

# Bischheim improves its TGV refurbishment capabilities

**LEAN** Workflow changes and staff empowerment have helped to improve productivity and reduce the time taken for SNCF to refurbish its TGV fleets.



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SNCF's high speed train workshop at Bischheim in the suburbs of Strasbourg has recently started work on mid-life refits for TGV Duplex trainsets, dealing with more than a dozen sets a year. The plant and its 1000-strong workforce have considerable experience in refurbishment and renovation of TGVs, but the arrival of the aluminium-bodied double-deckers posed some new challenges.

To prepare for the project, SNCF's maintenance subsidiary Masteris has been working with Paris-based management consultancy Marris Consulting to streamline its operations, building on a relationship which has developed over the past five years.

Technicentre Bischheim is SNCF's oldest TGV maintenance centre, undertaking heavy maintenance and repairs for the TGV Sud-Est and Atlantique trainsets. It also provides maintenance for complete sub-assemblies such as bogies and doors.

In 2006-09, Bischheim played a key role in preparing for the launch of TGV Est services from Paris to Strasbourg, southern Germany and northwest Switzerland. It was responsible for refurbishing 19 sets of TGV Réseau trailer cars to form multi-system POS trainsets, including installation of the new interiors developed by Christian Lacroix.

In 2007, half-way through the programme, the factory management launched a programme to improve performance, known as *Bischheim à Grande Vitesse*. Marris Consulting was brought in to help streamline the refurbishment process. Using various techniques including the Theory of Constraints, Marris Consulting helped the Technicentre to halve the downtime for renovation, cutting more than 30 days from the time each trainset was out of service.

The first step for the consultants was to analyse the movement of vehicles through the facility and the flow

of new or overhauled spare parts, and identify any logistical bottlenecks. As a result, the workflow was reorganised on product lines and the shop-floor teams given more responsibility. The production scheduling was revised to synchronise operations and the movement of the vehicles between the different workshops.

These changes allowed the workshop managers to co-ordinate their efforts and adjust the pace of work as required. To accelerate the process, the overhaul of components removed from the train was managed as a single flow, rather than treating each batch of parts separately.

The changes resulted in a reduction in the average downtime from 70 to 38 days, even though the work required on each trainset had increased from 25 000 h to 37 000 h to incorporate the Lacroix interior design changes.

## Mobilise and communicate

For Technicentre Operations Director and BGV Project Manager

Bruno Maggioli, the success of the project resulted from 'a massive mobilisation at all levels throughout the factory'. Marris Consulting staff worked alongside the team leaders in the workshops for the whole of 2008. Significant investment was made to improve the layout and working conditions. Throughout the project strong communication ensured full alignment and common ownership of the ambitious targets.

Communication continues to play an essential role, with 'before and after' photo albums showing each step forward, helping everyone to assess the progress that has been made.

The approach has since been rolled out to several of SNCF's other Technicentres, whilst Bischheim is improving its productivity still further. The site has successfully adapted its organisation to deal with the aluminium-bodied Duplex sets, which required several changes to the technology and working practices. ☞



Shop-floor staff were consulted and given more responsibility for the workflow.