

black burn

Retro fitment of driver's cabin in old diesel locomotives of Indian Railways with new, state of the art, interiors made out of Fibreglass Reinforced Composites.



Retro fitment of driver's cabin



Indian Railways has a large fleet of diesel locomotives which have been in service for over several decades and there is a need to upgrade the service conditions of the drivers manning the same. The well being of the engine driver is vital to the lives of millions of traveling public and addresses an important safety issue.

With the initiative of Ministry of Railways, retro fitment of old diesel loco with improved driver's cabin interiors has been done. This will improve the safety of train operations.

- ◆ Long haul runs will now be easily affordable by drivers because of less driving fatigue.
- ◆ Quality of driving will get enhanced because of improved cabin lay out and driver friendly ergonomics.

The project was spearheaded by Railway Board, New Delhi, Diesel Locomotive Works, Varanasi, Diesel Maintenance Works, Patiala and Research Design and Standards Organization, Lucknow in association with TIFAC (Technology Information, Forecasting & Assessment Council), a unit of Deptt. of Science & Technology, Govt. of India.

Indian Institute of Technology, Mumbai conceptualized the project.

The cabin was manufactured by Black Burn & Co. Pvt. Ltd, Kolkata and was retro fitted by Diesel Loco Shed of Western Railway, Ratlam



The outcome of the efforts of all the above agencies has resulted into a Driver's cabin which has several improved features as below;



1 Aesthetically pleasing interiors

- ◆ No more a clutter of instruments mounted here and there.
- ◆ Panel surfaces with granite granular finish in right form and colour.
- ◆ Large windows providing unobstructed view.
- ◆ Aircraft like roof panels.

2 Improved safety & ergonomics

- ◆ All instruments within easy reach of the driver.
- ◆ Dome shaped control panels facilitate eye contact between the drivers.
- ◆ Increased space between control desks facilitates easy movement inside the cabin.

- ◆ All gauges at eye level facilitate driver's concentration on the track with minimum diversion of his attention.
- ◆ Adjustable driver's chair with back cushion.
- ◆ Control desk design provides space for hand rest to the driver.
- ◆ The design and location of Loco Inspector's seat, built into FRP panel, provides clear view of track and signals. The assistant driver therefore need not be disturbed during foot plate.

3 Improved Lighting

The air craft like roof design provides for diffused lighting which does not hurt the driver's eyes and makes night driving easier for him.

4 Heat Insulation

All the side panels, roof as well as the floor of the cabin are made of Fibreglass reinforced composites. These inherently offer heat insulation and provide comfortable temperatures inside the cabin both in summer and in winter.

5 Other features

- ◆ Reduction in noise level inside the cabin because FRP floor and panels inherently offer sound insulation and rattle less than metal panels currently used.
- ◆ Improved flooring using anti skid and abrasion resistant silica embedded PVC sheet pasted on FRP floor.
- ◆ Fire retardant as compared to inflammable Plywood currently used in the floor.
- ◆ No sharp corners thus offering injury free features.
- ◆ Urinal cum wash basin provided to cater to natural requirements of crew especially for long run passenger trains when there are no halts even for 4 to 6 hours.

