

# Crossrail's new engineering trains

Plasser UK's Mark Simmons details the group of machines that have been ordered and their uses.

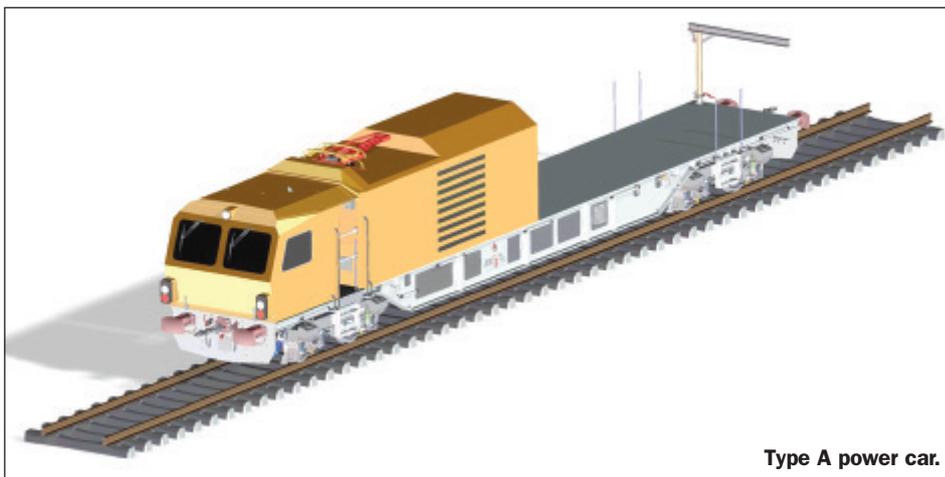
Crossrail has ordered two engineering trains from Plasser UK. These multifunctional, modular on-track machines will be used to carry out a number of maintenance tasks essential to the smooth operation of the tunnel section of Crossrail. The trains, ROBEL model 40.55, will be built at the company's factory in Freilassing, Germany. In total, the delivery will consist of four power vehicles and two modular transport wagons which can be configured together to form trains to carry out specific maintenance tasks. There will be three types of power vehicle which will all include a driving cabin at one end and have four hydrostatically-driven axles in two bogies.

## The vehicles

Power car type A has a large loading area at the rear and there will be two type B variants which will have a reduced loading area. Additionally, the latter will have a mess room with transit seating for 12 operators, a microwave, kettle, toilet and hand-washing facilities. The last power car - the type E - will also be equipped with a Palfinger crane mounted at the rear. Along with the transport wagons, which will be fitted with twist locks, will be a number of modules. These modules will be set up for each task the engineering train will be allocated. There will also be a manual gantry system for the replacement of half-sets of switches, a scissors lift access platform and wiring drum for OLE work plus a drainage cleaning module.

## Configurations

To configure a train requires one power vehicle with the driving cabins at each end of the formation. At least one of these will be a type B power vehicle to carry the operational staff. In-between can be none, one or two modular transport wagons depending on the task to be undertaken. For example, to replace a half-set of switches will require a type B power car, two modular transport wagons including the gantry system and one other power vehicle of any type. To replace a single rail section will require a type B power vehicle, one modular transport vehicle and a type E power car that is fitted with the crane for handling the lengths of rail. For OLE replacement, the requirement will be a type B power vehicle, one transport wagon for the OLE materials, another



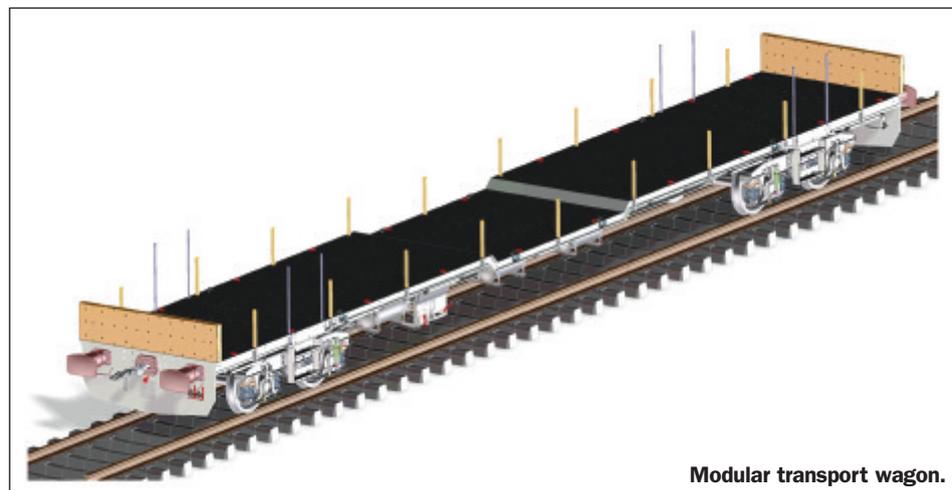
Type A power car.



Type B power car.



Type E power car.



Modular transport wagon.

transport wagon fitted with the scissors lift and cable drum and one power vehicle of any type. Drain cleaning will be carried out with a similar configuration, but the drainage module will take the place of the OLE modules.

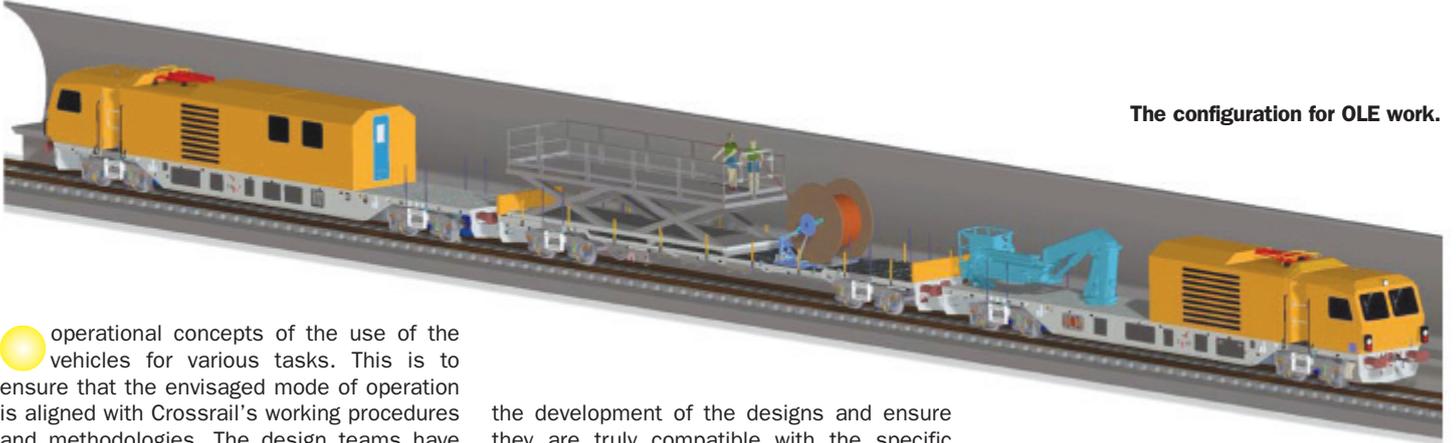
Of course, the vehicles will also be able to be used for a number of other routine maintenance tasks, for example cleaning the platform doors or loading/unloading equipment - such as replacement transformers - on to platforms in the tunnels.

## Work begins

The preliminary design phase of the project is now well under way with regular progress review meetings, technical queries and reviews and submission of documents. In fact, as part of this review process, the teams have met to discuss the detailed

## New Equipment

The configuration for rail replacement.



The configuration for OLE work.

operational concepts of the use of the vehicles for various tasks. This is to ensure that the envisaged mode of operation is aligned with Crossrail's working procedures and methodologies. The design teams have also had their first opportunity to walk through the Crossrail tunnel system to experience at first-hand what they have only seen in drawings or photographs. This will help with

the development of the designs and ensure they are truly compatible with the specific environment of the Crossrail tunnels.

The first unit will be delivered into service in August 2018 and the second by the end of September 2018. Of course, readers of *Rail*

*Infrastructure* will be kept up-to-date on the progress of the machines once the detailed designs begin to transform into metal.