



Organizational Set Up:

BLW has a design and development office responsible for all engineering functions related to locomotives. Equipped with extensive designing tools, this office provides service support to Zonal Railways / Locomotive Maintenance Sheds and Locomotive Overhauling Workshops. This office is also responsible for product development, vendor development and vendor approval. It also performs technical advisory functions and coordination with RDSO/Railway Board on technical matters

Chief Design Engineer heads this office and is assisted by a team of technical experts

2. Functional Responsibilities:

The functional responsibilities of Design and Development Office are: Design development of new locomotives, Import substitution /indigenous development of loco component, multi-sourcing, day-to-day design matters raised by sheds and workshops, liaison with Research Design and Standards Organization of Indian Railways, liaison with supply chain partners in respect of technical matters. Technical matters connected with Loco Standards Committee, Diesel Maintenance Group etc., providing technical clarifications in respect of design/specifications & important tenders. Failure investigations into major assemblies/critical components.

- Design & development of HHP Diesel Locomotives and Up-gradation of technology.
- Technical support to BLW shops and Diesel sheds.
- Technical support to Marketing, RITES, IRCON etc for Export/NRC locos.
- Preparation of Drawings, Specifications and Product structure of BLW products.
- Indigenization & Multi-sourcing of HHP Loco items.
- Failure analysis and Reliability Action Plan for HHP Loco.
- Vendor Review and publication of Vendor Directory.
- Co-ordination with Railway Board, RDSO, CLW, Zonal Railways and Industries.

3. Major Locomotive Design Projects:

I) Locomotive design projects currently in hand.

HHP

1. Mozambique Loco- 3000 HP CG AC-AC
2. Dual Mode Loco (WDAP5)
3. New cost effective diesel to electric loco conversion scheme 6/WAG 11 (version 4.0) using E-locker of WDAP5 (Dual Mode) Loco

4. Standard gauge bogie suitable for export potential of old serviceable HHP loco
5. Design of 2200 hp up country loco for Sri Lanka.

ALCO

1. 1350 HP WDSA6DT Locomotive with Microprocessor based excitation and propulsion control system with split AC.

II) Significant Locomotive Designs developed in recent years:

1. 1350 HP Myanmar Export Loco



2. 3000 HP Dual cab Ac-Ac Srilanka loco



3. WAG11 HHP to electric conversion Loco Version-1(First Locomotive no. 29001).



4. WAG11 HHP to electric conversion Loco Version-2(First Locomotive no. 29002).



5. WAG11 HHP to electric conversion Loco Version-3(First Locomotive no. 29003 & 29004).



6. WAGC3 Alco to electric conversion Loco Version-2 (First Locomotive no. 10001A & 10001B).



4. CAD FACILITIES



Existing

- Design Office is equipped with High end Modeling & Analysis Software and CAD workstations along with Blade server system.
- Design office is working on Team center engineering PDM (Product data management) software, using Unigraphics 3D modeling Design software and Teamcentre 11.4 &UG-NX 11 versions. These software all used for modeling, clearance analysis , dimensional analysis, cable routing ,piping & harnessing design modification , system integration and load analysis. The available software enable
 - Controls the engineering data base
 - Revision Control
 - Release Control
 - Duplicacy of components
 - Better fitment of the components

Software

- Teamcenter Engineering PDM
- Unigraphics NX 3D CAD Software
- NX Nastran
- Auto CAD 2D

Hardware

- Blade server System – 1no.
- CAD workstation – 23 nos.
- Plotter – 01 no.
- Laser Printer A3/A4 – 3 nos.
- High speed Networking

- 2 X 20 KVA central UPS system – 1 no.

Printing Room facility

- A0 Size Colour scanner and printer – KIP 7172 – 1 no.
- A0 Size B/W scanner and printer DDS-8830 – 2 nos.

5. Training and HRD:

- Training has been assigned special importance. Regular training of technical personnel design office is organized for proficient use of modern designing and drafting tools like CAD & PDM. To strengthen the available human resources, training in areas of FEA, Computer-aided calculations & advance design skills is planned. Great stress has been given to harness human resources effectively.