



CASE HISTORY

Technical data

- Axle configuration: Co' Co'
- Length: 20.98 m
- Width: 3.12 m
- Height: 4.75 m
- Service weight: 150 t
- Capacity: 2240 kW/3000 HP
- Vmax: 105 km/h (110 km/h hauled)
- Fuel capacity: 10,000 l
- Temperature range: -0°C to +55°C

Molinari contribution

The main tasks of Molinari were as follows:

- Selection of suitable used locomotives in the US
- Selection of a suitable local partner (including workshop)
- Preparation of specifications for the retrofitting and refurbishment of the locomotives
- Definition of spare parts packages
- Project management and manufacturing supervision

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Modernization of type SDL 40 locomotives for Saudi Arabia

The challenge

At InnoTrans 2010, Molinari received an inquiry as to whether it would be possible to refurbish used US diesel locomotives and adapt them for use in the Saudi Arabian desert and for the extreme operating conditions in that region. In addition to these technical challenges, it was also required to meet the strict budgetary and schedule-related expectations as well as the specified operational reliability.

Successful implementation

Molinari accepted and successfully completed this challenging task together with a US partner from its international network. As part of this project, suitable used SDL 40 locomotives were located and refurbished, and required modifications were made. They included:

- Reduction of maximum axle load from approx. 30 tonnes to a maximum of 25 tonnes
- Installation of a third filter stage for the air supply (diesel motor, compressor, other ventilation units) to protect against

damages resulting from the intrusion of sand and dust

- Installation of driver's cab air-conditioning for use in desert conditions

In addition, all critical components and sub-systems were subjected to a thorough inspection and were partially refurbished/modernized.

Following the actual retrofitting works in the Midwestern United States, the locomotives were completed and painted at the main workshop of one of the world's largest railway companies in Pennsylvania, and were subsequently shipped to Saudi Arabia through the port of Norfolk/VA.

Only six months through-put time

The processing time in the workshop was only six months. The locomotives have been in use with container trains of up to 4,000 tonnes every day since January 2012. Based on the positive experience, two additional locomotives have been ordered since.

