and painted white and green for BHP steel traffic. Some of these HOE wagons were written off in a level crossing accident at Wilmington (between Bowen and Townsville) in 1994. Some other HO wagons had their doors removed, but were not recoded to HOE and were used in captive traffic, transporting coil steel between Whinstanes and Acacia Ridge yard in the early 1990s.

With the move towards containerisation in the 1990s, HO wagons in general freight traffic were starting to become surplus to requirements. Like a lot of other surplus wagons, conversions took place to get more use out of them, such as PHO platform wagons, HOQ bulk cement, HOS concrete sleepers, HOA palletised loading and underframes for tank wagons, to name a few. All HO wagons were withdrawn from service in 2013, with the exception of six wagons that were sold to EDI for transporting Perth suburban electric train bogies from Maryborough to Acacia Ridge.

The HWO open wagon was originally built in 1977/8 as a general-purpose open wagon and was the last open wagon that QR purchased. Although they were the longest open wagon QR/QRN owned, they had a smaller cubic carrying capacity when compared with the HO wagon, owing to the lower height of the sides of the wagon. A total of 125 HWO wagons were built. They were fitted with twelve drop down doors (six on each side) which enabled easy access to loading and unloading of the wagon. The tare weight of the HWO wagons was 20.6t, with a car-

rying capacity on the NCL of 42.4t for a gross weight of 63t.

Like the HO wagons, the HWO were becoming less useful with the increase in containerised loading in the 1990s. In September 2001, 25 HWO wagons were recoded to HWOS for use as dedicated steel traffic wagons. These wagons were easily identified by the end doors being painted blue with white stencilling on the door stating: "Steel Traffic Only", "Return to Acacia Ridge when empty". From time to time, when the need arose, some 'standard' HWO wagons were also used for steel traffic up and down the coast.

After the BHP Steel contract expired some of the HWOS wagons found their way into general freight traffic, in particular the weekly Rockhampton to Winton freight service. The last remaining HWO/S wagons were withdrawn from active service in 2014. There are three HWOS wagons stored inside the Mt Isa Q-Link goods shed, three HWO wagons are in use by Queensland Rail at their Mayne depot for internal material storage and two more HWOS wagons have been purchased by a private owner. The rest of the class have been disposed of.

### Additional Wagons

A small number of half height 20' open containers fitted to container wagons (usually from the PCUY or PCZY class of container wagon) were used to supplement the above listed wagons for the BHP contract. These containers were coded the SCFU class and featured drop down doors on each side of the container to assist in loading/unloading of steel products. Their small size restricted how much they could carry. There were issues with these containers; the drop down doors were known to get lost in transit from time to time.

Other classes of wagons may have been used from time to time due to

demand, but the majority of the time the traffic was conveyed on 243/752 in the classes of wagon described here.

### Conclusion

By the end of the decade the QR/QRN North Coast Line 'sweeper' trains were what I consider one of the last 'interesting' freight trains to operate on the NCL, due to the variety of locos and wagons that were seen on them. Added to that was seeing the interesting steel products that were once carried by rail, almost all now lost to road transport. A decade later, almost all of the revenue freight trains on the NCL are made up of containers on flat wagons.

### Modelling

Quite a few of the locomotives and wagons mentioned in this article are available commercially in HO scale, in both r-t-r and kit form. The following list is by no means exhaustive (there may be low-volume specialist items available that we are not aware of).

### Locomotives

Southern Rail have available r-t-r versions of the 2300 and 2170 class Co-Co diesel-electric locomotives, and models of the 2400/2470 class were expected to be released soon as this article was being written. Wuiske Models/Haskell have produced r-t-r models of the 2470 and 1720 class Co-Co diesel-electric locomotives.

### Wagons

CGL Models has available r-t-r models of the HWO/HWOS open wagons, while PGC Scale Models produced a kit for the HO open wagon.

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