

**Summary of Visit to
Rail Wheel Factory – Yelahanka on 10th Dec 2020 and
South Western Railways – Mysore on 11th Dec 2020**

The requirements captured during the visit and suggested by Railways is listed below.

Requirements from RWF – Bangalore

Mentioned that currently not planning to procure machines but are considering automating the plants, processes, supply of spares and training aspects.

Automation in:

- 1) Manual Lancing (O₂) in Furnace – Risky (sanctioned work – to be automated)
- 2) Charging of Limestone & Ferro Alloys in Furnace
- 3) Centering of metal Charge over Furnace
- 4) Addition of Rice Husk in Riser holes of Mould at Pouring Station
- 5) Cleaning of Hot Moulds to remove Sand from the Riser Pads
- 6) Material handling in VTL shop
- 7) In-process measurement and Inspection of final finished product
- 8) Axle and wheel Cutting

Others:

- 9) Machines supplied should fit in the space available (foot print & Floor area related constraint)
- 10) Replacement of VTL supplied by Premier industries for rough and finish turning
- 11) Axle machining Requirement : HTL for turning, SPM for drilling, tapping (future)
- 12) Wheel and Axle assembly line – Service support initially and replacement in future
- 13) Requirement of spares for machines supplied by Foreign companies
- 14) Chip handling related – Breaking, conveying, compacting
- 15) Training – online included; RWF is already using IMTMA training facilities
- 16) Indigenisation of certain parts and components

Mr. Sanjeev Kishore, Principal Chief Mechanical Engineer of RWF, mentioned that Joint Working with Indian industries is possible and urged machine tool industries to come together as a consortium and contribute. He gave the example of ISRO where in 144 companies are working together and contributing. He suggested a consortium approach under IMTMA for offering solutions for Railways.

Enclosure: Presentation by RWF- Yelahanka

**Visit to Rail wheel Factory and SWR- Mysore on 11th December 2020;
Requirements of SWR-Mysore**

1. Automation, data capture related activities in the entire process (RFID based)
2. Automation in working, inspection, record keeping and record transmission in Workshops
3. LHB Bogie disassembly and assembly line with Industry 4.0 standards : LHB Bogie Frame Manipulator, LHB Bogie Bolster Manipulator, LHB Bogie Component Pressing Gadgets: Control arm / pivot bush, Ball joint Roll link, Ball Joint Traction lever, Miner pad,
4. Upgradation/Improvement in infrastructure and augmentation of maintenance and manufacturing capacity of Mechanical workshops
5. Modernization of Wheel shop with an additional overhauling capacity of 500 wheel sets per month using automated material handling equipments such as Rail Guided Vehicle (RGVs),

Two tier wheel parking, POKA YOKE concept (training & implementation) for bearing inspection & assembly with feedback system to ensure 'mistake proofing' and Industry 4.0 enabled tools.

6. Mechanized LHB bogie washing and drying.
7. LHB bogie fastener torqueing and recording as per the bogie coach wire.
8. Rubber bonded metal / bash identification in bogie / barcode system
9. Control arm, Ball joint Roll link, Ball Joint Traction lever, Traction centre, elastic joint checking process automation
10. Reduction in dependency on shunting loco by installation of surface traverser between Carriage body repair, AC and Paint shops.
11. Anti-roll bar bearing extraction from bracket
 - a. Anti-roll bar bracket extractor from antiroll bar and also assembly.
12. Development of Spring Testing Machine including spring loading, unloading, stamping and related automation.
13. Technology for disassembly of used Axle and Wheel
(Discarding worn out Wheel and for saving Axle part which is good)
14. Development of Wheel shop and Basic training Centre as a Centre of Excellence with enhanced facilities

Other :

Mr. O P Shaw, Chief Workshop Manager, requested for a virtual portal for Railways in IMTMA website for uploading their requirements and getting response from IMTMA membership on a continuous basis.

Enclosure: presentation by SWR workshop, Mysuru
