Government of India (Bharat Sarkar)
Ministry of Railways (Rail Mantralaya)
(Railway Board)

No. E(MPP)2019/3/48 Pt.

RBE No. 191 /2019
New Delhi, Dated 8.11.2019

The General Managers,
All Indian Railways/PUs,
Metro Railway/Kolkata
Railway Electrification/Allahabad
DG/RDSO/Lucknow
CAO/DMW/Patiala
CAO/COFMOW/New Delhi
ED/CAMTECH/Gwalior

DG/NAIR/Vadodara
The Directors,
IRITM/Lucknow
IRIEEN/Nasik
IRIMEE/Jamalpur
IRICEN/Pune
IRISET/Secunderabad

Sub: Revised Training Modules of Non-Gazetted Staff of Mechanical Department (Non-Supervisors).

Ref: Chairman/Railway Board's letter No. E(MPP)/2016/3/20 dated 28.11.2018 and Board's letter dated 06.12.2018

Vide Board (CRB) letter No. E(MPP)/2016/3/20 dated 28.11.2018, DG/NAIR had been authorized as the Head of the Academic Council of all CTIs to develop Training Modules of all categories of Non-Gazetted staff. Accordingly, training modules of Mechanical Department (Non-Supervisors) were finalized and sent to this office.

2. Ministry of Railways (Railway Board) has reviewed the above Training Modules proposed and submitted by DG/NAIR. Board (MRS & MS) has approved the revised training modules.

3. The revised modules prepared have been scanned and uploaded under **E(MPP) Training Circulars** and can be viewed or downloaded from **railnet** at http://www.indianrailways.gov.in/railwayboard/view_section.jsp?lang=0&id=0,1,304,366,530,1068 .

4. It will be decision of General Manager/PHOD to identify the locations for conducting training of staff on the above revised modules in their respective Zones.

5. Kindly acknowledge receipt.

O/C

(Alka Arora Misra)
Executive Director/MPP
Railway Board.

No.E(MPP)2019/3/48 Pt

New Delhi, dated: 8-10-2019

Copy to:

1) The General Secretary, NFIR, 3 Chelmsford Road, New Delhi for information with 35 spares
2) The General Secretary, AIRF, 4 State Entry Road, New Delhi for information with 35 spares.
3) The Secretary General, FROA, R.No.256-A, Rail Bhavan, New Delhi for information with 5 spares.
4) The Secretary General, IRPOF, R.No.268, Rail Bhavan, New Delhi for information with 5 spares.
5) All Members, Department Council & Secretary Staff side National Council 13-C, Ferozeshah Road, New Delhi with 90 spares.
6) The Secretary General, AIRPF Association, Room No.256-D, Rail Bhavan, New Delhi with 5 spares.
7) General Secretary, All India SC & ST Railway Employees Association, 171/B-3, Basant Lane Railway Colony, New Delhi (15 copies).

For Secretary/Railways

No.E(MPP)2018/3/48 Pt.

New Delhi, dated: 8-10-2019

Copy to:

i) PS & ED(PG) to MR, MSR(A)
ii) PSO/Sr.PPS to CRB, FC, ML, ME, MM, MS, MT, DG(RHS) & DG(RPF)
iii) Sr.PPS/PPS/PS to AM(Budget), AM(CE), AM(C&IS), AM(Comml.), AM(Elect), AM(Fin), AM(Mech.), AM(Plg.), AM(Project), AM(PU), AM(Sig.), AM(Staff), AM(RS), AM(T&C), AM(Tele), AM(Traffic), AM(Works), Adv.L(RS), Adv(Vig.), Adv.Fin(Exp), Adv(IR), Adv(Safety), LA, OSD(MIS).
iv) ED(Plg.), ED(Accts.), EDF(BC), EDCE(B&S), EDCE(G), EDCE(Plg.), ED(CHG), ED(CC), ED(C&IS), ED(E&R), EDEE(Dev), EDEE(G), EDE, ED(RRB), EDE(N), EDE(Res), EDF, EDF€, EDF(S), EDF(B), EDF(RM), EDF(X)I, EDF(X)II, ED(H), EDLM, ED(MIS), EDE(GC), ED(T&MPP), EDME(Chg.), EDME(Fr.), EDME(Tr.), EDME(TOT), EDME(Dev.), EDME(W), ED(PC)I, ED(PC)II, ED(PP), ED(Project), ED(Project)/DMRC, EDRE, ED(Safety), JS, JS(C), JS€, JS(P), IG./RPF(Hqs), IG/RS, ED(S9g.), ED(Stat&Econ.), EDRS(C), EDRS(G), EDRS(P), EDRS(S), EDRS(W), ED(TD), EDTT(M), EDT(MC), EDT(P), ED(T&C), EDCE(P), ED(PM), ED(PG), EDTC-I, EDTC(FM), EDTT(F), EDTT(FM), EDTT(S), EDV(A), EDVE, EDV(T), ED(W).
v) Chief Commissioner of Railway Safety, Lucknow.
vi) E(Trg.), E(NG)I, E(NG)II, E(G), F(E)I, F(E)II, F(E)III, E(SCT)I, E(SCT)II branches of Railway Board.

Preamble

Railway Board have authorized DG/NAIR to develop revised training modules for employees of different departments of Indian Railways. Accordingly, IRIMEE has been nominated for revision of training modules of all Group C staff of Mechanical Engineering department. The exercise was undertaken by IRIMEE in two phases. In first phase, revision of Training Modules for supervisors of Mechanical Engineering department and C&M department was carried out at IRIMEE in March 2019 and the same has been finalized. Suggestions were called from all Zonal railways and discussions were held with all stakeholders. Based upon the extensive deliberations, revised training modules have been developed. Contents on following developments have been included in the training modules for Group “C” staff (other than supervisors), which are noteworthy:

- Bio toilet
- Basic Knowledge of Disaster Management to handle accident cases
- Basics of Environment & House Keeping Management (EnHM)
- Basic Knowledge of 5S, ISO 14001, ISO 9001 & ISO 50001
- Industrial Safety
- Personal Protective Equipment (PPE)
- Basic Workplace Ethics and its importance
- Importance of Mock Drill and its practical demonstration
- Basic knowledge of Computer
- Basic Knowledge of Latest design Wagons like BOXNHL, BLC etc.
- Huck Bolting
- Basic knowledge of CNC Programming, Programming codes, Input/output devices and maintenance of CNC machines
- EOT CRANE: Basics and maintenance
- Introduction to rescue devices of ART/ARMV/140T BD CRANE used at accident sites
- Stainless Steel Welding
- Sub-merged Arc Welding (SAW) & requirement of fixtures
- Reading and understanding Drawings & Surface finish symbols
- Types of plywood, compreg, decorative laminated sheet, adhesives

The revised module is now released for publication. It is hoped that it will serve the needs of the target group in years to come and it will help them to serve the Railways and Customers to the best of their ability.

IRIMEE places on record its sincere thanks to all PCMEs, Principals of all STCs, M&C directorate of RDSO, Railway Board and DG/NAIR for the valuable ideas and guidance which have been culminated in this publication.

Annexure A

PROPOSED MODULES FOR STAGEWISE TRAINING OF GROUP "C" STAFF OTHER THAN SUPERVISORS OF MECHANICAL DEPARTMENT

JULY,2019

TRAINING MODULES OF MECHANICAL DEPARTMENT VOL.II

I N D E X

Module No.	Stage	Trade	Activity Center	Duration	Page No.
MECH01	Induction to Helper	All	C&W Depot, Workshops	78 days	3
MECH02	Induction to Technician (RRB)	C&W Technician	C & W Depot	26 Weeks	4-5
MECH03	Induction to Technician (RRB)	C&W Fitter	Workshop (C &W)	26 Weeks	6-7
MECH04	Induction to Technician (RRB)	Carriage Fitter	Workshop (Carriage)	26 Weeks	8-9
MECH05	Induction to Technician (RRB)	Wagon Fitter	Workshop (Wagon)	26 Weeks	10-11
MECH06	Induction to Technician (RRB)	Welder	Workshops	26 Weeks	12
MECH07	Induction to Technician (RRB)	Mill Wright	Workshops	26 Weeks	13
MECH08	Induction to Technician (RRB)	Painter	Workshops (Carriage)	26 Weeks	14
MECH09	Induction to Technician (RRB)	Carpentry	Workshop (Carriage)	26 Weeks	15-16
MECH10	Induction to Technician (RRB)	Machinist	Workshops	26 Weeks	17
MECH11	Promotion from Helper to Technician	C&W Technician	C & W Depot	112 days	18-19
MECH12	Promotion from Helper to Technician	Carriage Fitter	Workshop (Carriage)	112 days	20
MECH13	Promotion from Helper to Technician	Wagon Fitter	Workshop (Wagon)	112 days	21-22
MECH14	Promotion from Helper to Technician	Welder	C&W Depot, Workshops	26 Weeks	23
MECH15	Promotion from Helper to Technician	Mill Wright	C&W Depot, Workshops	72 days	24
MECH16	Promotion from Helper to Technician	Forging	Workshop	72 days	25
MECH17	Promotion from Helper to Technician	Trimmer	C&W Depot, Workshop (Carriage)	72 days	26
MECH18	Promotion from Helper to Technician	Painter	C&W Depots, Workshops	72 days	27
MECH19	Promotion from Helper to Technician	Carpentry	C&W Depot, Workshop (Carriage)	72 days	28
MECH20	Promotion from Helper to Technician	Machinist	C&W Depot, Workshops	72 days	29
MECH21	Refresher for Artisan	All	C&W Depot, Workshops.	12 days	30
	Course Contents				31-125

Module No.	(MECH 01)	**Department**	MECHANICAL
Category	ALL	**Duration**	78 Days
Stage	INDUCTION TO HELPER	**Activity**	All

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/001	FOUNDATION: RAILWAY RULES, CONDUCT RULES LEAVE RULES, PASS RULES, D&A RULES ETC.	12
ME/002	GENERAL SAFETY, ACCIDENTS & FIRE FIGHTING	01
ME/003	SAFETY IN WORK PLACE	02
ME/004	USE OF MEASURING TOOLS	06
ME/005	USE OF HAND & PORTABLE TOOLS	06
ME/006	READING OF DRAWINGS	06
ME/007	MATERIAL SPECIFICATIONS, PROPERTIES BEARINGS, LUBRICANTS & DRIVES	06
ME/008	ARC WELDING	03
ME/009	GAS WELDING & CUTTING	03
ME/010	FIRST AID	02
ME/012	KNOWLEDGE OF COMPRESSORS AND OPERATION	02
ME/013	LIFTING & HANDLING DEVICES	02
ME/014	CLEANLINESS OF WORKING ENVIRONMENT	02
ME/015	KNOWLEDGE OF DIFFERENT TYPES OF COACHES & BOGIES FAMILIARISATION WITH COACH & BOGIE COMPONENTS (AIR BRAKE SYSTEM)	06
ME/016	KNOWLEDGE OF DIFFERENT TYPES OF WAGONS INCLUDING BOGIES & THEIR COMPONENTS, BOTH FOR AIR BRAKE SYSTEM	06
ME/017	FAMILIARITY WITH CARPENTRY TOOLS & JOINTS INCLUDING TRIMMING	01
ME/018	SURFACE PREPARATION, TYPES OF PAINTS, PAINTING EQUIPMENTS & PAINTING METHODS	02
ME/019	BASICE KNOWLEDGE OF ELECTRICAL PARAMETERS	02
ME/020	FAMILIARITY WITH DIFFERENT METAL CUTTING OPERATIONS INCLUDING MACHINING &TURNING	06
ME/090	BIO-TOILETS	02

Module No.	(MECH 02)	**Department**	MECHANICAL
Category	C&W TECHNICIAN	**Duration**	26 Weeks
Stage	INDUCTION TO TECHNICIAN (RRB)	**Activity**	CARRIAGE & WAGON DEPOT

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/001	FOUNDATION: RAILWAY ORGANISATION, RULES CONDUCT/ LEAVE / PASS/ D&A RULES, BASIC KNOWLEDGE OF COMPUTER ETC	12
ME/002	GENERAL SAFETY, ACCIDENTS & FIRE FIGHTING	01
ME/003	SAFETY IN WORK PLACE	02
ME/004	USE OF MEASURING TOOLS	02
ME/005	USE OF HAND AND PORTABLE TOOLS	01
ME/007	MATERIAL SPECIFICATIONS, PROPERTIES, BEARINGS LUBRICANTS & DRIVES	06
ME/010	FIRST AID	02
ME/012	KNOWLEDGE OF COMPRESSORS AND OPERATION	02
ME/013	LIFTING & HANDLING DEVICES	02
ME/014	CLEANLINESS OF WORKING ENVIRONMENT	02
ME/041	USE OF PNEUMATIC/ELECTRIC AND HYDRAULIC PORTABLE TOOLS	04
ME/042	ELECTRIC ARC WELDING/GAS WELDING SETS INCL. CO 2 &MIG WELDING	06
ME/043	KNOWLEDGE OF VARIOUS TYPES OF MECHANICAL FASTENRS, WASHERS, METHODS OF SEALING & LOCKING OF BOLTS, CLEARANCES, FITS & TOLERANCES	06
ME/044	KNOWLEDGE OF DIFFERENT TYPES OF BEARINGS & LUBRICATOR (GREASES, OILS ETC.) ON COACHES AND WAGONS	06
ME/045	KNOWLEDGE OF TYPES OF WAGONS & COACHES ON IR, SPECIAL FEATURES & MAINTENANCE REQUIREMENT OF EACH STOCK	12
ME/046	SAFETY & OPERATING REQUIREMENTS FOR AIR BRAKE TRAINS (INCLUDING BOGIE MOUNTED & DISC BRAKE)	03

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/048	ROLLER/PLAIN BEARINGS-MAINT.DISMANTLING DETECTION OF ROLLER BEARING DEFECT, UST OF AXLES	03
ME/049	CASNUB BOGIE, ICF (ALL COIL), FIAT, IR-20 BOGIES CHECKING & WELDING REPAIRS	06
ME/050	YARD WORKING	01
ME/051	KNOWLEDGE OF IRCA RULES	05
ME/052	KNOWLEDGE OF TRAIN PASSING	01
ME/053	ATTENTION TO CBC OF COACHING & FREIGHT STOCK	03
ME/054	WHEEL CHANGING, REPLACING, SPRING CHANGING, BRASS CHANGING	06
ME/055	TROUBLE SHOOTING DURING TRAIN OPERATIION DERAILMENT MECHANISM & SAFETY ITEMS (BRAKE BINDING, PBP, PRESSURE TROUBLE ETC)	06
ME/056	BOGIE REPAIR FOR COACHES & WAGONS	06
ME/057	EQUIPMENT REPAIRS	01
ME/058	OVERHAULING & TESTING OF AIR BRAKE EQUIPMENTS AND SYSTEM, SWTR / SCTR	04
ME/059	FIRE EXTINGUISHER & ITS MAINT	01
ME/060	MAINT OF HIGH-SPEED TRAINS, SHATABDI, JANSHATABDI, RAJDHANI INCLUDING LHB COACHES	06
ME/061	BASIC IDEA OF TRAIN LIGHTING & AIR CONDITIONING	03
ME/090	BIO-TOILET	02
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICALTRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	30
	VISIT TO THE NOMINATED WAGON/COACH WORKSHOP	03

THE ABOVE TRAINING INCLUDES ON THE JOB PRACTICAL TRAINING IN THE CONCERNED AREAS / DEPOT / YARD.

Module No.	(MECH 03)	**Department**	MECHANICAL
Category	C & W FITTER	**Duration**	26 Weeks
Stage	INDUCTION TO HELPER (RRB)	**Activity**	WORKSHOP (C & W)

TECHNICAL QUALIFICATION ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN WEEKS
ME/001	FOUNDATION	02
ME/002	GENERAL SAFETY, ACCIDENTS INCLUDING FIRE FIGHTING	01 DAY
ME/003	SAFETY IN WORK PLACE	02 DAYS
ME/010	FIRST AID	01 DAY
ME/014	CLEANLINESS OF WORKING ENVIRONMENT	02 DAYS
ME/042	ELECTRIC ARC WELDING/GAS WELDING SETS INCL. CO 2 & MIG WELDING	01
ME/045	KNOWLEDGE OF TYPES OF WAGONS COACHES ON IR, SPECIAL FEATURES &. MAINTENANCE REQUIREMENT OF EACH STOCK	02
ME/046	SAFETY & OVERHAULING REQUIREMENTS FOR AIR BRAKE TRAINS (INCLUDING BOGIE MOUNTED & DISC BRAKE)	01
ME/048	ROLLER BEARINGS-MAINT., DISMANTLING, DETECTION OF ROLLER BEARING DEFECT, UTRASONIC TESTING OF AXLES	01
ME/049	BEML BOGIE, ICF (ALL COIL), FIAT, IR-20 BOGIES CHECKING & WELDING REPAIRS	01
ME/051	KNOWLEDGE OF IRCA PART-III AND PART-IV & FAMILIARITY WITH OTHER MANUALS LIKE COACH & WAGON MAINT. MANUALS	01
ME/053	ATTENTION TO CBC	01
ME/056	BOGIE REPAIRS FOR COACHES INCLUDING BOGIE MOUNTED BRAKE CYLINDER COACHES	03 DAYS
ME/060	MAINTENANCE OF HIGH-SPEED TRAINS SHATABDI, JANA SAHTABDI & RAJDHANI INCLUDING LHB COACHES	01
ME/061	BASIC IDEA OF TRAIN LIGHTING & AIR CONDITIONING	03 DAYS
ME/067	OVERHAULING & TESTING OF AIR BRAKE EQUIP & SYSTEMS INCLUDING BOGIE MOUNTED BRAKE CYLINDER	01

SUB-MOD. NO.	DESCRIPTION	DURATION IN WEEKS
ME/070	CASNUB BOOIE COMPONENTS CHECKING & REPAIRS	03 DAYS
ME/082	DE-WHEELING, LIFTING AND LOWERING OF COACH	03 DAYS
ME/083	EXAMINATION & MAINT OF DRAW GEAR, BUFFER AND HEAD STOCK	03 DAYS
ME/089	PLUMBING WORK IN COACH WATER SUPPLY AND UNDER SLUNG WATER TANK WITH W.R.A.	04 DAYS
ME/086	CORROSION ON COACHING/ FREIGHT STOCK PREVENTION AND MODIFICATION FOR CORROSION	01
ME/088	BRAKE GEAR EXAM REPAIRS AND ADJUSTMENT, SAFETY ITEMS, ANALYSIS OF WHEEL DEFECTS DERAILMENT MECHANISM & SAFETY ITEMS	03 DAYS
ME/090	BIO-TOILET	02 DAYS
ME/122	ELECTRIC ARC WELDING	03 DAYS
ME/123	GAS CUTTING	03 DAYS
ME/GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	01
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	05
	VISIT TO A MAJOR COACHING DEPOT RECEIVING POHED COACHES FROM THE CONCERNED WORKSHOP	01

Module No.	(MECH 04)	**Department**	MECHANICAL
Category	CARRIAGE FITTER	**Duration**	26 Weeks
Stage	INDUCTION TO TECHNICIAN (RRB)	**Activity**	WORKSHOP (CARRIAGE)

TECHNICAL QUALIFICATION ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN WEEKS
ME/001	FOUNDATION	02
ME/002	GENERAL SAFETY, ACCIDENTS INCLUDING FIRE FIGHTING	01 DAY
ME/003	SAFETY IN WORK PLACE	02 DAYS
ME/010	FIRST AID	01 DAY
ME/014	CLEANLINESS OF WORKING ENVIRONMENT	02 DAYS
ME/042	ELECTRIC ARC WELDING/GAS WELDING SETS INCL CO 2 & MIG WELDING	01
ME/045	KNOWLEDGE ABOUT VARIOUS COACHES, THEIR SPECIAL FEATURES AND POH PERIODICITY	01
ME/049	BEML BOGIE, ICF (ALL COIL), FIAT, IR-20 BOGIES CHECKING & WELDING REPAIRS	01
ME/053	ATTENTION TO CBC	01
ME/060	MAINTENANCE OF HIGH-SPEED TRAINS SHATABDI, JANA SAHTABDI &RAJDHANI INCLUDING LHB COACHES	01
ME/061	BASIC IDEA OF TRAIN LIGHTING& AIR CONDITIONING	01
ME/081	FLOOR PREPARATION, PVC AND EPOXY LAYING	03 DAYS
ME/082	DE-WHEELING, LIFTING AND LOWERING OF COACH	03 DAYS
ME/083	EXAMINATION & MAINT. OF DRAW GEAR, BUFFER AND HEAD STOCK	01
ME/084	AIR BRAKE EQUIPMENTS OVERHAULING AND TESTING	01
ME/085	ROLLER BEARINGS-MAINT., DISMANTLING DETECTION OF ROLLER BEARING DEFECT, UTRASONIC TESTING OF AXLES	01
ME/086	CORROSION ON COACHING STOCK: PREVENTION AND MODIFICATION FOR CORROSION	01
ME/087	BOGIE REPAIRS FOR COACHES INCLUDING BOGIE MOUNTED BRAKE CYLINDER COACHES	01

SUB-MOD. NO.	DESCRIPTION	DURATION IN WEEKS
ME/088	BRAKE GEAR EXAM. REPAIRS AND ADJUSTMENT SAFETY ITEMS, ANALYSIS OF WHEEL DEFECTS DERAILMENT MECHANISM & SAFETY ITEMS	01
ME/089	PLUMBING WORK IN COACH WATER SUPPLY AND UNDER SLUNG WATER TANK WITH W.R.A	04 DAYS
ME/090	BIO-TOILET	02 DAYS
ME/122	ELECTRIC ARC WELDING	01
ME/123	GAS CUTTING	01
ME/GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	01
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	05
	VISIT TO A MAJOR COACHING DEPOT RECEIVING POHed COACHES FROM THE CONCERNED WORKSHOP	01

Module No.	(MECH 05)	**Department**	MECHANICAL
Category	WAGON FITTER	**Duration**	26 Weeks
Stage	INDUCTION TO TECHNICIAN (RRB)	**Activity**	WAGON SHOP (WAGON)

TECHNICAL QUALIFICATION-ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN WEEKS
ME/001	FOUNDATION	02
ME/002	GENERAL SAFETY, ACCIDENTS INCLUDING FIRE FIGHTING	01 DAY
ME/003	SAFETY IN WORK PLACE	02 DAYS
ME/010	FIRST AID	01 DAY
ME/014	CLEANLINESS OF WORKING ENVIRONMENT	02 DAYS
ME/041	USE OF PNEUMATIC/ELECTRIC AND HYDRAULIC PORTABLE TOOLS	03 DAYS
ME/043	KNOWLEDGE OF VARIOUS TYPES OF MECH FASTENERS, WASHERS, METHODS OF SEALING& LOCKING OF BOLTS, CLEARANCES /FITS/TOLERANCES	03 DAYS
ME/055	BRAKE GEAR EXAM. REPAIRS AND ADJUSTMENT, SAFETY ITEMS, ANALYSIS OF WHEEL DEFECTS DERAILMENT MECHANISM &SAFETY ITEMS	02
ME/086	CORROSION ON FREIGHT STOCK: PREVENTION AND MODIFICATION FOR CORROSION	01
ME/121	GENERAL KNOWLEDGE OF VARIOUS WAGONS INCLUDING REPAIRS	01
ME/122	ELECTRIC ARC WELDING INCL. CO-2 & MIG WLDG	01
ME/123	GAS CUTTING	01
ME/125	KNOWLEDGE OF DIFF. TYPES OF BEARINGS & LUBRICATOR (GREASES, OILS ETC.) ON WAGONS REQUIREMEDNTS OF EQUIP. INCLUDING BOBRN, BTPN	01
ME/126	SPECIFIC KNOWLEDGE OF WAGONS, SPECIAL FEATURES AND MAINTENACNE REQUIREMENT	01
ME/127	OVERHAULING & TESTING OF AIR BRAKE EQUIP. & SYSTEMS INCLUDING BOGIE MOUNTED BRAKE CYLINDER WAGONS	01

SUB-MOD. NO.	DESCRIPTION	DURATION IN WEEKS
ME/129	ROLLER BEARINGS-MAINT DISMANTLING DETECTION OF ROLLER BEARING DEFECT, UST OF AXLES	01
ME/130	CASNUB BOGIE COMPONENTS CHECKING & REPAIRS	01
ME/131	KNOWLEDGE OF IRCA PART-III AND IV & FAMILIARITY WITH OTHER MANUALS LIKE WAGON MAINT. MANUALS	01
ME/132	ATTENTION TO CBC (NHT &HT)	01
ME/133	HANGING WHEELS & SPRINGS, USE OF MANIPUTATORS	01
ME/GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD. SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	01
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	05
	VISIT TO A MAJOR WAGON DEPOT	02

Module No.	(MECH 06)	**Department**	MECHANICAL
Category	WELDER	**Duration**	26 Weeks
Stage	INDUCTION TO TECHNICIAN (RRB)	**Activity**	WORKSHOPS

TECHNICAL QUALIFICATION-ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN WEEKS
ME/001	FOUNDATION	02
ME/002	GENERAL SAFETY, ACCIDENTS INCLUDING FIRE FIGHTING	01 DAY
ME/003	SAFETY IN WORK PLACE	02 DAYS
ME/010	FIRST AID	01 DAY
ME/014	CLEANLINESS OF WORKING ENVIRONMENT	02 DAYS
ME/042	KNOWLEDGE OF DIFFERENT TYPES OF WELDING ARC WELDING, GAS WELDING, CO_2 WELDING, TIG, MIG	01
ME/301	APPARATUS FOR WELDING SELECTION OF ELECTRODES TYPES OF WELDING JOINTS, SURFACE PREPARATION	02
ME/302	PROPERTIES OF WELDABLE MATERIALS	01
ME/303	WELDING DEFECTS, INSPECTION & TESTING OF WELDS SAFETY PRECAUTIONS SAFETY GADGETS	01
ME/045	TYPES OF ROLLING STOCK USED ON INDIAN RAILWAYS	01
ME/305	RECLAMATION/REPAIRS OF COMPONENTS BY WELDING VIZ. KNUCKLES, BRAKE BEAMS, WEARING SURFACES ETC	01
ME/306	PRACTICAL ON THE JOB TRAINING IN VARIOUS SECTIONS OF THE W/SHOP VIZ. CARRIAGE SHOP, WAGON SHOP ETC	09
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	05
ME/GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	01
	VISIT TO A MAJOR C&W DEPOT, CRWS BHOPAL ANY WAGON MANUFACTURING FIRM	01

Module No.	(MECH 07)	**Department**	MECHANICAL
Category	MILL WRIGHT	**Duration**	26 Weeks
Stage	INDUCTION TO TECHNICIAN (RRB)	**Activity**	WORKSHOPS

TECHNICAL QUALIFICATION - NON- ITI/ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN WEEKS
ME/001	FOUNDATION	02
ME/002	GENERAL SAFETY, ACCIDENTS INCLUDING FIRE FIGHTING	01 DAY
ME/003	SAFETY IN WORK PLACE	02 DAYS
ME/010	FIRST AID	01 DAY
ME/014	CLEANLINESS OF WORKING ENVIRONMENT	02 DAYS
ME/401	KNOWLEDGE OF DIFFERENT TYPES OF MACHINES: LATHES, COMPRESSORS, DRILLING, SHAPING MILLING, OVERHEAD CRANES TRAVERSERS, VEHICLES & MATERIAL HANDLING EQUIPMENTS FOR PREVENTIVE MAINTENANCE SCHEDULES	03
ME/402	TYPES OF BEARINGS, INSPECTION, LUBRICATION VIBRATION AND NOISE CONTROL	01
IME/403	INSTALLATION AND COMMISSIONING OF DIFFERENT TYPES OF MACHINES	01
ME/404	KNOWLEDGE OF HYDRAULICS & PNEUMATIC CIRCUITS	01
ME/405	KNOWEDGE AND OF ELECTRICAL/ ELECTRONIC DEVICES	01
ME/406	MAINTENANCE OF CNC MACHINES	01
ME 407	PRACTICAL TRAINING OF MACHINE MAINTENANCE IN VARIOUS SECTIONS OF THE WORKSHOP	06
ME/GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	01
ME/MSK	MULTISKILLING INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	05
	VISIT TO OTHER WOSRKSHOPS/PUs FOR LEARNING THE FUNCTIONING OF MILLWRIGHT ORGANISATION	03

Module No.	(MECH 08)	**Department**	MECHANICAL
Category	PAINTER	**Duration**	26 Weeks
Stage	INDUCTION TO TECHNICIAN (RRB)	**Activity**	WORKSHOPS (CARRIAGE)

TECHNICAL QUALIFICATION - ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN WEEKS
ME/001	FOUNDATION	02
ME/002	GENERAL SAFETY, ACCIDENTS INCLUDING FIRE FIGHTING	01 DAY
ME/003	SAFETY IN WORK PLACE	02 DAYS
ME/010	FIRST AID	01 DAY
ME/014	CLEANLINESS OF WORKING ENVIRONMENT	02 DAYS
ME/045	TYPES OF ROLLING STOCK USED ON INDIAN RAILWAYS PAINTING SCHEDULES OF COACHES INCLUDING LHB	01
ME/281	USE OF MANUAL & AUTOMATIC PAINTING EQUIPMENTS GRIT/SAND BLASTING ELCTROSTATIC PAINTING DETAILS ABOUT PAINTING BOOTH	01
ME/282	TYPES OF PAINTS, FILLERS PUTTY, PRIMERS, PU PAINT SPECIFICATIONS AND PROPERTIES	01
ME/283	THEORY AND PRACTICAL OF SURFACE PREPARATION FOR PAINTING PHOSPHATING	01
ME/284	SAFETY DURING PAINTING	01
ME/285	STENCIL CUTTING & DECAL MFG ETC.	01
ME/286	PRACTICAL ON THE JOB TRAINING IN VARIOUS SECTIONS OF THE W/SHOP VIZ. CARRIAGE SHOP WAGON SHOP ETC.	08
ME / MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	05
ME/ GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	02
	VISIT TO RCF/ICF AND A MAJOR C&W DEPOT	02

Module No.	(MECH 09)	**Department**	MECHANICAL
Category	CARPENTRY	**Duration**	26 Weeks
Stage	INDUCTION TO TECHNICIAN (RRB)	**Activity**	WORKSHOPS (CARRIAGE)

TECHNICAL QUALIFICATION - ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN WEEKS
ME/001	FOUNDATION	02
ME/002	GENERAL SAFETY, ACCIDENTS INCLUDING FIRE FIGHTING	01 DAY
ME/003	SAFETY IN WORK PLACE	02 DAYS
ME/010	FIRST AID	01 DAY
ME/014	CLEANLINESS OF WORKING ENVIRONMENT	02 DAYS
ME/045	TYPES OF ROLLING STOCK USED ON INDIAN RAILWAYS	01
ME/501	TYPES OF PLYWOOD, COMPREG, DECORATIVE LAMINATED SHEET, ADHESIVES	01
ME/502	INTRODUCTION OF HANDLING TOOLS, CLASSIFICATION OF TOOLS, MARKING, MEASURING, INSPECTING TOOLS, CUTTING/PLANNING/BORING AND DRILLING TOOLS STRIKING AND FIXING, MISCELLANEOUS TOOLS	01
ME/503	INTRODUCTION TO VARIOUS TYPES OF JOINTS, JOINTS USED IN RAILWAYS, CARE & MAINTENANCE OF JOINTS	01
ME/504	CARPENTRY WORKING PROCESSES AND OPERATIONS MAKING ACTUAL ITEMS/ JOBS	01
ME/505	READING AND UNDERSTANDING DRAWINGS, MARKING OF DRAWINGS AND CUTTING PATTERNS	01
ME/506	INTRODUCTION TO AUXILIARY MATERIALS, NATURAL FIBRE THERMOSET COMPOSITE (NFTC) & FIBRE REINFORCED PLASTIC (FRP), TECHNOLOGY, PROPERTIES & ADVANTAGES, FITEMENT OF FRP ITEMS AND MODULES	01

SUB-MOD. NO.	DESCRIPTION	DURATION IN WEEKS
ME /306	PRACTICAL ON THE JOB TRAINING IN MAKING VARIOUS JOBS REQUIRED IN DIFFERENT SECTIONS OF CARRIAGE SHOP	06
ME /MSK	MULTISKILLING INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	05
ME/ GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	02
	VISIT TO RCF/ICF AND A MAJOR C&W DEPOT RECEIVING POHed STOCK FROM THE CONCERNED WORKSHOP	03

Module No.	(MECH 10)	**Department**	MECHANICAL
Category	MACHINIST	**Duration**	26 Weeks
Stage	INDUCTION TO TECHNICIAN (RRB)	**Activity**	WORKSHOP

TECHNICAL QUALIFICATION - ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN WEEKS
ME/001	FOUNDATION	02
ME/002	GENERAL SAFETY, ACCIDENTS INCLUDING FIRE FIGHTING	01 DAY
ME/003	SAFETY IN WORK PLACE	02 DAYS
ME/010	FIRST AID	01 DAY
ME/014	CLEANLINESS OF WORKING ENVIRONMENT	02 DAYS
ME/601	USE OF TOOLS, PROCESS OF HEAT TREATMENT PRECISION INSTRUMENTS, GAUGES & TEMPLATES	01
ME/602	TYPES OF WHEELS USED IN ROLLING STOCKS, WHEEL DEFECTS, STANDARD & WORN OUT WHEEL PROFILES	01
ME/603	TYPES OF WHEEL LATHES, VARIOUS ATTACHEMENTS SETTINGS AND OPERATIONS, MINOR MAINTENANCE	02
ME/604	DRILLING, SHAPING & SLOTTING MACHINES, PLANERS LIMITS FITS & TOLERANCES, GRINDER	01
ME/605	WORKING OF CNC MACHINES (PRACTICAL KNOWLEDGE OF PROGRAMMING ETC)	01
ME/306	PRACTICAL ON THE JOB TRAINING IN MAKING VARIOUS JOBS REQUIRED FOR DIFFERENT SHOPS	08
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	05
ME/GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	01
	VISIT TO DMW/PATIALA & A MAJOR C&W DEPOT	03

Module No.	(MECH 11)	**Department**	MECHANICAL
Category	C& W TECHNICIAN	**Duration**	112 Days
Stage	PROMOTION FROM HELPER TO TECHNICIAN	**Activity**	C&W DEPOT

TECHNICAL QUALIFICATION- NON-ITI/ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/041	USE OF PNEUMATIC/ELECTRIC AND HYDRAULIC PORTABLE TOOLS	01
ME/042	ELECTRIC ARC WELDING/GAS WELDING SETS INCL. CO 2 & MIG WELDING	02
ME/043	KNOWLEDGE OF VARIOUS TYPES OF MECHANICAL FASTENRS, WASHERS, METHODS OF SEALING & LOCKING OF BOLTS, CLEARANCES, FITS & TOLERANCES	02
ME/044	KNOWLEDGE OF DIFFERENT TYPES OF BEARINGS & LUBRICATOR (GREASES, OILS ETC.) ON COACHES AND WAGONS.	03
ME/045	KNOWLEDGE OF TYPES OF WAGONS & COACHES ON IR, SPECIAL FEATURES &. MAINTENANCE REQUIREMENT OF EACH STOCK	06
ME/046	SAFETY & OPERATING REQUIREMENTS FOR AIR BRAKE TRAINS (INCLUDING BOGIE MOUNTED & DISC BRAKE)	03
ME/048	ROLLER/PLAIN BEARINGS-MAINT., DISMANTLING DETECTION OF ROLLER BEARING DEFECT	03
ME/049	CASNUB BOGIE, ICF (ALL COIL), FIAT, IR-20 BOGIES CHECKING&WELDING REPAIRS	06
ME/050	YARD WORKING	03

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/051	KNOWLEDGE OF IRCA RULES PART IIAND PART IV FOR FREIGHT AND COACHING STOCK	03
ME/052	KNOWLEDGE OF TRAIN PASSING	03
ME/053	ATTENTION TO CBC OF COACHING & FREIGHT STOCK	03
ME/054	WHEEL CHANGING, REPLACING, SPRING CHANGING, BRASS CHANGING	03
ME/055	TROUBLE SHOOTING DURING TRAIN OPERATIION, DERAILMENT MECHANISM &SAFETY ITEMS (BRAKE BINDING, PBP, PRESSURE TROUBLE ETC)	06
ME/056	BOGIE REPAIR FOR COACHES & WAGONS	06
ME/057	EQUIPMENT REPAIRS	01
ME/058	OVERHAULING & TESTING OF AIR BRAKE EQUIPMENTS AND SYSTEM, SWTR/ SCTR	06
ME/059	FIRE EXTINGUISHER & ITS MAINT	01
ME/060	MAINT OF HIGH-SPEED TRAINS, SHATABDI, JANSHATABDI, RAJDHANI INCLUDING LHB COACHES (BASED ON E. RAILWAY'S MODULE)	06
ME/061	BASIC IDEA OF TRAIN LIGHTING & AIR CONDITIONING	03
ME/090	BIO-TOILET	02
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE DEPOT	30
ME/GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	06
	VISIT TO A MAJOR C& W WORKSHOP	04

Module No.	(MECH 12)	**Department**	MECHANICAL
Category	CARRIAGE FITTER	**Duration**	112 Days
Stage	PROMOTION FROM HELPER TO TECHNICIAN	**Activity**	WORKSHOP (CARRIAGE)

TECHNICAL QUALIFICATION- NON-ITI/ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/053	ATTENTION TO CBC	03
ME/081	FLOOR PREPARATION, PVC AND EPOXY LAYING	03
ME/082	DE-WHEELING, LIFTING AND LOWERING OF COACH	03
ME/083	EXAMINE, MAINT. OF DRAW GEAR, BUFFER AND HEAD STOCK	03
ME/084	AIR BRAKE EQUIPMENTS OVERHAULING AND TESTING	06
ME/085	EXAMINATION OF ROLLER BEARING & TOPPING OF AXLE BOXES	06
ME/086	CORROSION EXAMINATION AND REPAIRS	06
ME/087	BOGIE REPAIR INCL. DASHPOT CHECKING & OILING	06
ME/088	BRAKE GEAR EXAM. REPAIRS AND ADJUSTMENT DERAILMENT MECHANISM & SAFETY ITEMS	12
ME/089	PLUMBING WORK IN COACH WATER SUPPLY AND UNDER SLUNG WATER TANK WITH W.R. A	03
ME/090	BIO-TOILET	02
ME/059	FIRE EXTINGUISHER &ITS MAINTENANCE	01
ME/060	MAINTENANCE OF HIGH-SPEED TRAINS SHATABDI, JANA SAHTABDI &RAJDHANI INCLUDING LHB COACHES	06
ME/061	BASIC IDEA OF TRAIN LIGHTING & AIR CONDITIONING	03
ME/122	ELECTRIC ARC WELDING	03
ME/123	GAS CUTTING	03
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	30
ME/GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS, READING AND UNDERSTANDING OF DRAWINGS	06
	VISIT TO RCF/ICF & A MAJOR COACHING DEPOT	07

Module No.	(MECH 13)	**Department**	MECHANICAL
Category	WAGON FITTER	**Duration**	112 Days
Stage	PROMOTION FROM HELPER TO TECHNICIAN	**Activity**	WORKSHOP (WAGON)

TECHNICAL QUALIFICATION- NON-ITI/ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/041	USE OF PNEUMATIC/ELECTRIC AND HYDRAULIC PORTABLE TOOLS	03
ME043	KNOWLEDGE OF VARIOUS TYPES OF MECH FASTENERS, WASHERS, METHODS OF SEALING & LOCKING OF BOLTS, CLEARANCES /FITS/TOLERANCES	03
ME/053	ATTENTION TO CBC	06
ME/121	GENERAL KNOWLEDGE OF VARIOUS WAGONS ON IR INCLUDING REPAIRS	12
ME/122	ELECTRIC ARC WELDING INCL. CO-2 & MIG WLDG	03
ME/123	GAS CUTTING	03
ME/125	KNOWLEDGE OF DIFF. TYPES OF BEARINGS & LUBRICATOR (GREASES, OILS ETC.) ON WAGONS	06
ME/126	KNOWLEDGE OF VARIOUS TYPES OF WAGONS, SPECIAL FEATURES OF EACH AND MAINTENANCE REQUIREMENTS OF EACH WAGON	06
ME/127	MAINTENANCE REQUIREMENTS OF EQUIPMENTS FOR AIR BRAKE	06
ME/129	ROLLER BEARINGS-MAINT. DISMANTLING DETECTION OF ROLLER BEARING DEFECT	06
ME/130	CASNUB BOGIE COMPONENTS CHECKING & REPAIRS	06
ME/131	KNOWLEDGE OF IRCA PART-II & FAMILIARITY WITH OTHER MANUALS LIKE WAGON MAINT. MANUALS	06
ME/132	ATTENTION TO DRAFT GEAR OF CBC	03

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/133	CHANGING WHEELS, SPRINGS, BRASS CHANGING ETC	03
ME/061	BASIC IDEA OF TRAIN LIGHTING & AIR CONDITIONING	03
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	30
ME/GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	06
	VISIT TO A MAJOR WAGON DEPOT	01

Module No.	(MECH 14)	**Department**	MECHANICAL
Category	WELDER	**Duration**	26 WEEKS
Stage	PROMOTION FROM HELPER TO TECHNICIAN	**Activity**	C&W DEPOT, WORKSHOPS

TECHNICAL QUALIFICATION- NON-ITI/ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN WEEKS
ME/001	FOUNDATION	02
ME/002	GENERAL SAFETY, ACCIDENTS INCLUDING FIRE FIGHTING	01 DAY
ME/003	SAFETY IN WORK PLACE	02 DAYS
ME/010	FIRST AID	01 DAY
ME/014	CLEANLINESS OF WORKING ENVIRONMENT	02 DAYS
ME/042	KNOWLEDGE OF DIFFERENT TYPES OF WELDING ARC WELDING, GAS WELDING, CO_2 WELDING, TIG, MIG	01
ME/301	APPARATUS FOR WELDING SELECTION OF ELECTRODES TYPES OF WELDING JOINTS, SURFACE PREPARATION	02
ME/302	PROPERTIES OF WELDABLE MATERIALS	01
ME/303	WELDING DEFECTS, INSPECTION & TESTING OF WELDS SAFETY PRECAUTIONS SAFETY GADGETS	01
ME /045	TYPES OF ROLLING STOCK USED ON INDIAN RAILWAYS	01
ME/305	RECLAMATION/REPAIRS OF COMPONENTS BY WELDING VIZ. KNUCKLES, BRAKE BEAMS, WEARING SURFACES ETC	01
ME/306	PRACTICAL ON THE JOB TRAINING IN VARIOUS SECTIONS OF THE W/SHOP VIZ. CARRIAGE SHOP, WAGON SHOP ETC	10
ME / MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	04
ME/ GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	01
	VISIT TO A MAJOR C&W DEPOT, CRWS BHOPAL ANY WAGON MANUFACTURING FIRM	01

Module No.	(MECH 15)	**Department**	MECHANICAL
Category	MILL WRIGHT	**Duration**	72 Days
Stage	PROMOTION FROM HELPER TO TECHNICIAN	**Activity**	C&W DEPOT, WORKSHOPS

TECHNICAL QUALIFICATION- NON-ITI/ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/401	KNOWLEDGE OF DIFFERENT TYPES OF MACHINES LATHES COMPRESSORS, DRILLING, SHAPING, MILLING CRANES, TRAVERSERS, VEHICLES, MATERIAL HANDLING EQUIPTS. PREVENTIVE MAINTENANCE SCHEDULES OF MACHINES	06
ME/402	TYPES OF BEARINGS, INSPECTION, LUBRICATION VIBRATION AND NOISE CONTROL	05
ME/403	INSTALLATION AND COMMISSIONING OF DIFFERENT TYPES OF MACHINES	03
ME/404	KNOWLEDGE OF HYDRAULICS & PNEUMATIC CIRCUITS	02
ME/405	KNOWLEDGE AND OF ELECTRICAL AND ELECTRONIC DEVICES	06
ME/406	FAMILIARITY WITH LOGICAL CIRCUITS OF CNC MACHINES	06
ME/061	BASIC IDEA OF TRAIN LIGHTING & AIR CONDITIONING	03
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	30
ME/GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	06
	VISIT TO OTHER WOSRKSHOPS/PUs FOR LEARNING THE FUNCTIONING OF MILLWRIGHT ORGANISATION	05

Module No.	(MECH 16)	**Department**	MECHANICAL
Category	FORGING	**Duration**	72 Days
Stage	PROMOTION FROM HELPER TO TECHNICIAN	**Activity**	WORKSHOPS

TECHNICAL QUALIFICATION- NON-ITI/ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/045	TYPES OF ROLLING STOCK USED ON INDIAN RAILWAYS	06
ME/201	THEORY & PRACTICE OF FORGING, FORGABLE QUALTY OF FERROUS & NON-FERROUS METALS, DEFECTS IN FORGING & MEASURES TO AVOID THE DEFEFTS	12
ME/202	SPECIAL EMPHASIS & REASON FOR USE OF METAL AT CORRECT TEMPERATURE FOR FORGING	06
ME/305	RECLAMATION/REPAIRS OF COMPONENTS	03
ME/061	BASIC IDEA OF TRAIN LIGHTING & AIR CONDITIONING	03
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	30
ME/ GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	06
	VISIT TO A MAJOR C&W DEPOT	06

Module No.	(MECH 17)	**Department**	MECHANICAL
Category	TRIMMER	**Duration**	72 Days
Stage	PROMOTION FROM HELPER TO TECHNICIAN	**Activity**	C&W DEPOT, WORKSHOP (CARRIAGE)

TECHNICAL QUALIFICATION- NON-ITI/ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/241	READING & UNDER STANDING DRAWINGS MARKING OF DRAWINGS & CUTTING PATTERN	03
ME/242	USE OF HAND TOOLS/MACHINES RELATED TO CUTING STITCHING, JOINING LEATHER CLOTH, REXINE ETC USE OF FIRE RETARDENT CLOTH	03
ME/243	KNOWLEDGE OF RUBBERISED COIR, FOAM, JUTE-CUTTING & JOINING PRACTICE	03
ME/244	STRIPPING, INSPECTION & REPAIRS TO CUSHIONED SEATS	10
ME/245	KNOWLEDGE REGARDING FIBRE GLASS MATERIAL REPAIRS & MANUFACTURE PRACTICES	06
ME/246	VESTIBULE MANUFACTURE, SOFA REPAIRS OF SALOONS	02
ME/GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	06
ME/061	BASIC IDEA OF TRAIN LIGHTING & AIR CONDITIONING	03
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	30
	VISIT TO A MAJOR C&W DEPOT	06

Module No.	(MECH 18)	**Department**	MECHANICAL
Category	PAINTER	**Duration**	72 Days
Stage	PROMOTION FROM HELPER TO TECHNICIAN	**Activity**	C&W DEPOT, WORKSHOP

TECHNICAL QUALIFICATION- NON-ITI/ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/045	TYPES OF ROLLING STOCK USED ON INDIAN RAILWAYS PAINTING SCHEDULES OF COACHES INCLUDING LHB	06
ME/281	USE OF MANUAL&AUTOMATIC PAINTING EQUIPMENTS GRIT/SAND BLASTING, ELCTROSTATIC PAINTING DETAILS ABOUT PAINTING BOOTH	06
ME/282	TYPES OF PAINTS, FILLERS, PUTTY, PRIMERS, PU PAINT SPECIFICATIONS AND PROPERTIES	06
ME/283	THEORY AND PRACTICAL OF SURFACE PREPARATION FOR PAINTING, PHOSPHATING	02
ME/284	SAFETY DURING PAINTING	02
ME/285	STENCIL CUTTING, LETTER WRITING DECAL MANUFACTURE & APPLICATION	01
ME/061	BASIC IDEA OF TRAIN LIGHTING & AIR CONDITIONING	03
ME/286	PRACTICAL ON THE JOB TRAINING IN VARIOUS SECTIONS OF THE WISHOP VIZ. CARRIAGE SHOP, WAGON SHOP ETC.	05
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	30
ME/GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	06
	VISIT TO RCF/ICF	05

Module No.	(MECH 19)	**Department**	MECHANICAL
Category	CARPENTRY	**Duration**	72 Days
Stage	PROMOTION FROM HELPER TO TECHNICIAN	**Activity**	C&W DEPOT, WORK SHOP (CARRIAGE)

TECHNICAL QUALIFICATION- NON-ITI/ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/045	KNOWLEDGE ABOUT VARIOUS COACHES, THEIR SPECIAL FEATURES AND POH PERIODICITY	10
ME/501	TYPES OF PLYWOOD, COMPREG, DECORATIVE LAMINATED SHEET, ADHESIVES	03
ME/502	INTRODUCTION OF HANDLING TOOLS, CLASSIFICATION OF TOOLS, MARKING, MEASURING, INSPECTING TOOLS, CUTTING/PLANNING/BORING AND DRILLING TOOLS STRIKING AND FIXING, MISCELLANEOUS TOOLS,	06
ME/503	INTRODUCTION TO VARIOUS TYPES OF JOINTS, JOINTS USED IN RAILWAYS, CARE & MAINTENANCE OF JOINTS	02
ME/504	VARIOUS TYPES OF CARPENTRY PROCESS	03
ME/505	READING AND UNDERSTANDING DRAWINGS, MARKING OF DRAWINGS AND CUTTING PATTERNS	03
ME/506	INTRODUCTION TO AUXILIARY MATERIALS, NATURAL FIBRE THERMOSET COMPOSITE (NFTC) & FIBRE REINFORCED PLASTIC (FRP), TECHNOLOGY, PROPERTIES	02
ME/061	BASIC IDEA OF TRAIN LIGHTING & AIR CONDITIONING	03
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	30
ME/GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	06
	VISIT TO RCF/ ICF AND A MAJOR C&W DEPOT	04

Module No.	(MECH 20)	**Department**	MECHANICAL
Category	MACHINIST	**Duration**	72 Days
Stage	PROMOTION FROM HELPER TO TECHNICIAN	**Activity**	C&W DEPOT, WORKSHOPS

TECHNICAL QUALIFICATION- NON-ITI/ITI

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/601	USE OF TOOLS, PROCESS OF HEAT TREATMENT PRECISION INSTRUMENTS, GAUGES & TEMPLATES TYPES OF TOOLS: HAND &MEASURING	06
ME/602	TYPES OF WHEELS USED IN ROLLING STOCKS, WHEEL DEFECTS, STANDARD & WORN OUT WHEEL PROFILES	06
ME/603	TYPES OF WHEEL LATHES, VARIOUS ATTACHEMENTS, SETTINGS AND OPERATIONS, MINOR MAINTENANCE	06
ME/604	DRILLING, SHAPING & SLOTTING MACHINES, PLANERS LIMITS FITS & TOLERANCES, GRINDER, JIGS & FIXTURES	03
ME/605	WORKING OF CNC MACHINES (PRACTICAL KNOWLEDGE OF PROGRAMMING ETC)	06
ME/061	BASIC IDEA OF TRAIN LIGHTING & AIR CONDITIONING	03
ME/MSK	MULTISKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP	30
ME/GEN	THEORATICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS	06
	VISIT TO DMW/PATIALA	06

Module No.	(MECH 21)	**Department**	MECHANICAL
Category	ALL ARTISAN TRADES	**Duration**	12 Days
Stage	REFRESHER	**Activity**	C&W DEPOT, WORKSHOPS

PERIODICITY: AFTER EVERY 3 YEARS

SUB-MOD. NO.	DESCRIPTION	DURATION IN DAYS
ME/R1	- REVISION OF CRITICAL MAINTENANCE PRACTICES - INTRODUCTION TO LATEST MODIFICATION IN ROLLING STOCK, BIO-TOILETS - KNOWLEDGE OF DISASTER MANAGEMENT TO HANDLE ACCIDENT CASES - KNOWLEDGE OF ENVIRONMENT & HOUSEKEEPING MANAGEMENT (EnHM) - FAMILIARIZATION WITH NEW TECHNOLOGICAL DEVELOPMENTS IN ROLLING STOCK, MATERIAL HANDLING EQUIPMENTS, SUB-ASSEMBLIES AND MATERIALS - KNOWLEDGE OF 5S, ISO 14001, 9001 & 50001 - INDUSTRIAL SAFETY - PERSONAL PROTECTIVE EQUIPMENTS (PPE) - FOCUS ON PREVAILING PROBLEMS - RECOMMENDED VISIT TO THE PLACE OF BEST/ DESIRABLE MAINTENANCE PRACTICE AREA / SHED/ WORKSHOP/DEPOT /PRODUCTION UNIT - BASIC WORKPLACE ETHICS AND ITS IMPORTANCE - IMPORTANCE OF MOCK DRILL AND ITS PRACTICAL DEMONSTRATION - EOT CRANE: BASICS AND MAINTENANCE - INTRODUCTION TO RESCUE DEVICES OF ART/ARMV/140T BD CRANE USED AT ACCIDENT SITES	

ME /001

ALL STAFF

DESCRIPTION

FOUNDATION

CONTENTS

1. General awareness regarding Railway Organization in Workshop & Open line.
2. Role of Mechanical Department in Railways.
3. Basic Rules in respect to Pass, Leave etc.
4. Basic concepts regarding Service conduct and D&A Rules.
5. Basic knowledge of Computer
6. Basic workplace Ethics and its importance

ALL STAFF

DESCRIPTION

GENERAL SAFETY, ACCIDENTS INCLUDING FIRE FIGHTING

CONTENTS

A. Safety precautions

1. Safety precautions in Carriage shop/PIT lines.
2. Safety precautions in Corrosion shop.
3. Safety precautions during inspection of coaches.
4. Safety precautions while attending to under gear.
5. Safety precautions during Arc Welding/CO-2 Welding earthing and other precautions.
6. Safety precautions during oxy acetylene cutting
7. Safety precautions during material handling.
8. Safety precautions when safety - hindering practices/situations are noticed.
9. Safety precautions while attending to components on roof.
10. Safety precautions while working in narrow places/batch rooms/coach ends.
11. Safety precautions for operation of EOT Crane, HOIST in Shop/Sheds.

B. Fire Fighting

1. Types of fires.
2. Equipment required-their names.
3. Details of different types of firefighting equipment with parts and their functions.
4. Application of equipment
5. Layout of the area for keeping the equipment.
6. Operation of the equipment.
7. Safety precautions.
8. Action after putting out fires.
9. Mobilization of equipment from surrounding areas.
10. Repairs and maintenance of the equipment
11. Importance of Mock Drill and its practical demonstration

ALL STAFF

DESCRIPTION

SAFETY IN WORK PLACE

CONTENTS

1. Awareness regarding Safety while working.

2. Use of Personnel Protective Equipments (PPE).

    a. Eye and Face Protection – Helmet, Masks, Screens, Spectacles/ Goggles, harmful effects of fumes on eye-sight.

    b. Foot Protection - Safety footwear

    c. Body protection – Apron for welding & cutting, welding leg guard, welding blankets, awareness about type of clothing materials against fire.

    d. Hand Protection - Gloves for industrial jobs
    e. Head Protection - Safety helmets, Hearing Protection- Use of earplugs/earmuffs.
    f. Health Protection – Awareness regarding Occupational Health and Safety Assessment Series (OHSAS)

ALL STAFF

DESCRIPTION

USE OF MEASURING TOOLS

CONTENTS

1. Metric Rule.
2. Comparison between metric rule and foot rule and conversion of one system another.
3. Inside outside calipers-ordinary and spring loaded.
4. Procedure for measuring length / diameter.
5. Different kinds of micro-meters inside micro-meters, outside micro-meters. Vernier, micro-meters and their usage.
6. Vernier caliper and Vernier level protractors-their applications.
7. Dial test indicator and its usage.
8. Voltmeter how to read only.
9. Ammeter- how to read only.
10. Torque wrenches of different capacities, and their specific applications.
11. Basic ideas about jigs and fixtures used by fitters.

ALL STAFF

DESCRIPTION

USE OF HAND AND PORTABLE TOOLS

CONTENTS

1. Hand hammers

   Types and applications.

2. Chisels

   Types and applications.

3. Files and scrapers

   Types and applications.

4. Clamps, bench vice, leg vice.

   Methods of securing work pieces. Cleaning lubrications
   Maintenance of the vices.

5. Punches, combinations etc.

   Types and applications.

6. Spanners

   Single end and Double end, screw type, wrench type Varian sizes
   Their uses and their method of handling.

7. Drills

   Different types and sizes and their suitability in light/medium/heavy works.

ME /006

ALL STAFF

DESCRIPTION

READING OF DRAWINGS

CONTENTS

1. Concept regarding basic drawings.
2. Concept regarding plan, elevation, end view etc.
3. How to read a drawing. Samples cases.

ALL STAFF

DESCRIPTION

MATERIAL SPECIFICATIONS, PROPERTIES, BEARINGS, LUBRICANTS AND DRIVES

CONTENTS

1. Concept of material specification.
2. Different types of bearings and their uses – advantages & disadvantage.
3. Uses of bearing in Locomotives, Wagons and Coaches.
4. Type of lubricants and their properties.
5. Types of drives (Belt drive, Gear drive) and its applications.

ALL STAFF

DESCRIPTION

ARC WELDING

CONTENTS

1. Description and use of Electric arc welding equipment and assembly setting - care maintenance-A.C., D.C., currents, simple theory of welding circuit & arc, Positive, Negative, Earth-electrodes types-size selection. Safety precautions, circuits & electricity practical welded joints. Related theory. Welding defects and avoidance.

2. Types of patches standard procedures correct fittings and set up for welding. Simple clamps welding jigs & fixtures. Related theory of plasma cutting and arc welding.

3. Electric arc welding practice, down hand, straight-line beads on mild steel Plates. Tacking lap & butt welding of plates. Angles& flats fillet weld up to12mm. Flats corner welds, plaster welds & building up on steel plate.

4. Horizontal, vertical and overhead welding practice.

5. Edge preparation for welding of jobs, penetration of weld run, chipping/cleaning of scale, welding defects, proper earthing practice

ALL STAFF

DESCRIPTION

GAS WELDING & CUTTING

CONTENTS

1. Description and use of gas and cutting equipment assembly care & maintenance simple theory of flame gases. Safety precaution in gas cuttings.

2. Setting up of gas & Arc apparatus, sighting and adjustment on flame striking on arc. Gas cutting of plates, angles, flats, rods and piercing holes by gas flame.

3. Correct job set up- standard procedures, IRCA Rules.

4. Panel (body) & door patch. Gas cutting, setting up and welding on wagon & coach body Floor patching and re-flooring Plasma cutting.

5. Gas cutting and welding sole bar, under frame members on wagon or coaches.

ALL STAFF

DESCRIPTION

FIRST AID

CONTENTS

1. Types of wounds.
2. Types of burns.
3. Kinds of bleedings.
4. Types of fractures and preliminary attention.
5. Types of bandages.
6. Chemicals used in first aid.
7. Precautions to be taken at the time of first aid.
8. First aid box-Medical attendance.
9. Check after first aid.
10. Building up morale of the injured.
11. Artificial respiration.
12. Knowledge of First Aid manual, Tweezers, Alcohol Swabs, Antibiotic Ointment, Gauza Pads, Medical tape
13. Sterile adhesive, strip dressing, Antiseptic cream, use of digital thermometer and mandatory items for First-Aid Box.
14. Antiseptic spray dressing, Oral dehydration powder, Disposable syrings, Use of wash proof band aid strips, Anti-inflammatory spray.

ALL STAFF

DESCRIPTION

KNOWLEDGE OF COMPRESSORS AND OPERATION

CONTENTS

1. Different types of Compressors and their uses.
2. Operation of Compressor and its capacity.
3. Use of Compressed air in Rolling Stock and equipments.
4. Use of moisture separator in compressed air pipe line.

ALL STAFF

DESCRIPTION

LIFTING AND HANDLING DEVICES

CONTENTS

1. Basic knowledge of lifting of coach and wagon by using lifting hook, screw jacks hydraulic jacks and Electric Overhead Cranes
2. Knowledge regarding chains, hooks and hoists.
3. To know about safe uses of lifting jacks and handling equipments.
4. Safe working of fork lifter, tractor, platform truck, road crane.

ALL STAFF

DESCRIPTION

CLEANLESS OF WORKING ENVIRONMENT

CONTENTS

1. How working environment can be kept clean – its necessity.
2. To keep environment clean in regard to pollution – dirt, fumes, excessive sound etc.
3. Cleanliness and Hygiene for leading a Healthy Life, Cleanliness of surrounding & work place, Stacking of materials, Disposal of scraps, Wet mopping & Dust mopping.
4. Cleaning agents - liquids, powders, sprays & granules used to remove dirt, dust, stains, bad smells and to kill bacteria. Soap, detergent, Lysol, Collins, Odonil etc. Toilet hygiene and deodorant products.
5. Door cleaners, Window cleaners, drain cleaners, Toilet bowl cleaners, Carpet cleaners, Metal cleaners & Scouring cleaners.
6. Acidic cleaning agents, Alkaline cleaning agents and Degreaser

ALL STAFF

DESCRIPTION

KNOWLEDGE OF DIFFERENT TYPES OF COACHES & BOGIES

CONTENTS

1. Types of coaches: AC and Non-AC and types, DMU and Main line coaches.
2. Types of coaching bogies: ICF all coil, FIAT.
3. Major components of coaches/bogies for air brake system.
4. Passenger amenities and Safety items

ALL STAFF

DESCRIPTION

KNOWLEDGE OF DIFFERENT TYPES OF WAGONS AND BOGIES

CONTENTS

1. Types of wagons: 4-wheelers and 8-wheelers.
2. Types of freight bogies: CASNUB.
3. Major components of wagons/bogies for air brake system.
4. CBC, Screw coupling, side buffers etc.

ME /017

ALL STAFF

DESCRIPTION

FAMILIARITY WITH CARPENTRY AND TRIMMING TOOLS

CONTENTS

1. INTRODUCTION OF HANDLING TOOLS, CLASSIFICATION OF TOOLS, MARKING, MEASURING, INSPECTING TOOLS, CUTTING/PLANNING BORING AND DRILLING TOOLS, STRIKING AND FIXING, MISCELLANEOUS TOOLS.

2. INTRODUCTION TO VARIOUS TYPES OF JOINTS, JOINTS USED IN RAILWAYS, CARE & MAINTENANCE OF JOINTS.

3. USE OF HAND TOOLS/MACHINES RELATED TO CUTING, STITCHING, JOINING LEATHER CLOTH, REXINE ETC.

ME /018

ALL STAFF

DESCRIPTION

FAMILIARITY WITH PAINTING EQUIPMENTS & PAINTING METHODS

CONTENTS

1. KNOWLEDGE ABOUT PRIMERS, UNDER COATING, MATERIALS USED AS PUTTY& FILLERS AND APPLICATION, DETAILS ABOUT PAINTING BOOTH.

2. KNOWLEDGE & APPLICATION OF NEW KINDS OF PAINTS INCLUDING SURFAC PREPARATION, PAINT EQUIPMENTS.

3. STENCIL CUTTING, LETTER WRITING

ME /019

ALL STAFF

DESCRIPTION

BASIC KNOWLEDGE OF ELECTRICAL PARAMETERS

CONTENTS

1. KNOWLEDGE ABOUT CURRENT, RESISTANCE AND VOLTAGE, AC AND DC.
2. BATTERIES: SPECIFIC TO COACH BATTERIES.
3. SAFETY PRECAUTIONS WHILE DEALING WITH AC AND DC
4. DIFFERENCE BETWEEN AN ALTERNATOR AND A MOTOR
5. USE OF AMMETER, VOLTMETER AND MULTIMETER

ME /020

ALL STAFF

DESCRIPTION

FAMILIARITY WITH MACHINING & TURNING

CONTENTS

1. INTRODUCTION TO DRILLING, SHAPING & SLOTTING MACHINES, PLANERS, GRINDERS.
2. INTRODUCTION TO WHEEL LATHE.
3. VARIOUS ATTACHMENTS OF LATHE MACHINE
4. OPERATIONS ON LATHE MACHINE: TURNING, THREADING, TAPER TURNING, KNURLING ETC

C&W TECHNICIAN

DESCRIPTION

USE OF PNEUMATIC/ELECTRIC AND HYDRAULIC PORTABLE TOOLS

CONTENTS

1. Use of pneumatic/electric and hydraulic portable tools in carriage & wagon depot-practical demonstration and their safety precautions.

C&W TECHNICIAN

DESCRIPTION

ELECTRIC ARC WELDING /GAS WELDING SETS INCLUDING CO_2 AND MIG WELDING

CONTENTS

1. Electric Arc Welding/Gas Welding sets including CO_2 and MIG Welding – Equipments used, procedure of welding, Testing- safety precaution.
2. Designation & composition of different types of steels and their mechanical properties, types of cutting flames and their temperature range.

C&W TECHNICIAN

DESCRIPTION

KNOWLEDGE OF VARIOUS TYPES OF MECHANICAL FASTNERS, WASHERS, METHODS OF SEALING AND LOCKING OF BOLT, CLEARENCE, FITS AND TOLLERANCE

CONTENTS

1. Knowledge of various types of Mechanical fasteners, washers, Methods of sealing and locking of bold, clearance, fits and tolerance.

2. Reading and understanding Drawings & Surface finish symbols

ME /044

C&W TECHNICIAN

DESCRIPTION

KNOWLEDGE OF DIFFERENT TYPES OF BEARING & LUBRICATOR (GREASES, OIL ETC.) ON COACHES AND WAGONS

CONTENTS

1. Knowledge of different types of Bearing & Lubricator (Greases, Oil etc.) on coaches and wagons.

C&W TECHNICIAN

DESCRIPTION

KNOWLEDGE OF TYPES OF WAGONS AND COACHES ON INDIANS RLYS., SPL. FEATURES OF EACH, SPECIAL MAINTENANCE REQUIREMENT OF EACH

CONTENTS

a) Types of wagons& coaches: - General ideas on items generally loaded, tare, carrying capacity, type of trolley, braking system, axle load, wheel set used, type of suspension arrangement, load transfer, brake & Tractive force quantity and transfer, coupling use on each type wagons.

b) Identification of important parts of the stock and their function.

c) Rejection limit of important parts.

d) Special features of different types of coaches and wagons and their POH /ROH periodicity

e) Rolling Stock components prone to corrosion.

C&W TECHNICIAN

DESCRIPTION

SAFETY & OPERATING REQUIREMENTS FOR AIR BRAKE TRAINS

CONTENTS

1. Air brake trains- Basic idea of working system, maintenance practice and testing procedure (with single car, rake test rig), knowledge of Brake power percentage. Specific level of air pressure(BP & FP), leakage permissible for each type (Coaching, Goods), Alarm chain testing of coaching trains and resetting procedure, Engine testing.

2. Air brake- Direct release and Graduated release, Single pipe and Twin pipe air brake system layout, Working principle - Charging application release of air brake, Working of D.V, C.R, B.C, Isolating cock, PEASD, PEAV, Brake cylinder of bogie mounted- Inbuilt single active Slack adjuster mechanism-Overhauling testing, trouble shooting.

ME /048

C&W TECHNICIAN

DESCRIPTION

ROLLER/PLAIN BEARINGS
MAINTENANCE, DISMANTING IF AUTHORISED

CONTENTS

Basic idea on types of bearings used in each stock. Brand and quality of lubricant used. Preventive measures to be taken to avoid failure of bearing (Roller, Plain).
Analysis of roller bearing defects: make wise, cause wise and remedial actions

C&W TECHNICIAN

DESCRIPTION

CASNUB BOGIE, ICF (ALL COIL), FIAT,
IR-20 BOGIES CHECKING & WELDING REPAIRS

CONTENTS

Salient features of CASNUB BOGIE of different types, 22 NLB, 22 NEM, 22 HS, IRF 109 HS

Construction of ICF (ALL COIL) bogies,

IR-20 Bogies Checking &Welding Repairs,

FIAT bogies of LHB coaches, Design features and components, Maintenance including repairs.

ME /050

C&W TECHNICIAN

DESCRIPTION

YARD WORKING

CONTENTS

Examination yard for closed circuit rakes (PME) and Intensive examination of Goods Train. Trip Schedule of Coaching trains in unified maintenance pit, testing of trains with Rake test rig for Air brake train, Loco testing, Issuing of BPC and stipulated brake power percentage for Coaching and Goods train. Repair in Yard.

ME /051

CARRIAGE & WAGON FITTER

DESCRIPTION

KNOWLEDGE OF IRCA (Part-III & IV) RULES

CONTENTS

Rejection rule, procedure for examination-Intensive examination- Rolling in examination Different markings on Coaches and Wagon & their interpretation - Clearances, sizes and Safety limits of various parts.

C&W TECHNICIAN

DESCRIPTION

KNOWLEDGE OF TRAIN PASSING

CONTENTS

1. Rolling in examination in yards for freight trains & on stations for passenger trains.
2. Safe to run examination wherever applicable.
3. Rolling out examination wherever authorized.
4. Axle Box Feeling
5. Piston Releasing
6. RPC-IV
7. Brake Power Certificate
8. GDR (Guard Driver Report)
9. Continuity Test
10. Safety Items to be kept in Brake Van e.g. Spare Air Hose, Fire Extinguisher etc.

ME /053

C&W TECHNICIAN

DESCRIPTION

ATTENTION TO CBC

CONTENTS

CBC- Dismounting & mounting - Attention to CBC, its parts, their functions-high tensile CBC. Advantage of CBC, Gauging and inspection procedure for knuckling, lock CBC coupler, Draft gear, Checking of CBC Anti-creep arrangement effectiveness,
CBC height checking.

ME /054

C&W TECHNICIAN

DESCRIPTION

WHEEL CHANGING, REPLACING SPRING,
BRASS CHANGING

CONTENTS

Knowledge of wheel profile, Rejectable defects, pairing of wheels, free height and condemning height of springs, checking of bearing brass.

ME /055

C&W TECHNICIAN

DESCRIPTION

TROUBLE SHOOTING ON TRAIN OPERATION
DERAILMENT MECHANISM AND SAFETY ITEMS

CONTENTS

Trouble shooting on coaching and goods train operation-

a) Brake binding

b) Poor brake power

c) Air pressure trouble

d) Hot axle

e) Spring breakage

f) Train parting

g) Body bulged out

h) Load shifted

i) Tank wagon leakage

j) Hanging part

k) Unusual sound

l) Alarm chain pulling

Derailment Mechanism: Basic rail wheel interaction, Rolling stock and Track defects

C&W TECHNICIAN

DESCRIPTION

BOGIE REPAIR AND SCHEDULES

CONTENTS

1. Schedule A, B & C/IOH for coaches
2. Special schedules for High speed trains (Time period/Kilometers as the case may be)
3. ROH for wagons

Study of relevant Maintenance Manuals issued by RDSO/Railway Board.

CARRIAGE & WAGON FITTER

DESCRIPTION

FLOOR REPAIRS

CONTENTS

1. Materials used in masonry work. Their required properties.
2. Ratios for the ingredients in decoliting work. Tests for flooring composition crystals.
3. Tools equipments used for mixing cements chemicals.
4. Different kinds of tiles used in bathrooms of coaches, inspection carriages.
5. Procedure for application If decoliting work.
6. Precautions and quality control in decoliting work.
7. Shades, sizes and properties of PVC and linoleum sheet rolls.
8. Advantages of PVC sheets for improving cleanliness of coaches.
9. Preparation for laying vinyl sheets. Fixing of bottom support, Use of plywood and NFTC Sheets below PVC.
10. Welding gun electrodes for laying vinyl sheets. Procedure for preparation of joints.
11. Precautions to be taken in laying vinyl sheets and their quality control.
12. New materials for coach flooring- Epoxy flooring compound etc.

CARRIAGE&WAGON FITTER

DESCRIPTION

FIRE EXTINGUISHER AND ITS MAINTENANCE

CONTENTS

Types of fire extinguishers. Periodicity of Maintenance of different types.

Safety Precaution.

Method of operation.

Refilling. Cartridge handing. Expiry date checking.

Conversant with DCPT Fire extinguisher.

Application of Fire extinguisher during fire hazard.

Quarterly Inspection of Powder and Cartridge.

C & W TECHNICIAN

DESCRIPTION

MAINTENANCE OF HIGH-SPEED TRAINS

CONTENTS

Special Maintenance of high-speed trains (Coaching and Goods) as per instruction/Manuals issued by RDSO.

Mandatory requirement of running trains at 110 KMPH: Close tolerance, 100% brake power, no overdue schedule etc.

Maintenance of Rajdhanis and Shatabdis

Maintenance of CONCOR wagons

ME /061

C & W TECHNICIAN

DESCRIPTION

BASIC IDEA ON AC, DC CURRENT, VOLT METER, AMMETER, LIGHTING OF COACHES, BATTERY CHARGING, SINGLE/THREE PHASE.

CONTENTS

Basic idea on AC, DC Current, Volt Meter, Ammeter, Lighting of coaches, Battery charging, single/three phase, Basic wiring diagram of SG, EOG and MOG coaches

CARRIAGE & WAGON FITTER

DESCRIPTION

CASNUB BOGIE COMPONENTS CHECKING AND REPAIRS

CONTENTS

1. Types of CASNUB Bogie
2. Components
3. Suspension systems
4. CTRB
5. Criteria for condemnation of Wheel
6. Assembly of CASNUB Bogie

ME /081

CARRIAGE FITTER

DESCRIPTION

FLOOR PREPARATION AND REPAIR

CONTENTS

1. Materials used in masonry works and their required properties.
2. Ratios for the ingredients in decoliting work.
   Tests for flooring composition crystals.
3. Tools equipments used for mixing cements chemicals.
4. Different kinds of tiles used in bathrooms of coaches inspection carriages.
5. Procedure for application of decoliting work.
6. Precautions and quality control in decoliting work.
7. Shades, sizes and properties of PVC and linoleum sheets rolls.
8. Advantage of PVC sheets for improving cleanliness of coaches.
9. Preparation for laying vinyl sheets. Fixing of bottom support.
10. Welding gun electrodes for laying vinyl sheets.
    Procedure for preparation of joints.
11. Precautions to be taken in laying vinyl sheets and their quality control.

CARRIAGE FITTER

DESCRIPTION

DE-WHEELING, LIFTING AND LOWERING OF COACH

CONTENTS

1. De-wheeling – Re-wheeling bogie, lifting of bogie frame stripping axle box springs/ bolster springs wheel pairing and NFTC packing of axle box wings, assemble lower spring seat on axle box-lowering of bogies, strip/Repair/Replace axle guide assembly brake gear and bolster assembly, anchor links, center pivot arrangement and drag links.

2. Lifting/lowering coach – Dismantling of main brake pull rod/center pin, cotter/dynamo bolts, tie bar safety/straps. Apply OHE Crane, tackle, lifting Jacks-rolling out/in bogies.

3. Construction features of Coach and Bogies arrangement, Safety Precaution while lifting/lowering of Coach to avoid accident/damage with crane lifting jacks.

CARRIAGE FITTER

DESCRIPTION

MAINTENANCE OF DRAW GEAR, BUFFER AND HEAD STOCK

CONTENTS

1. Function of Draw and Buffing gear.
2. Component identification.
3. T&P required for stripping of components.
4. Stripping
5. Wear location, tolerances and condemning limit of critical dimensions.
6. Inspection and Testing procedure
7. Fitment of Draw and Buffing gear.
8. Entrance capacity draw/buff gear.

CARRIAGE FITTER

DESCRIPTION

AIR BRAKE EQUIPMENTS
OVERHAULING & TESTING

CONTENTS

AIR BRAKE

1. Principle operation of Air brake system.
2. Over hauling procedure of Air brake equipment.
3. Detail knowledge regarding overhauling and testing of D.V.
4. Pipe line layout, checking & testing.
5. Knowledge above single car testing
6. POH procedure of Bogie mounted brake cylinder (B.M.B.C)

CARRIAGE FITTER

DESCRIPTION

EXAMINATION OF ROLLER BEARING AND TOPPING OF AXLE BOXES

CONTENTS

1. Dismantle, Inspection & assembly of Roller bearing axle boxes.

2. Use of special tool feeler gauge & equipment.
   Permissible wear and clearance in roller bearing – Type of bearing defects-Quantity/Quality and approved brands of grease used in Roller bearing.

3. Stud tightening by Torque wrench and Torque values for different bearing.

CARRIAGE FITTER

DESCRIPTION

CORROSION EXAMINATION

CONTENTS

1. Inspection of vulnerable areas of coach while in lift/pit for detection of corrosion and marking off the affected areas to be replaced.

2. Stripping/removal for Lav. Pan/commodes, seat/baths, quarter panel, Lav. Door etc.

3. Mark and prepare gas cutting line.

4. Correct method of placement of coach on trustles.

5. Inspection of Camber and re-cambering if necessary.

6. Fitment of sole bar, head stock, cross bars, through floor etc. and making ready for welding where required.

7. Preventive measures to arrest corrosion e.g., Phosphating, laying of FRP Tissues etc.

CARRIAGE FITTER

DESCRIPTION

BOGIE REPAIR INCLUDING DASH POT CHECKING AND OILING

CONTENTS

1. Identification of bogies & components.
2. Cleaning of Bogies.
3. Inspection of Bogies for cracks, corrosion & Physical deformation.
4. Types of gauges & Fixtures required for bogie repair and their use.
5. Wear limit of different parts
6. Repair practice of crack in bogie frame, Axle guide, anchor link, Bkts. Equalizing stay boxes, B.S.S Bkts. Etc.
7. Coupling & uncoupling procedure of Secondary suspension
8. Testing procedure of Bolster/Axle springs including Bosch tank cleaning.
9. Testing procedure of components like Dash pots, BSS Pin, BSS Hanger etc.
10. Pairing of wheels, preparation of Axle box wings by providing NFTC packing, compensating ring, lower spring seat, Axle spring, protective cover.
11. Necessary guide lines to be followed in regards to pairing of wheel and oil filling in Dash pot.

CARRIAGE FITTER

DESCRIPTION

BRAKE GEAR EXAMINATION, REPAIRS AND ADJUSTMNT

CONTENTS

1. Brake gear components identification and their condemning limits.
2. Replacement of spares with 100% Nylon bush fitting.
3. Differentiate between A.C and Non-A.C Brake rigging arrangement.
4. Differentiate between A.C and Non-A.C B.M.B.C
5. Overhauling of SAB, Fitment and adjustment.

CARRIAGE FITTER

DESCRIPTION

PLUMBING WORK IN COACH WATER SUPPLY

CONTENTS

1. Pipe line layout in coach – Types of pipes, connections, pipe threads.

2. Water pipe assembly- dismantle, strip, install, repair, refit pipe line in section. Remove-Repair- Refit commode - Wash basin – Push cock – Flusher cock- shower cock – Water tank.

3. Under slung water tank and water raising apparatus – Used in A.C Coaches with roof mounted, A.C package.

CARRIAGE FITTER/TECHNICIAN

DESCRIPTION

BIO-TOILETS

CONTENTS

1. Application of Bio-toilet in IR.
2. Ideas about Bio-toilet and its principle.
3. Bacteria used in Bio-toilet, charging of bacteria.
4. Precaution taken during charging of bacteria.
5. Bio-toilet tank and its capacity, cleaning Instruction of bio-toilet.
6. Testing of discharged water (PH, Total dissolved solid, TDS, & TVS etc) from the bio-tank and its limit, Chlorine tablet charging.
7. Instruction for user, safety in Bio-toilet.
8. How to tackle the problem of Choking in Bio-toilet.

WAGON FITTER

DESCRIPTION

GENERAL KNOWLEDGE OF VARIOUS WAGONS (INCL. REPAIRS)

CONTENTS

1. Different types of Wagons- Wagon body & under frame - Different types of bogies – Attention to bogie stock – Lifting arrangement – De-wheeling – Re-wheeling – Schedule of maintenance for Goods Stocks (4/8-wheeler).

2. Function of different gears i.e. draw gear, buffing gear etc.

3. Wheel & Axle – Type defects – Axle defects – Baring – reparation of A.O Packing, Roll packing. Hot boxes and its causes both for the Plain bearing and Roller bearing stock – their remedial measures. Cartridge bearing.

4. Air brake – Underframe and Bogie mounted.

5. Gauges different Carriage and Wagon gauges and their uses.

6. Load sensing device, ELB its working.

7. Latest design Wagons like BOXNHL, BLC etc.

8. Huck Bolting

WAGON FITTER

DESCRIPTION

ELECTRIC ARC WELDING
INCLUDING CO-2 & MIG WELDING

CONTENTS

1. Plasma cutting & arc welding practice.
2. Related theory standard procedure manuals IRCA Rules.
3. MIG welding standard procedure IRCA Rules.
4. Gas, plasma cutting & dressing up for welding brake gearing by manual electric arc and MIG/TIG welding.
5. Bogie welding (Box/Casnub) all types of jobs including plasma cutting & MIG Welding practice.
6. Stainless Steel Welding
7. Sub-merged Arc Welding (SAW) & requirement of Fixture

WAGON FITTER

DESCRIPTION

GAS CUTTING

CONTENTS

1. Description and use of gas and cutting equipment assembly care & maintenance, Simple theory of flame, flame gases, Safety precaution in gas cutting.

2. Setting up of gas & arc apparatus, Sighting and adjustment on flame striking on arc. Gas cutting of plates, Angles, Flats, Rods and piercing holes by gas flame.

3. Correct job set up – Standards procedures IRCA Rules.

4. Panel (body) & door patch. Gas cutting, setting up and welding on Wagon & Coach body. Floor patching and re-flooring (\Wagon only) Plasma cuttings.

5. Gas cutting and welding sole bar under frame members on wagon or coaches.

WAGON FITTER

DESCRIPTION

KNOWLEDGE OF VARIOUS TYPES OF BEARINGS & LUBRICATOR (GREASES, OILS ETC.) ON WAGONS

CONTENTS

1. Salient features of different type of bearing used on wagon.
2. Salient features of different types of lubricator used in different bearing. Air brake system, SAB etc.
3. Special features for CTRB used on wagons.

WAGON FITTER

DESCRIPTION

KNOWLEDGE OF VARIOUS TYPES OF WAGONS, SPECIAL FEATURES OF EACH AND MAINTENANCE REQUIREMENTS OF EACH WAGONS.

CONTENTS

1. Types of wagon used in Indian Railways
2. Special features of each type of wagons (with CBC, Under frame, Brake gear, SAB, Buffer etc.)
3. Requirement and maintenance schedule different types of wagon including (a) Corrosion Repair (b) Super Structure (Body) (c) under frame members (d) Under frame brake gear,
4. Rehabilitation of Air brake stock
5. Latest modification of various Air brake stock.

WAGON FITTER

DESCRIPTION

MAINTENANCE REQUIREMENTS OF EQUIPMENTS FOR AIR BRAKE

CONTENTS

Brake – Mechanism

Air Brake system:

(i) Salient features

(ii) General working procedure of ABS and interchange ability of components.

(iii) Installation, location, operation and trouble-shooting of different (Functional and operation at both)

Such as D.V, B.C, Cut of Angle cock, isolating cock, Dirt Collector, Main pipe, Branch pipe.

Air Brake components overhaul and testing procedure on test rig.

WAGON FITTER

DESCRIPTION

ROLLER BEARING – MAINTENANCE, DISMANTLING DETECTION OF ROLLING BEARING DEFECTS.

CONTENTS

1. Dismantling of roller bearing
2. Detection of defect of roller bearing parts
3. Overhauling procedure of roller bearing
4. Detection of defect of different parts of CTRB, its clearance as per G-81

WAGON FITTER

DESCRIPTION

CASNUB BOGIES CHECKING AND WELDING

CONTENTS

Salient feature of Casnub bogies, gauging of different location of trolley frame and components as per G-95 (revision-1)

WAGON FITTER

DESCRIPTION

KNOWLEDGE OF IRCA RULES

CONTENTS

1. Knowledge of IRCA rules for

    a) Brake gear arrangements.

    b) Corrosion repair

    c) Overhauling schedule of different wagon

    d) Painting of wagon

    e) Safety aspects of each wagon

WAGON FITTER

DESCRIPTION

ATTENTION TO DRAFT GEAR OF CBC

CONTENTS

1. Special features of HT Draft gear (RF-361 and Mark-50)
2. Checking of draft gear, coupler – its shank wear
3. Dismantling of draft gear of CBC
4. Overhauling of draft gear and welding procedure of draft gear during POH

WAGON FITTER

DESCRIPTION

WHEEL CHANGING, REPLACING, SPRING CHANGING, BRASS CHANGING

CONTENTS

1. Wheel profile and rejectable defect

2. Sizes of wheel required for different wagons (Axle and Disc Dia.)

ME /201

FORGING

DESCRIPTION

THEORY & PRACTICE OF FORGING, FORGABLE QUALITY OF FERROUS & NON-FERROUS METALS, DEFECTS IN FORGING AND HOW TO AVOID.

CONTENTS

Safety precautions in the trade including firefighting.

Common forging tools-Anvil, Gauging tool and templates. Use of finishing tools Such as Tongs, Fullers, Swages, Drifts, Punches, Dies, hand dies and machine dies.

Use of marking tools, measuring tools, Inspection tools and testing tools.

Use of thermostats, thermocouples. Pyrometers etc.

Use of leg-vice, use of various types of hammers and tongs.

Forgeable quality of ferrous & non-ferrous metals

Metal-Forgeable iron and its specialty.

Identification of metals like cast iron, mild steel, high carbon steel and alloy steel.

Iron- Its extraction pit-iron, cast iron, wrought-iron and steel.

Carbonizing materials and their use. Estimation of material and use of reference table, preparation of operation schedule.

Defects in forging-use of heavy hammers and its advantages

Mechanical properties of metals & alloys, Advantages of Forging over Casting,

Reading and understanding Drawings

ME /202

FORGING

DESCRIPTION

SPECIAL EMPHASIS & REASON FOR USE OF METAL AT CORRECT TEMPERATURE FOR FORGING.

CONTENTS

1. Principle of transmission of heat-conduction, convection, radiation.

2. Difference in melting point of mild steel, low medium and high carbon steel. Method of equalizing temperature to avoid burning of steel. Normalizing and annealing and their importance. Effect of heat on structures of steel. Heating for forging.

3. Advantage of working on correct heat. Defect due to improper heating and working. Precautions to be observed while working on high carbon steel.

4. Action of atmosphere on heated iron and formation of scales and its effect, Use of fluxes-borax, sand, glass powder and salt ammonia.

5. Forge-welding prosper heat, over heating-under heating and their effect.

6. Effect of heat on metal forging, heat plasticity and promotional elongation-governing factors.

7. Characteristic of fuels-solid, liquid and gaseous. Principle of bending-outside, inside and neutral.

8. Fibres-effect on them on heating for bending and effect of working on improper heat. Effect of hot working in the structure and mechanical properties of steel. Allowance for various types of heat.

9. Effect on finishing of proper heating.

10. Effect of cold working on metals. Advantage and disadvantage of cold working on metal. Cooling and its effect-cooling media.

11. Types of furnaces and control of temperature

12. Processes of Heat treatment & their effect on mechanical properties of materials

ME /281

PAINTER

DESCRIPTION

USE OF MANUAL & AUTOMATIC PAINTING EQUIPMENTS

CONTENTS

1. All common tools such as brushes and hand tools used in the trade.

2. Knowledge of other tools and equipment such as pneumatic chippers, hammers, portable grinders, scrapers.

3. Knowledge in spray painting equipment with compressed air and sign writing.

4. Sand grit blasting machine, vacuum blasting machine flame cleaning unit, stove enameling, airless.

5. Electrostatic spray painting and phosphating etc. Their operation and application technique. Spray painting of different types- such as corners, round, curved, machined and cast surfaces.

6. Practice on metal surface with the help of spray painting plants with compressed air.

PAINTER

DESCRIPTION

PAINT MATERIAL SPECFIFICATIONS & PROPERTIES

CONTENTS

1. Different types of paints, spirit, polish and varnishes. Their manufacturing processes and uses. Method of testing paints and varnishes. Putties, fillers, metal cement-their physical properties composition and application.

2. Description of paint component (a) Base (b) Filler (c) vehicles (d) Solvent (e) Drier (f) Pigment and their uses, preparation of pigments with oil, driers resins etč. Practice in the mixing and the matching of the colours.

   I. Primer, under coating, finishing: Basic principles and its importance, mixing of paints, colour matching by mixing of different colours for getting different shades in different media. Brief description of processes, primary colours, colour blending by mixing various ingredients in different colours for brush painting and spray painting. Putty preparation, mixing of putty, different process of making use of putty.

PAINTER

DESCRIPTION

THEORY & PRACTICAL OF SURFACE PREP. FOR PAINTING

CONTENTS

1. Painting and surface preparation of wood for varnishing and polishing.

2. Preparing surfaces of walls and ceilings, cleaning rough surfaces or distempering and mixing paints and colour making, distempering colour matching for above.

3. Finishing, varnishing and polishing wooden furnitures. Preparation of surfaces for primary coat of different metals such as office items by brush painting.

4. Corrosion - definition, causes and remedies.

5. Importance of repeat corrosion, knowledge of paint removers. Use of anti-corrosive paint.

6. Knowledge of phosphating of steel surfaces prior to painting.

7. Painting defects such as wrinkling, blistering, beeding and reasons thereof-causes and remedies.

8. Remove paints, prepare surfaces and paint machine tools and equipment, their painting defects etc

9. Application technique of paints in various types of surfaces including irregular surfaces by brushing, rolling, spraying, dipping etc.

10. Brief description, comparison of different painting system. Painting of wooden and steel furniture's, coaches, painting of metallic and synthetic pipes.

11. Paintings of electrical fittings, metallic pipes and sanitary fitting etc.

12. Sign writing-painting practice in free hand sketching of geometrical shapes, natural scenes, animal and human figures with black and white colours.

13. Knowledge of stencil- cutting and lettering in different languages.

14. Quality and finish of work - Importance of quality and finish of job at all stages - protection of finished surfaces. Economical use of material and timing.

15. The importance of application, control and use of proper systems and ancillaries for best results.

16. Painting letters and figures of different types, paintings or words, signs, signals, name board, advertisements etc.

PAINTER

DESCRIPTION

SAFETY IN USE OF PAINT

CONTENTS

Importance of trade and their familiarization, safety precautions including knowledge of fire-fighting equipments and their uses etc. Safety at work. Safety precautions against fire explosion and positioning hazards, danger in breathing of fumes. Gases and dust.

PAINTER

DESCRIPTION

STENCIL CUTTING, LETTER WRITING,
DECAL MANUFACTURING & APPLICATION

CONTENTS

STENCIL CUTTING, LETTER WRITING

SCREEN PRINTING

DECAL MANUFACTURE & APPLICATION

PAINTER

DESCRIPTION

PRACTICAL ON THE JOB TRAINING IN VARIOUS SECTIONS OF THE W/SHOP VIZ. CARRIAGE SHOP, WAGON SHOP ETC.

CONTENTS

PRACTICAL ON THE JOB TRAINING IN VARIOUS SECTIONS

OF THE W/SHOP VIZ. CARRIAGE SHOP, WAGON SHOP ETC

WELDER

DESCRIPTION

APPARATUS FOR WELDING, SELECTION FOR ELECTRODES TYPES OF WELDS JOINTS, SURFACE PREPARATION

CONTENTS

TYPES OF WELDING PROCESS, EQUIPMENTS REQUIRED FOR GAS AND ARC WELDING, CO_2 WELDING, SUBMERGED ARC WELDING, FLASH BUTT WELDING

SELECTION OF ELECTRODES FOR DIFFERENT WORKS

LAMINATION OF GAS WELDING, FLAME CUTTING

SURFACE PREPARATION,

VARIOUS TYPES OF WELDING JOINTS

AC, DC, VOLTAGE, CURRENT, CHANGE OF POLARITY, METHOD OF PROPER EARTHLING DURING WELDING ETC

KNOWLEDGE TO UNDERSTAND LABELS, WELDING RELATED SYMBOLS, DRAWINGS, WORK AND SAFETY INSTRUCTIONS, CALIBRATION MARKING, DATE OF MANUFACTURING & EXPIRY DATES ON ELECTRODE, MARKING ON WELDING POWER SOURCES.

ME /302

WELDER

DESCRIPTION

PROPERTIES OF WELDABLE MATERIALS

CONTENTS

WELDABLEILTY OF MATERIALS AND WELDING METALLURGY

SPECIAL WELDING TECHNIQUES:

- CAST IRON WELDING
- MIG WELDING
- TIG WELDING
- STAINLESS STEEL WELDING

WELDER

DESCRIPTION

WELDING DEFECTS, INSPECTION & TESTING OF WELDS

CONTENTS

TYPES OF WELDS DEFECTS,

REASONS OF DEFECTS, REMEDIAL MEASURES TO AVOID THESE DEFECTS

IMPORTANCE OF DOWNHAND WELDING, USE OF MANIPULATORS FOR WAGON BODY, BOGIE FRAME (CASNUB) AND OTHER COMPONENTS OF BOGIES (BOTH FOR COACHES AND FRIGHT STOCK)

NON-DESTRUCTIVE TESTING OF WELDED COMPONENTS

WELDER

DESCRIPTION

SAFETY PRECAUTIONS, SAFETY GADGETS

CONTENTS

SAFETY PRECAUTIONS TAKEN DURING WELDING,

SAFETY GADGETS,

PROPER EARTHING OF COMPONENTS FOR ARC WELDING,

FIRST AID IN CASE OF INJURY

ME /305

WELDER

DESCRIPTION

RECLAMATION/REPAIRS OF COMPONENTS BY WELDING VIZ. KNUCKLES, BRAKE BEAMS, WEARING SURFACE ETC.

CONTENTS

KNOWLEDGE OF VARIOUS COMPONENTS TO BE RECLAIMED,

RDSO/ANY OTHER AUTHORITY FOR RECLAMATION ON SAFETY COMPONENTS,

WELDING OF COACH AND WAGON COMPONENTS (KNUCKLES, BRAKE BEAMS, WEARING SURFACE OF BOGIE FRAMES ETC)

TO ENSURE DOWNHAND WELDING BY MAKING A PROPER FIXTURE/ MANIPULATOR FOR THE ITEM TO BE RECLAIMED

WELDER

DESCRIPTION

PRACTICAL ON THE JOB TRAINING IN VARIOUS SECTIONS OF THE W/SHOP VIZ. CARRIAGE SHOP, WAGON SHOP ETC.

CONTENTS

PRACTICAL ON THE JOB TRAINING IN VARIOUS SECTIONS OF THE W/SHOP VIZ. CARRIAGE SHOP, WAGON SHOP ETC.

PRACTICAL EXAMINATION FOR MAKING 2G/PC (HORIZONTAL BUTT WELD), 3G/PF (VERTICAL UP), 4G/PE (OVERHEAD BUTT WELD), 4F/PD (OVERHEAD FILLET WELD) OF WELDING JOINTS IN SHOP FLOOR AND TRAINING CENTRE CONDITIONS AS PER ISO 9606-1 & ISO15614-1.

WEIGHTAGE OF PRACTICAL EXAMINATION SHOULD BE 70% OF TOTAL, FURTHER SPILT AS 30% AT TRAINING CENTRE & 40 % AT SHOP FLOOR CONDITIONS.

MILL WRIGHT

DESCRIPTION

KNOWLEDGE OF DIFFERENT TYPES OF MACHINES, LATHES, COMPRESSORS, DRILLING, SHAPING, MILLING, CRANES, TRAVERSERS, VEHICLES, MATERIAL HANDING EQUIPMENTS. PREVENTIVE MAINTENANCE SCHEDULES OF MACHINES

CONTENTS

KNOWLEDGE OF DIFFERENT TYPES OF MACHINES,

LATHES,

COMPRESSORS,

DRILLING,

SHAPING,

MILLING,

CRANES,

TRAVERSERS,

VEHICLES,

MATERIAL HANDLING EQUIPMENTS.

PREVENTIVE MAINTENANCE SCHEDULES OF MACHINES

IMPORTANCE OF DIMENSIONAL ACCURACY OF KEY BETWEEN PINION & SHAFT.

REASON OF PINION FAILURE.

READING AND UNDERSTANDING DRAWINGS & SURFACE FINISH SYMBOLS.

MILL WRIGHT

DESCRIPTION

TYPES OF BEARINGS, INSPECTION, LUBRICATION VIBRATION AND NOISE CONTROL

CONTENTS

TYPES OF BEARINGS: PLAIN AND ROLLER,

SPHERICAL AND CARTRIDGE ROLLER BEARINGS,

AXIAL AND TRUST BEARINGS,

INSPECTION OF BEARINGS,

LUBRICATION OF BEARING: WET AND DRY

SELF LUBRICATED BEARINGS

DETERMINING RESIDUAL LIFE OF USED BEARINGS,

USE OF INSTRUMENTS TO JUDGE THE CONDITION OF RUNNING BEARINGS

VIBRATION AND NOISE CONTROL

PROPER WATERPROOF SEALING OF BEARING

MILL WRIGHT

DESCRIPTION

INSTALLATION AND COMMISSIONING OF DIFFERENT TYPES OF MACHINES

CONTENTS

UNDERSTANDING FOUNDATION DRAWINGS OF VARIOUS MACHINES,

VARIOUS TYPES OF VIBRATION ABSORBERS USED IN THE FOUNDATIONS,

INSTALLATION AND COMMISSIONING OF DIFFERENT TYPES OF MACHINES,

ISSUE OF PTC, WARRANTY REPAIRS

MILL WRIGHT

DESCRIPTION

KNOWLEDGE OF HYDRAULICS & PNEUMATIC CIRCUITS

CONTENTS

BASIC KNOWLEDGE AND TROUBLE SHOOTING OF HYDRAULICS & PNEUMATIC CIRCUITS USED IN VARIOUS MACHINES INCLUDING:

140 T BDT CRANES

WHEEL LATHES

KNOWLEDGE OF VISCOSITY OF OIL USED IN HYDRAULIC MACHINES,

DRAWBACK OF LOW VISCOUS FLUID,

KNOWLEDGE OF DIRECTIONAL CONTROL VALVES & SAFETY VALVES,

KNOWLEDGE OF SEALS & GASKETS USED IN HYDRAULIC & PNEUMATIC ACTUATORS

MILL WRIGHT

DESCRIPTION

KNOWLEDGE OF ELECTRICAL AND ELECTRONIC DEVICES

CONTENTS

BASIC KNOWLEDGE OF CURRENT, VOLTAGE, RESISTANCE AND THEIR MEASURING INSTRUMENTS (AMMETER, VOLTMETER, MULTIMETER)

SINGLE AND THREE PHASE SUPPLY

DIFFERENCE BETWEEN AN ALTERNATOR AND A MOTOR

BASIC ELECTRICAL CIRCUITS,

BASIC KNOWLEDGE OF ELECTRONICS AND ELECTRONICS CIRCUITS

DIODE, FUSE WIRE & STABILIZER

MILL WRIGHT

DESCRIPTION

MAINTENANCE OF CNC MACHINES

CONTENTS

DIFFERENT TYPES OF CNC MACHINES,

DIFFERENT PARTS/SUB-ASSEMBLIES AND THEIR FUNCTIONS,

UNDERSTANDING OF ANNUAL MAINTENANCE CONTRACT

FAMILIARITY WITH LOGICAL CIRCUITS OF CNC MACHINES

BASIC KNOWLEDGE OF CNC PROGRAMMING, PROGRAMMING CODES,

INPUT/OUTPUT DEVICES IN CNC MACHINES.

MILL WRIGHT

DESCRIPTION

PRACTICAL TRAINING OF MACHINE MAINTENANCE IN VARIOUS SECTIONS OF THE WORKSHOP

CONTENTS

PERIODIC MAINTENANCE OF VARIOUS MACHINES

HANDS-ON TRAINING OF MAINTENANCE OF VARIOUS MACHINES AVAILABLE IN DIFFERENT SECTIONS OF THE WORKSHOP

KNOWLEDGE OF MAINTENANCE OF CNC MACHINES

CARPENTRY

DESCRIPTION

INTRODUCTION TO TRADE: CLASSIFICATION OF TIMER, SELECTION OF WOOD, PRESERVATION

CONTENTS

1. Workshop discipline
2. Safety precautions
3. Types of plywood
4. Compreg
5. Decorative laminated sheet (D.L.Sheet)
6. Common defects in plywood, compreg
7. Adhesives for plywood, DL sheet

CARPENTRY

DESCRIPTION

INTRODUCTION TO CARPENTRY TOOLS

CONTENTS

a) Introduction

b) Names of Tools used for Making, Measuring, Inspecting & Cutting Tools.

c) Plaining Tools

d) Boring Tools

e) Drilling Tools

f) Striking, Fixing and Holding Tools

g) Miscellaneous Tools

h) Safety use of Tools

CARPENTRY

DESCRIPTION

CARPENTRY JOINTS

CONTENTS

a) Introduction to joints.

b) Name of the joints

c) Different types of joints and their descriptions and uses

d) Care and maintenance of joints.

CARPENTRY

DESCRIPTION

CARPENTRY PROCESSES

CONTENTS

a) Introduction

b) Name of working Processes

c) Various types of operations performed during the processes

1) Marking Measuring and layout
2) Sawing
3) Plaining
4) Chiseling
5) Boring
6) Grooving
7) Mortising and Training
8) Moulding
9) Rebating Plaining
10) Recessing

CARPENTRY

DESCRIPTION

READING AND UNDERSTANDING DRAWINGS

CONTENTS

Reading and understanding drawings,

Marking of drawings

Cutting Patterns.

CARPENTRY

DESCRIPTION

USE OF AUXILIARY MATERIALS: NFTC, FRP

CONTENTS

Introduction

Different types of auxiliary materials viz.

Natural Fiber Thermo set composite,

Fiber Reinforced Plastic etc

Properties and advantages of auxiliary materials

Use of composites in Coaches, FRP modules etc

MACHINIST

DESCRIPTION

USE OF TOOLS, PROCESS OF THE HEAT TREATMENT, PRECISION INSTRUMENTS, GAUGES & TEMPLATES, TYPES OF TOOLS: HAND & MEASURING

CONTENTS

USE OF TOOLS, PROCESS OF HEAT TREATMENT,

PRECISION INSTRUMENTS, GAUGES & TEMPLATES,

TYPES OF TOOLS: HAND & MEASURING,

MACHINABILITY OF FERROUS AND NON-FERROUS MATERIALS, PROPERTIES AND ADVANTAGES

KNOWLEDGE OF TOOL SIGNATURE,

TOOL LIFE, FACTORS AFFECTING TOOL LIFE AND PRECAUTIONS FOR LONGER TOOL LIFE

MACHINIST

DESCRIPTION

TYPES OF WHEELS USED IN ROLLING STOCKS, WHEEL DEFECTS, STANDARD & WORN OUT WHEEL PROFILES

CONTENTS

TYPES OF WHEELS USED IN ROLLING STOCKS,

COACHING AND FREIGHT WHEEL: NEW AND CONDEMNING SIZES

WHEEL DEFECTS, USE OF WHEEL PROFILING GAUGES/TEMPLATES,

STANDARD & WORN OUT WHEEL PROFILES,

USE OF PROPER TOOLS, FEED, DEPTH OF CUT ETC FOR VARIOUS TYPES OF TYRE TURNNINGS INCLUDING SKIDDED WHEELS,

KEEPING PROPER RECORD FOR ASSESSING WHEEL DISC LIFE

MACHINIST

DESCRIPTION

TYPES OF WHEEL LATHES, VARIOUS ATTACHMENTS, SETTING AND OPERATIONS, MINOR MAINTENANCE

CONTENTS

KNOWLEDGE OF VARIOUS ATTACHMENTS,

SETTING AND OPERATION,

OPTIMUM OPERATIONS TO ACHIEVE THE MAXIMUM CAPACITY OF WHEEL LATHE (24 WHEELS/ SHIFT)

SWARF REMOVAL FROM THE WHEEL LATHES,

LUBRICANTS USED ON WHEEL LATHES

ELEMENTARY MAINTENANCE AND TROUBLE SHOOTING

MACHINIST

DESCRIPTION

**DRILLING, SHARPING & SLOTTING MACHINES,
PLANERS LIMITS FITS & TOLERANCES,
GRINDER, JIGS & FIXTURES**

CONTENTS

USE OF DIFFERENT TYPES OF DRILLING, SHAPING, PLANERS, SLOTTING MACHINES, GRINDERS

VARIOUS ATTACHMENTS AND TOOLS USED ON THE ABOVE MACHINES

LIMITS FITS & TOLERANCES

JIGS & FIXTURES

READING AND UNDERSTANDING DRAWINGS & SURFACE FINISH SYMBOLS

MACHINIST

DESCRIPTION

WORKING OF CNC MACHINES
(PRACTICAL KNOWLEDGE OF PROGRAMME ETC)

CONTENTS

TYPES OF CNC MACHINES, DIFFERENT PARTS AND THEIR FUNCTIONING,

PRACTICAL KNOWLEDGE OF ELEMENTARY PROGRAMMING

SETTING UP AND OPERATION

WHEEL LATHE & WHEEL PRESS, THEIR VARIOUS COMPONENTS & MAINTENANCE, WORK & TOOL HOLDING DEVICES

All Artisan Staff

DESCRIPTION

MULTI-SKILLING: INTRODUCTION AND PRACTICAL TRAINING IN ALL TRADES REQUIRED IN THE WORKSHOP

CONTENTS

1. Electrical Engineering Concepts: Knowledge of AC/DC, current, voltage, ammeter, voltmeter, single and three phase power supply.
2. Welding: Arc and Gas Welding, hands on experience
3. Millwright: Knowledge & Routine Maintenance of common machines including cranes and material handing equipments
4. Painting: Types of paints, primers and painting process
5. Carpentry: Various tool, joints, common repairs/ items required in coaches
6. Machining: Hands on training on lathe, shaper, planner, grinder etc.
7. Turning: Simple job on lathes with various attachments
8. Forging: Hand on training for repairing parts
9. Trimming: Simple jobs of trimming, stitching, cutting etc.
10. Importance of mock drill and its practical demonstration
11. EOT CRANE: Basics and maintenance
12. Introduction to rescue devices of ART/ARMV/140T BD CRANE used at accident sites

All Artisan Staff

DESCRIPTION

THEORETICAL SESSION: INCENTIVE SCHEME, WORKSHOP ACCOUNTING, JOB CARD, SYSTEM OF MATERIAL PROCUREMENT, INTRODUCTION TO COMPUTERS

CONTENTS

- Details of incentive Scheme; CLW incentive scheme on Indian Railways
- Cost consciousness in workshops and depots: Unit cost of maintenance (ROH/POH)
- Awareness of System of procurement: Direct and Stores purposes, Stock and Non-Stock items
- Introduction to basis computers knowledge.
- Reading and understanding Drawings
- Basic Workplace Ethics and its importance

Annexure B

COVER PAGE

Modification: –

Replace	By
Group ‘C’ & ‘D’ staff	Technician & Helper

INDEX

Modification: –

Module No.	Location	Replace	By
MECH01	Name of the Stage	Induction to Unskilled	Induction to Helper
MECH02 to MECH 10	Name of the Stage	Induction to Skilled (RRB)	Induction to Technician (RRB)
MECH11	Name of the Stage	Promotion from Unskilled to Skilled	Promotion from Helper to Technician
MECH12 to MECH 20	Name of the Stage	Induction to Skilled (RRB)	Promotion from Helper to Technician

NOTE: (i) Since MECH01 to MECH21 have been named as Modules, ME/001 to ME/605, ME/MSK & ME/GEN are suggested to be named as Sub- Modules at all locations. Also, the duration of some of the existing modules don't matches with combined duration of sub-modules, so the duration of some sub-modules have been revised accordingly

(ii) There are misprints of 'MECH01' below description from Module MECH05 (page- 8) to MECH 17 (page-24) and misprints of MECH1/ MECH15 below description in Module MECH18 on page- 25. These need to be deleted.

iii) For all sub-modules from ME/001 to ME/GEN (from page-29 to page-125), 'DURATION' is printed without number of days or weeks. The word 'DURATION' needs to be deleted from these pages as duration of same sub-module is different for different modules (MECH 01 to MECH 21).

(Revision)

MECH01

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of the Stage	Modification	Induction to Unskilled	Induction to Helper	
ME/011 USE OF WALKY-TALKY	-	Deletion	-	-	(- 1) day
ME/015	-	Modification	Air & Vacuum Brake System	Air Brake System	
ME/016	-	Modification	Air & Vacuum Brake System	Air Brake System	
ME/090 BIO-TOILETS (New module proposed)	Below ME/020	Addition	-	-	(+ 1) day

MECH02

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of the Stage	Modification	Skilled	Technician	-
ME/001	-	Addition of 'Basic Knowledge of Computer'	-	-	-
ME/003	-	Revision	Safety and Cleanliness in Workplace	Safety in Workplace	-
ME/004	-	Revision	Duration of 6 days	4 days	(-2) days
ME/005 USE OF HAND AND PORTABLE TOOLS	-	Addition	-	-	(+ 1) day
ME/090 BIO-TOILET	-	Addition		-	(+ 1) day
ME/014 CLEANLINESS OF WORKING ENVIRONMENT	-	Addition	-	-	(+ 1) day
ME/047	-	Deletion	-	-	(- 1) day
ME/049	-	Deletion of 'UIC Bogie'	-	-	-
ME/058	-	Deletion of 'Vacuum Brake'	-	-	-
-	Below ME/060	Corrigendum	ME/GEN	ME/061	-

MECH03

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of the Stage	Modification	Skilled	Technician	-
ME/002	-	Revision	Safety, Fire Fighting, Cleanliness, First Aid	Safety, Fire Fighting	May be covered in 1-week duration of ME/002
ME/003 SAFETY IN WORK PLACE	-	Addition	Safety and Cleanliness in Workplace	Safety in Workplace	
ME/010 FIRST AID	-	Addition	-	-	
ME/014 CLEANLINESS OF WORKING ENVIRONMENT	-	Addition	-	-	
ME/047	-	Deletion	-	-	(- 1) week
ME/051	-	Revision	IRCA Part III	IRCA Part III & Part IV	-
			Wagon Maint. Manuals	Coach & Wagon Maint. Manuals	-
ME/053 ATTENTION TO CBC	-	Addition	-	-	(+1) Week
ME/070		Revision	UIC & CASNUB	CASNUB	-
ME/090 BIO-TOILET	Below ME/088	Addition	-	-	May be covered in 1-week duration of ME/089
ME/122 ELECTRIC ARC WELDING	-	Addition	-	-	(+1) Week
ME/123 GAS CUTTING	-	Addition	-	-	(+1) Week
ME/MSK	-	Modification	5 Weeks	3 Weeks	(-2) weeks

MECH04

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of the Stage	Modification	Skilled	Technician	-
ME/002	Description	Revision	Safety, Fire Fighting, Cleanliness, First Aid	Safety, Fire Fighting	May be covered in 1-week duration of ME/002
ME/003 SAFETY IN WORK PLACE	-	Addition	Safety and Cleanliness in Workplace	Safety in Workplace	
ME/010 FIRST AID	-	Addition	-	-	
ME/014 CLEANLINESS OF WORKING ENVIRONMENT	-	Addition	-	-	
ME/053 ATTENTION TO CBC	-	Addition	-	-	(+1) Week
ME/084	Description	Revision	Air Brake & Vacuum Brake	Air Brake	-
	Contents	Deletion of Vac. Brake contents	-	-	-
ME/090 BIO-TOILET	-	Addition	-	-	May be covered in 1-week duration of ME/089
ME/122 ELECTRIC ARC WELDING	-	Addition	-	-	(+1) Week
ME/123 GAS CUTTING	-	Addition	-	-	(+1) Week
ME/MSK	-	Modification	5 Weeks	3 Weeks	(-2) weeks
ME/GEN	-	-	2 weeks	1 week	(- 1) week

MECH05

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of the Stage	Modification	Skilled	Technician	-
ME/002	Description	Revision	Safety, Fire Fighting, Cleanliness, First Aid	Safety, Fire Fighting	May be covered in 1-week duration of ME/002
ME/003 SAFETY IN WORK PLACE	-	Addition	Safety and Cleanliness in Workplace	Safety in Workplace	
ME/010 FIRST AID	-	Addition	-	-	
ME/014 CLEANLINESS OF WORKING ENVIRONMENT	-	Addition	-	-	
ME/053 ATTENTION TO CBC	-	Addition	-	-	(+1) Week
ME/128	-	Deletion	-	-	(-1) Week
ME/130	-	Revision	UIC & CASNUB Bogie	CASNUB Bogie	-

MECH06

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of the Stage	Modification	Skilled	Technician	-
ME/002	Description	Revision	Safety, Fire Fighting, Cleanliness, First Aid	Safety, Fire Fighting	May be covered in 1-week duration of ME/002
ME/003 SAFETY IN WORK PLACE	-	Addition	Safety and Cleanliness in Workplace	Safety in Workplace	
ME/010 FIRST AID	-	Addition	-	-	
ME/014 CLEANLINESS OF WORKING ENVIRONMENT	-	Addition	-	-	
ME/301	-	Modification	1 week	2 weeks	(+1) Week
ME/302 PROPERTIES OF WELDABLE MATERIALS	-	Addition	-	-	(+ 1) week
ME/MSK	-	Modification	5 Weeks	4 Weeks	(-1) Weeks
ME/GEN	-	Modification	2 weeks	1 week	(-1) Week

MECH07

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of the Stage	Modification	Skilled	Technician	-
ME/002	Description	Revision	Safety, Fire Fighting, Cleanliness, First Aid	Safety, Fire Fighting	May be covered in 1-week duration of ME/002
ME/003 SAFETY IN WORK PLACE	-	Addition	Safety and Cleanliness in Workplace	Safety in Workplace	
ME/010 FIRST AID	-	Addition	-	-	
ME/014 CLEANLINESS OF WORKING ENVIRONMENT	-	Addition	-	-	

MECH08

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of the Stage	Modification	Skilled	Technician	-
ME/002	Description	Revision	Safety, Fire Fighting, Cleanliness, First Aid	Safety, Fire Fighting	May be covered in 1-week duration of ME/002
ME/003 SAFETY IN WORK PLACE	-	Addition	Safety and Cleanliness in Workplace	Safety in Workplace	
ME/010 FIRST AID	-	Addition	-	-	
ME/014 CLEANLINESS OF WORKING ENVIRONMENT	-	Addition	-	-	
ME/285 STENCIL CUTTING & DECAL MFG ETC.	-	Addition	-	-	(+ 1) Week
ME/286	-	Modification	8 weeks	7 weeks	(-1) Week

MECH09

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of the Stage	Modification	Skilled	Technician	-
ME/002	Description	Revision	Safety, Fire Fighting, Cleanliness, First Aid	Safety, Fire Fighting	May be covered in 1-week duration of ME/002
ME/003 SAFETY IN WORK PLACE	-	Addition	Safety and Cleanliness in Workplace	Safety in Workplace	
ME/010 FIRST AID	-	Addition	-	-	
ME/014 CLEANLINESS OF WORKING ENVIRONMENT	-	Addition	-	-	
ME/501	Description	Modification	Classification of timber, selection of wood, preservation of timber	Types of plywood, compreg, decorative laminated sheet, adhesives	-

MECH10

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of the Stage	Modification	Skilled	Technician	-
ME/002	Description	Revision	Safety, Fire Fighting, Cleanliness, First Aid	Safety, Fire Fighting	May be covered in 1-week duration of ME/002
ME/003 SAFETY IN WORK PLACE	-	Addition	Safety and Cleanliness in Workplace	Safety in Workplace	
ME/010 FIRST AID	-	Addition	-	-	
ME/014 CLEANLINESS OF WORKING ENVIRONMENT	-	Addition	-	-	

MECH11

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of the Stage	Modification	Un-Skilled to Skilled	Helper to Technician	-
ME/047	-	Deletion	-	-	(- 1) day
ME/049	-	Deletion of 'UIC Bogie'	-	-	-
ME/058	-	Deletion of 'Vacuum Brake'	-	-	-
ME/090 BIO-TOILET	-	Addition	-	-	(+1) day

MECH12

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of the Stage	Modification	Un-Skilled to Skilled	Helper to Technician	-
ME/053 ATTENTION TO CBC	-	Addition	-	-	(+3) days
ME/083	-	Modification	Duration 6 days	Duration 3 days	(-3) days
ME/084	-	Revision	Air Brake & Vacuum Brake	Air Brake	-
ME/089	-	Modification	Duration 6 days	Duration 3 days	(- 3) days
ME/090 BIO-TOILET		Addition	-	-	(+3) days
ME/122 ELECTRIC ARC WELDING	-	Addition	-	-	(+3) days
ME/123 GAS CUTTING	-	Addition	-	-	(+3) days
ME/MSK	-	Modification	Duration 30 days	Duration 24 days	(-6) days
ME/GEN	After "Introduction to Computers"	Addition of 'Reading & Understanding Drawings'	-	-	-

MECH 13

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of stage	Modification	Un-Skilled to Skilled	Helper to Technician	-
ME/053 ATTENTION TO CBC	-	Addition	-	-	(+6) days
ME/128	-	Deletion	-	-	(- 4) days
ME/132	-	Modification	Attention to CBC	Attention to draft gear of CBC	-
ME/MSK	-	Modification	30 days	28 days	(-2) days

MECH 14

Modification/Addition/ Deletion/Revision	Replace	By
	Un-Skilled to Skilled	**Helper to Technician**
Duration	**72 days**	**26 weeks**
REMARKS: Brief Justification for 26 weeks duration: Majority of staff promoted to technical Welder are from Non-Welding background and lack basic knowledge of welding. Hence these promoted artisans should also be trained at par with those who are directly recruited into welder trade through RRB. Therefore, the same Sub-Modules/Contents of MECH06 are recommended for module MECH14 with duration of 26 weeks.		

MECH 15

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of stage	Modification	Un-Skilled to Skilled	Helper to Technician	-

MECH 16

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
	Name of stage	Modification	Un-Skilled to Skilled	Helper to Technician	-

MECH 17

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
-	Name of stage	Modification	Un-Skilled to Skilled	Helper to Technician	-
-	Below ME/246	Correction	ME0C6	ME/GEN	-

MECH 18

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
-	Name of stage	Modification	Un-Skilled to Skilled	Helper to Technician	-

MECH 19

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
-	Name of stage	Modification	Un-Skilled to Skilled	Helper to Technician	-
ME/501	Description	Modification	Classification of timber, selection of wood, preservation of timber	Types of plywood, compreg, decorative laminated sheet, adhesives	-

MECH 20

Sub-Module No.	Location	Modification/Addition/ Deletion/Revision	Replace	By	Remarks
-	Name of stage	Modification	Un-Skilled to Skilled	-	-

MECH 21

Category: All Artisan Trades for C&W Depot, Workshops

Stage : Refresher

Sub-Module No.	Modification/Addition/ Deletion/Revision	Remarks
ME/R1	**Addition of following contents:** • Bio toilet (contents as per Sub–module ME/090) • Knowledge of Disaster Management to handle Accident cases • Knowledge of Environment & House Keeping Management (EnHM) • Knowledge of 5S, ISO 14001, 9001 & 50001 • Industrial Safety • Personal Protective Equipments (PPE) • Basic Workplace Ethics and its importance • Importance of Mock Drill and its practical demonstration	**Duration may be the same**

ONLY THOSE SUB-MODULES ARE

ENCLOSED WHICH HAVE BEEN REVISED.

THE OTHER SUB-MODULES SHALL BE AS EXISTING.

(Revision)

Sub-Module ME/001

Addition of following content as SL. No. 5

5. Basic knowledge of Computer

6. Basic Workplace Ethics and its importance

Sub-Module ME/003

Modified contents of Sub-Module ME/003

1. Awareness regarding safety while working.
2. Use of Personal Protective Equipments (PPE): -

   Eye and Face Protection – Helmet, Masks, Screens, Spectacles/ Goggles, harmful effects of fumes on eye-sight.

   Foot Protection - Safety footwear

   Body protection – Apron for welding & cutting, welding leg guard, welding blankets, awareness about type of clothing materials against fire.

   Hand Protection - Gloves for industrial jobs

   Head Protection - Safety helmets, Hearing Protection- Use of earplugs/earmuffs.

   Health Protection – Awareness regarding Occupational Health and Safety Assessment Series (OHSAS)
3. Importance of Mock Drill and its practical demonstration

Sub-Module ME/010

Addition of following contents

12.Knowledge of First Aid Manual, Tweezers, Alcohol Swabs, Antibiotic Ointment, Gauze Pads, Medical Tape.

13. Sterile adhesive, strip dressing, Antiseptic cream, Use of digital Thermometer and mandatory items for First-Aid-Box.

14. Antiseptic spray dressing, Oral dehydration powder, Disposable syringes, Use of wash proof band aid strips, Anti-inflammatory spray.

Sub-Module ME/014

Addition of following contents

3. Cleanliness and Hygiene for leading a Healthy Life, Cleanliness of surrounding & work place, Stacking of materials, Disposal of scraps, Wet mopping & Dust mopping.

4. Cleaning agents - liquids, powders, sprays & granules used to remove dirt, dust, stains, bad smells and to kill bacteria. Soap, detergent, Lysol, Collins, Odonil etc. Toilet hygiene and deodorant products.

5. Door cleaners, Window cleaners, Drain cleaners, Toilet bowl cleaners, Carpet cleaners, Metal cleaners & Scouring cleaners.

6. Acidic cleaning agents, Alkaline cleaning agents and Degreaser

Sub-Module ME/015

- Delete the word ‘vacuum’ from content SL. No. 3

Sub-Module ME/016

- Delete the word **'UIC'** from content SL.No. 2.
- Delete the word **'vacuum'** from content SL.No. 3.

Sub-Module ME/042

Addition to Contents

2. Designation & composition of different types of steels and their mechanical properties, types of cutting flames and their temperature range.

Sub-Module ME/043

Addition to Contents

2. Reading and understanding Drawings&. Surface finish symbols

Sub-Module ME/045

Addition of following content as SL. No. e)

e) Rolling Stock components prone to corrosion.

Sub-Module ME/047

- This Sub-Module needs to be deleted.

Sub-Module ME/049

- Delete **'UIC Bogie'** from description.
- Delete **'UIC Bogie &'** from content SL. No. 1

Sub-Module ME/052

Addition of following contents

4. Axle Box Feeling
5. Piston Releasing
6. RPC-IV
7. Brake Power Certificate
8. GDR (Guard Driver Report)
9. Continuity Test
10. Safety Items to be kept in Brake Van e.g. Spare Air Hose, Fire Extinguisher etc.

Sub-Module ME/058

- This Sub-Module needs to be deleted.

Sub-Module ME/070 [For Module MECH/03]

DESCRIPTION – CASNUB Bogie components checking and repairs

CONTENTS:

1. Types of CASNUB Bogie
2. Components
3. Suspension systems
4. CTRB
5. Criteria for condemnation of Wheel
6. Assembly of CASNUB Bogie

Sub-Module ME/084

Deletion

- **'Vacuum'** from description.
- Vacuum brake contents SL. No. 1 to 5.

Sub-Module ME/090

DESCRIPTION: BIO-TOILETS

1. Application of Bio-toilet in IR.
2. Ideas about Bio-toilet and its principle.
3. Bacteria used in Bio-toilet, charging of bacteria.
4. Precaution taken during charging of bacteria.
5. Bio-toilet tank and its capacity, cleaning Instruction of bio-toilet.
6. Testing of discharged water (PH, Total dissolved solid, TDS, & TVS etc) from the bio-tank and its limit, Chlorine tablet charging.
7. Instruction for user, safety in Bio-toilet.
8. How to tackle the problem of Choking in Bio-toilet.

Sub-Module ME/121

Deletion from Content SL. No.4

- Vacuum brake – What it is and how it functions

Additionto Contents

7. Latest design Wagons like BOXNHL, BLC etc.
8. Huck Bolting

Sub-Module ME/122

Addition to Contents

6.Stainless Steel Welding

7.Sub-merged Arc Welding (SAW) & requirement of Fixture

Sub-Module ME/128

This Sub-Module needs to be deleted.

Sub-Module ME/130

Deletion

- **'UIC'** from description.
- SL. No. 1 & 2 from Contents

Sub-Module ME/132

Modification:

Revise the Description from “Attention to CBC” to “Attention to Draft Gear of CBC”

Sub-Module ME/201

Addition to Contents

Mechanical properties of metals & alloys, Advantages of Forging over Casting, Reading and understanding Drawings

Sub-Module ME/202

Addition to Contents

11. Types of furnaces and control of temperature

12. Processes of Heat treatment & their effect on mechanical properties of materials

.

Sub-Module ME/301

Addition to Contents

- AC, DC, Voltage, Current, Change of polarity, method of proper earthling during welding etc
- Knowledge to understand labels, welding related symbols, drawings, work an00d safety instructions, calibration marking, date of manufacturing & expiry dates on electrode, marking on welding power sources.

Sub-Module ME/306

Addition to Contents

Practical examination for making 2G/PC (Horizontal butt weld), 3G/PF (Vertical Up), 4G/PE (overhead butt weld), 4F/PD (overhead fillet weld) of welding joints in shop floor and training centre conditions as per ISO 9606-1 & ISO15614-1.

Weightage of practical examination should be 70% of total, further spilt as 30% at Training centre& 40 % at Shop Floor conditions.

Sub-Module ME/401

Addition to Contents

Importance of dimensional accuracy of key between pinion & shaft.

Reason of pinion failure.

Reading and understanding Drawings&. Surface finish symbols.

Sub-Module ME/402

Addition to Contents

Proper waterproof sealing of bearing

Sub-Module ME/404

Addition to Contents

Knowledge of viscosity of oil used in hydraulic Machines,

Drawback of low viscous fluid,

Knowledge of Directional Control Valves & Safety Valves,

Knowledge of seals &gaskets used in Hydraulic & Pneumatic Actuators

Sub-Module ME/405

Addition to Contents

Diode, fuse wire & stabilizer

Sub-Module ME/406

Addition to Contents

Basic knowledge of CNC Programming, Programming codes,

Input/output devices in CNC machines.

Sub-Module ME/407

Addition to Contents

Knowledge of maintenance of CNC machines

Sub-Module ME/501

Contents

1. Workshop discipline
2. Safety precautions
3. Types of plywood
4. Compreg
5. Decorative laminated sheet (D.L.Sheet)
6. Common defects in plywood, compreg
7. Adhesives for plywood, DL sheet

Sub-Module ME/601

Addition to Contents

Knowledge of Tool signature,
Tool life, factors affecting tool life and precautions for longer tool life.

Sub-Module ME/604

Addition to Contents

Reading and understanding Drawings&. Surface finish symbols

Sub-Module ME/605

Addition to Contents

Wheel lathe & Wheel press, their various components & maintenance, Work & Tool holding devices

Sub-Module ME/GEN

Addition to Contents

Reading and understanding Drawings

Basic Workplace Ethics and its importance

Sub-Module ME/MSK

Addition to Contents

Purpose of Mock Drill and its practical demonstration

EOT CRANE: Basics and maintenance

Introduction to rescue devices of ART/ARMV/140T BD CRANE used at accident sites

Sub-Module ME/070

ME/070 IS THE SUB-MODULE OF MODULE MECH 03 AS SHOWN ON PAGE-5 BUT THE PAGE HAVING CONTENTS OF SUB-MODULE ME/070 IS NOT AVAILABLE IN THE BOOK. HENCE THE SUITABLE CONTENTS HAVE BEEN GENERATED AND ENCLOSED.

Sub-Module ME/090

BIO-TOILETS HAVE BEEN INTRODUCED IN THE COACHES. KEEPING IN VIEW THE NECESSITY OF PROVIDING KNOWLEDGE ON BIO-TOILETS, A SEPARATE SUB-MODULE **ME/090** HAS BEEN GENERATED. THIS SUB-MODULE HAS BEEN INCLUDED IN THE CONCERNING MODULES.