Network Rail's new high output ballast cleaning system for the UK - update

Plasser UK's Mark Simmons reports on the latest progress with the system's different elements and machines.

One of the themes of the update article in *Rail Infrastructure* Issue No: 111 was the visitors to the Plasser & Theurer factory in Linz, Austria, where Network Rail's fifth High Output Ballast Cleaning System (HOBCS 5) was being produced. Well, I think that just prior to writing this the last of those visits took place - a final inspection before departure of the 'core kit'. Yes, the RM 900 ballast cleaner, both power vehicles and the 09-CM tamper have a certificate permitting them to travel and are ready to go.

Next stop is Network Rail's test centre - the RIDC High Marnham (see page 34). Already at High Marnham is the first of the 09-2X tampers and the USP 5000 ballast regulator, with the second 09-2X on its way. The first of the tampers - the 09-3X - was sent to Plasser UK in West Ealing for the initial training and post-transit commissioning and will soon join the others at High Marnham. In the meantime, the MFS wagons have all been waiting patiently in Kingmoor Yard at Carlisle, ready for the signal to head down to High Marnham and begin the final stage - commissioning.

Commissioning

The first stage of commissioning following the post-delivery shakedown is simply connecting all the constituent parts together as a single train. Each of the machines has been individually tested and, as the production and delivery schedule allowed, groups have been tested together. However, the first time the entire system will come together is at the test and commissioning site and, when you are assembling the longest train permitted to operate in the UK, it is imperative it all works together.

The self-powered in running mode machines, the tampers and ballast regulators, require a number of UK specific items to be commissioned additionally upon arrival on these shores. The GSM radio, for example, while principally the same model as is in use in Europe has the UK SIM card sealed in - so it is not possible to commission it before it leaves the factory. The On-Train Monitoring Recorder (OTMR) is a new generation, in compliance with the latest version of the GM/RT standard. This requires a number of additional parameters to be recorded and also has new interfaces with the latest generation of GSM-R and AWS/TPWS. These now talk with the OTMR to be certain the data is being recorded and will not function if the connection is not made. The commissioning for these items has taken place in West Ealing on the 09-3X to ensure a smooth process before being rolled out to the other machines at High Marnham.

Pictured on this page are the ballast regulator machines from Network Rail's HOBCS 5. Top is the USP 5000 at High Marnham, while the other three photographs illustrate the USP 6000 undergoing final testing at the Plasser & Theurer workshops in Linz, Austria.

Right: Pictured at High Marnham is one of the 09-2X tampers.

Below right: The first of the tampers to arrive in the UK was the 09-3X as pictured here at Plasser UK's workshops, West Ealing. *Photograph: Alex Hall.*

Training and testing

In parallel with the initial commissioning, the operating and maintenance crews will be receiving the first parts of their training in preparation for the second phase - proving that the system 'does what it says on the tin'. This is the fourth RM 900-based high-output ballast cleaning system delivered to Network Rail, so the design concept and productivity, with all the elements matched in their operational output, are already well proven. The machines have been through their paces in Linz already to confirm the construction; however, there are a number of new features and functions which do require proving.

These tests include ballast cleaning with the third rail still in place - for which the third rail track was specially installed. The installation is described on page 34 of this issue. Additionally, the dust suppressions system and the cabin pressurisation will be proved in UK conditions. Furthermore, the automation systems - controlling all functions from within the cabins - will also be thoroughly demonstrated.

For this purpose, a team of commissioning staff from various parts of the Plasser & Theurer organisation are completing the final parts of their PTS courses and becoming acquainted with the facilities in and around High Marnham. They will join the Plasser UK staff and Network Rail crews, coming together to showcase the system. The experts will be there to take all the elements of the system through their paces at peak performance while training the Network Rail crews and helping them to be ready to maximise the machines from the first planned live shifts in January 2017.

Left: The RM 900 ballast cleaner ready to leave Linz to come to the UK.

Below left and right: The MFS wagons have arrived at High Marnham from Kingmoor Yard, Carlisle, ready for the commissioning to start. *Photographs: Peter Flynn.*