

Appendix B - High Performing Depot Specification

INTRODUCTION

The idea to produce this specification arose from a cross-industry workshop in December 2007. The workshop aim was to challenge fleet people to deliver their next big step change in reliability. Asset improvement was one of the key issues, noting that good maintenance facilities and practices are just as important in providing reliable trains as modifications to the vehicles themselves. This specification for 'High Performing' Maintenance Facilities has subsequently been put together by active members of a subgroup.

The list of depot requirements which follows includes all the elements that you would expect to see in a modern, purpose built, train maintenance facility and is in line with what you would find in the rest of Europe. However, we recognise that one size does not exactly fit all, and recommend that the requirements should be customised for each project that involves new or significantly upgraded maintenance or servicing facilities.

It is accepted that in some cases it will not be possible to justify all the features on the list. However, when producing business cases, the true cost of not providing certain features should be taken into account. For example, not having space for storage of consumables at point of use could add several man-years lost productivity over the course of a franchise. Further, ReFocus has case studies of reliability improvements made by point-of-use stores implementation freeing up productive people to resolve root cause, address deferred work, etc.

The scope and design of new or upgraded maintenance facilities should take full account of depot flow (e.g. to minimise the number of movements between the different facilities within the depot), and should also be designed to minimise unproductive time and maximise the touch time on the vehicles.

There also need to be clear plans for overhaul and renewal of maintenance facilities. It is recognised the vehicles themselves have a finite design life, after which they are renewed, with periodic overhaul during their life. The same principles need to be applied to the facilities in which the rolling stock is maintained (although the design life of the buildings and equipment will be different). Responsibilities between the Infrastructure Manager and Lessee for renewal, overhaul and maintenance need to be clearly defined, as they are for rolling stock.

MAINTENANCE DEPOTS

Maintenance Berths

- Separate berths for servicing, light maintenance, heavy maintenance and lifting/major component change.
- No more than [80%] utilisation of any bay (based upon down time for both planned and unplanned activities, average unit mileage and maintenance frequencies).
- Some flexibility provided regarding the use of bays for different activities.
- All berths to have extraction equipment for diesel emissions (DMU depots only).
- Able to isolate OHLE or 3rd rail for each road separately (EMU depots only).
- All berths to have shore supplies, air supply and battery charging points.
- All berths to have pneumatic supply and power points.
- Foot-printed areas to be provided next to each bay for oil storage etc.

Suitable pit lighting to be provided.

- Access to pits to be provided at each end and at intermediate points.
- [Where justified] A bogie drop pit to be provided in at least one maintenance bay. It should be possible to place any bogie within a normal unit formation over the drop pit without fouling other roads or having vehicles stood outside the building.
- All clean fluids (oil and coolant) to be piped to point of use.
- All waste fluids (oil and coolant) to be piped from point of use.
- Side pits and centre pits to be provided in all servicing and light maintenance bays. Centre pits only to be provided in heavy maintenance bays. Pits to be designed to suit the type of rolling stock being maintained.
- Fixed roof access equipment in at least one berth. Further berths to have roof access in line with the production use of the berth.
- At least one set of jacks suitable for a synchronised lift of a full unit in normal formation to be provided. Where justified, separate jacks should be provided for heavy maintenance and for planned component change.
- Each berth should have depot protection designed around one unit of normal length. (Depot protection required across the whole site.)
- An overhead crane to be provided in at least one heavy maintenance bay and on any jacking road.
- Fork lift truck access should be possible on both sides of each bay. **Paint Facility**
- As a minimum one berth to be provided with extraction equipment to allow touch up painting.
- For larger depots consideration should be given to providing a dedicated paint facility.

Fuelling Facilities

- The length of fueling roads to be capable of accommodating maximum length of formation of arrivals on depot.
- Fuel road capacity should be based upon each road being turned over no more than [6] times per night.
- Fuel dispensing equipment should allow all vehicles on a fuel road to be fuelled simultaneously.
- The fueling area should be covered.
- All pipes should be suspended off the ground and trays provided to collect spillage.
- IT system at fuel point to allow fuel registration or input of defects.
- Equipment should be provided to allow fluids to be topped up at the fuel point.

Underframe Cleaning Facility

- Automatic underframe cleaning equipment should be provided, which is capable of cleaning the full length of a unit in normal formation.
- Lances to be provided to allow localised cleaning of the underframe.
- Access to the underframe cleaning facility should be provided direct from the depot arrival roads.

- More than one boiler should be provided to give an element of redundancy to the underframe cleaning equipment.

Wheel Lathe

The wheel lathe should be capable of exporting data to industry systems.

- A ground wheel lathe should be provided [on a ratio of 1 lathe to 300 vehicles].
- The wheel lathe road should be long enough to allow any vehicle of a normal unit formation to be placed on the lathe without the need to split the unit.

Wash Plant

- The wash plant should be capable of working at temperatures down to [-3]°C.
- A device is to be provided to warn drivers if they exceed the required speed, except where it would distract drivers, as exit signals are present.
- The wash plant should be capable of cleaning the vehicle roof and side skirts.
- Wash plant brushes should cater for all types of vehicle allocated to the depot.
- The wash plant should be capable of working on soap, acid or water only.
- The wash plant should be fitted with a basic underframe cleaning system and full biohazard kits to deal with fatalities etc [if proven].
- Provision should be made for automatic vehicle identification.

Controlled Emission Toilet Emptying

- Should be capable of simultaneous emptying of all toilets in a typical rake.
- Should be capable of emptying a CET tank from full in no more than [5] minutes.
- Covered accommodation should be provided for the operator.
- A facility to manually discharge CET tanks should be provided.
- The CET emptying facility should be at the fuel point if necessary.

Stores etc.

- Covered storage to be provided for all components, including large items such as engines and gearboxes.
- Space should be provided adjacent to each bay for the storage of tools, low value consumables and other components for efficient exchange at the point of use.
- An area to be provided where major components can be built up.
- Workshop facility to be provided for the in-house overhaul of components.
- Electronics clean room to be provided.
- Jobbing shop, including small welding facility to be provided.
- Adequate workshop and messing facilities for subcontractors.
- Load bank or dynamometer facility.

Office/Staff Accommodation

- Sufficient accommodation to be provided in the form of offices, mess rooms, meeting rooms and classrooms.

- There should be a mixture of open plan and enclosed offices.
- Easy to maintain messing facilities and locker room facilities should be provided.
- Mess room to be shared with traincrew if possible.
- An area should be provided for a communication centre and for start of shift briefing etc.
- A depot IT network should be provided that is fast, efficient and future proof (including the provision for IT at the maintenance berths).

Space for train crew cab simulator – better to have at maintenance depot to ensure fleet and operations relationships are cemented.

Cleaning Facilities

- Cleaning facilities to be covered where possible.
- Access platforms to be provided.
- Shore supply to be provided.
- Hot and cold water to be available adjacent to vehicles.
- 13 amp power points to be provided.
- Storage facilities to be provided.
- Mess room to be provided adjacent to cleaning facilities.
- IT facility to be provided to allow inputting of work done.
- Dry room for seat covers, carpets etc. Dry cleaning facility, where justified.

Stabling Facilities

- Sufficient stabling berths to be provided that, under normal planned circumstances at peak time for departures, will not be more than [90%] utilised.
- Ideally each departure road should not accommodate more than 2 rakes of units.

Access to Depot

- Access between the main line and the depot arrival road should ideally be provided at both ends of the depot.
- Each arrivals road should be long enough to accommodate the longest foreseeable rake of vehicles that will arrive on the depot.
- The depot should have a simplified signaling system that is operated from the production office, but complex depots may require a more substantial control panel.
- Electrified depots should have an independent power supply such that off-depot isolations do not affect depot supply.

Depot Environment

- Adequate lighting and safe walking routes to be provided around the depot.
- Depot to be securely fenced.
- Security facilities to be provided at depot entrance.
- CCTV to be provided covering the depot entrance.
- Sufficient car parking to be provided for the foreseeable depot workforce.

- Road access to be provided for a low loader (in case of moving vehicles by road).
- Lorry turning circles for stores access, and road access for stores at correct end of depot, without need for isolations or line blocks.
- Depot to be very close to a triangle, or within one, to enable reorientation of train sets or vehicles.

Light Maintenance Depots

At a typical Light Maintenance Depot the facilities under the above sections on Fuelling Facilities, Cleaning Facilities and Controlled Emission Toilet Emptying should be provided as a minimum. In addition at least one light maintenance bay should be provided, as described in the above section on Maintenance Berths.

Servicing Locations

At a typical servicing location the facilities under the above sections on Fuelling Facilities, Cleaning Facilities and Controlled Emission Toilet Emptying should be provided as a minimum.

