

# Role of C&W Workshop, Objectives, Organization, Layout, Activities of different shops

# Planning

- Corporate planning is initiated in the Board.
- Need for additional capacity in workshops, Production Units, running sheds, or depots or for altogether new units is identified at the corporate level.
- These decisions are based on Five Year Plan projections including traffic trends, major expansion proposals and modernization needs.
  - Board advises the concerned Railway, the broad objectives for initiating the proposal.
  - Zonal Planning is done at the zonal headquarters, for meeting the requirements of the zone.
  - Plans are also initiated at unit level either to replace the assets, improve quality parameters of their activity, such as reducing cycle time, or for improving reliability/working environments etc.

# Corporate objectives of IR

- a. To provide rail transport for both passenger and goods adequate to meet demand in areas where Railway operation confers optimum benefit to the economy, having due regard to the Government's policy of development of backward areas ;
- b. To provide such rail transport at the lowest cost consistent with
  - i. requirements of the Railway users and safety operations,
  - ii. adequate provision for replacement of assets and some provision for development of business and
  - iii. the least amount of pollution of the environment ;
- c. To work in association with or utilize other modes of transportation, such as pipelines and road transport, and to engage in ancillary activities necessary to sub-serve the above two objectives ;
- d. To establish a corporate image of the Railways as being an up-to-date business Organization With the interest of the public and of the nation as its prime objectives ; and
- e. To develop organizationally effective personnel with pride in their work and faith in the management.

# Mission Areas for Rolling Stock Production & Maintenance Department

- a. Evolving optimal designs for Locomotives, Coaches and freight wagons, choosing the most economical option on a “life cycle basis”
- b. Manufacture of the rolling stock Production units or external Manufacturing Units to stringent standards in a cost effective manner
- c. Maintaining the moving assets ensuring that they give optimal operational efficiency and safety throughout their full codal life.
- d. Planning, procurement and maintenance of Machinery & Plant.
- e. Ensuring realization of the full potential of the assets.
- f. Adopting and maintaining the best practices in the industry with excellence in all areas of operation.
- g. Arranging relief and rescue in any unlikely event of Railway disasters.

# Goals

- a. Meeting increased traffic needs
- b. Improving customer focus
- c. Improving quality and train Safety
- d. Agility - to develop capacity to deal with fluctuating production volumes and/or a broad product matrix
- e. Employee training, improved working conditions and workplace safety
- f. New Technology adoption
- g. Environmental responsibility
- h. Corporate citizenship.

# Workshop Goals and Objectives

- POH of BG ICF/RCF coaches
- SS-I, SS-II and SS-III schedules of LHB Coaches.
- POH of Duronto (Hybrid) coaches, Tower Cars, Double decker coaches.
- POH of Power & Trailer cars viz., DEMU, EMU, MEMU& SPART.
- POH (Shop schedule) of LHB coaches.
- IOH of bogies for divisions.
- Supply of FIAT bogies for SS-I schedule of LHB coaches
- POH of Defense owned coaches.

# Workshop Goals and Objectives

- Works under Railway Board's bulk RSP.
- Supply of wheel sets to divisions.
- Fitment of Bio-toilet tanks on coaches.
- Over hauling of DVs, BMBCs & other air brake components for division.
- Calibration of instruments/gauges.
- WISE-II functioning.
- Chemical and Metallurgical testing/analysis of components.
- Basic Training Centre offers: a) Refresher courses to Artisan Staff b) Imparting training to Apprentices engaged against Apprentice Act, 1961 c) Skill development programmes. d) SAKSHAM Training

# Relevant Plan Heads (Under Demand No. 16)

Plan Head	Description
21	Rolling Stock
41	Machinery & Plant
42	Workshops including Production Units



# Chief Workshop Manager (CWM)

- The Chief Workshop Manager is posted as the officer in charge of the workshop. All the officers posted in the workshop will be under his direct administrative control analogous to that Divisional Railway Managers.

# Chemist and Metallurgist

- a. Testing and quality control (TQC): Testing chemical, physical, and mechanical properties of materials. The TQC should have adequate infrastructure such as metrology, hardness testers, organic and inorganic lab, testing of oils and fuels, optical microscope with image analyzer, UTM etc
- b. Technical investigations including failure analysis (TIFA): Expertise in fracture metallurgy and tribology; ability to differentiate between service and process failures and suggest preventive measures.
- c. Non destructive testing (NDT): To undertake testing and certification- keep abreast of NDT technologies and maintain documentation.
- d. New materials technology (NMT): Develop facilities and knowledge to test the new materials such as polymers, composites, ceramics, additives, amorphous metals, insulating materials, etc. and to help the shed or shop exploit their special qualities to upgrade the materials and processes.

# Workshop Personnel Officer

- The open line workshops have an establishment branch under a Personnel Officer (at an appropriate level decided by the Chief Personnel Officer) working under the direct control of Chief Workshop Manager in matters of day to day working, but taking policy directives from Chief Personnel Officer of the Railway. One of his main duties is to attend to all affairs regarding staff and workshop labour. He is responsible to the workshop for all matters relating to establishment such as recruitment, payment of wages and overtime, grant of leave and passes, complaints, discharges, payment of provident fund, gratuity and compensation, maintenance of service registers and other such records. Staff welfare activities like canteen, management of railway quarters, railway schools, supports & cultural activities are also handled by him.

# Environment and Safety Manager

- The responsibilities of the Environment & Safety Managers (ENSM) inter alia, are listed in Annexure 5.3 & 5.4 as Administration's duties & Responsibilities to workers. He will report to the Chief Workshop Manager and will oversee/inspect/control the activities of various departments on the subjects of environment protection & industrial safety. Industrial safety and adherence to the legislations like pollution act, factory act etc and assisting the CWM in his duties as the factory occupier are his functions. Based on the strength of staff, required number of safety officers to work under ENSM will be provided.

# Production Engineer

- The head of the workshops reports to the Chief Mechanical Engineer or Chief Workshop Engineer and is assisted by a Production Engineer who is responsible for the work of the following sections — a. Drawing office — Design b. Drawing office — Plant c. Drawing office — Jigs and Tools d. Planning and rate fixing e. Progress office f. Tool Room g. Inspection

- Drawing office: Scrutiny of drawings received; preparation of part drawings to facilitate manufacturing operations, designing various jigs and fixtures, templates, gauges, etc. for economical manufacture of components; maintenance of drawings for standard cutting tools etc., placing manufacturing orders on Tool Room, when required, etc.

# Planning and Production Control

- Pre-planning: Study of drawings and specifications, preparation of cost and details Books for each component; drawing up of lists of raw material or component requirements for ensuring its availability; maintenance of data
- for installed capacity; booked load; spare capacity, etc. for each machine group etc. b

- Planning: This office plans the activities connected with production to ensure fullest use of the plant and other means of production; It makes all arrangements to work as smoothly and efficiently as possible. The functions of this office are broadly divided as under:



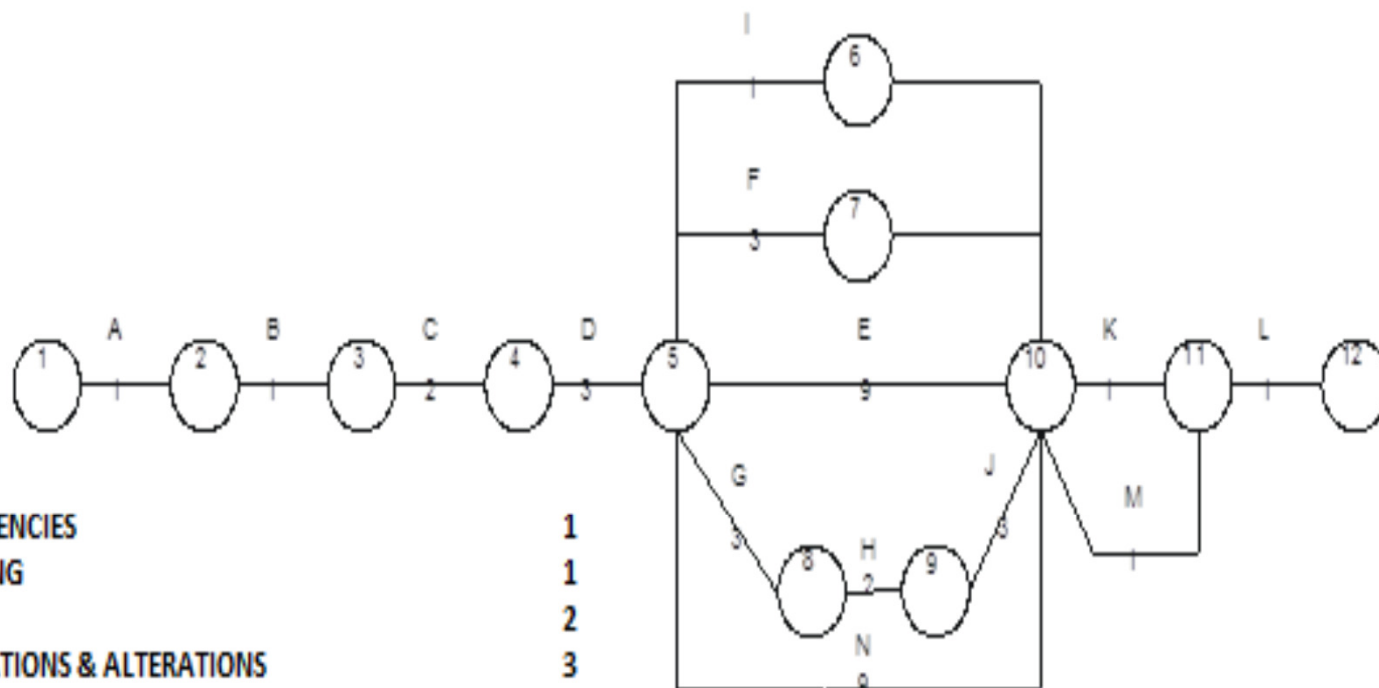
- i. Processing: The functions include preparation of scroll process sheets indicating sequence of operation, quantity of material to be used, the section or load centre where the operation is to be carried out, the requirement of machine groups, jigs, fixture and gauges, etc. ii. Rate fixing: The functions include maintenance of synthetic data for fixing rates (time) for individual operation, indicating allowed time in the process sheet for each of the operation involved; to scrutinize all completed piece work cards, issue of excess time cards etc. iii. Efficiency: This section deals with matters of general efficiency of the shops. Its activities comprise of review of existing practices, suggest improvement, keeping constant watch on off cuts and rejected materials lying on the shop floor or stores scrap yard in order to suggest suitable usage of that materials etc.

- Production control: Release of work orders for components assemblies etc. well in advance of the schedule of production; preparation of production schedule and distribution thereof in advance to all concerned for their guidance, arranging with stores departments for reservation of required material before actual release of work orders etc.

- Progress office: This office keeps constant watch of Production of components, assemblies, erection etc. as per schedules laid down, preparation of monthly report of production and their deliveries, keeping liaison with shops and stores departments in the drawal of raw material and finished parts. Intersection and inter-shop movement of components; maintenance of records for number of orders received, orders completed for each batch etc.

- Inspection: To inspect components, assemblies etc. on completion of each operation to ensure conformity to drawings and specifications, bringing to the notice of concerned authorities of deviation from drawings; and specifications for rectification and rejection; certification on the job card, and Route cards regarding quantities passed or rejected in respect of each operation etc. Inspectors are also deployed where ever required in checking materials or assemblies received from suppliers, for conformity to drawings and specifications.

## NETWORK FOR POH OF COACHES (NORMAL REPAIRS)



A. VERIFICATION OF DEFICIENCIES	1
B. PRE-INSPECTION & LIFTING	1
C. STRIPPING	2
D. BODY REPAIR MODIFICATIONS & ALTERATIONS	3
E. PAINTING	9
F. FITTING OF WATER TANK, PLUMBING & LEAKAGE TESTING	3
G. REPAIRS TO INTERIOR PANELS	3
H. FITMENT OF SHUTTERS	2
I. FITMENT OF DOORS	1
J. FITMENT OF BERTHS & SEATS	3
K. AIR BRAKE TESTING & FINAL WORKS	1
L. FINAL INSPECTION & DESPATCH	1
M. FITMENT OF AXLE PULLEY, TENSION ROD & TESTING OF COACH WIRING	1
N. TESTING OF BRANCH WIRING & FITMENT OF ELECTRICAL EQUIPMENT	<u>9</u>
<b>TOTAL DURATION</b>	<b><u>18 DAYS</u></b>

# Duties of Supervisors

- The shop supervisors have a definite function in enforcing/overseeing the under-mentioned aspects:
  - a. Allocation of work and deployment of Staff
  - b. Verification of timely and proper opening and closing of job cards
  - c. Enforcing quality through Supervision of work and stage inspections
  - d. Ensuring availability of tools and materials
  - e. Ensure economy in use of raw materials. F
  - e. Ensure punctuality in attendance, discipline and also presence of workers at the work spot during duty hours.
  - g. Ensure supply of safety kits to workers and ensure adherence to safety regulations and safe work practices.
  - h. Ensure timely completion of work as per target set by the management.
  - i. Ensure proper up-keep and safety of Railway's assets - both immovable and movable.

# Duties of Supervisors

- j. Ensure cleanliness of work premises and ensure good house-keeping by eliminating trash, filth, and foreign matters creating a cleaner workplace. Inculcate cleaning as a form of inspection and establish a clean-up time every day. k. Ensure correct handling of material so that damage does not occur due to mishandling. l. Inculcate and maintain proper work culture amongst staff. m. Design and establish an efficient and neat layout so that one can always get just as much of what is needed and whenever needed. n. Design of workstations: Design an efficient layout and ensure proper storage of tools, jigs and fixtures, raw materials, spare parts and semifinished and finished work; and to put things in order (or organize them) according to a specific rule or principle.

# Duties of Supervisors

- o. Ergonomics: To optimise tasks and workstations from the point of view of common place postures and movements such as sitting, standing, lifting, pulling and pushing with least stress on ligaments, joints and muscles of the workmen; and modify them as needed with change of activity or workmen with different anthropometric background.
- p. Environment: To create a conducive work environment free from avoidable heat, noise, pollution, vibrations and lack of illumination.



