



APSRTC

TRANSPORT ACADEMY, HAKIMPET

TRAINING MODULE

FOR

MECHANICAL SUPERVISOR TRAINEES

2013 BATCH

15/A

SYLLABUS FOR MST-2013 BATCH

PROGRAM PLAN		Weeks
1	Induction and General Management (Theory)	2
2	Maintenance Management by Ashok Leyland, Tata, Eicher, CNG, Volvo & OEMs (Theory)	2
3	Maintenance Management (Depots – Theory)	2
4	Maintenance Management (Depots - Hands On Training)	14
5	Management of production units – Zonal work shop (Theory)	1.5
6	Management of production units - TRS (Theory)	0.5
7	Management of production units (Hands on Training)	7
8	Tyre Retreading Shop, Zonal Stores & BBU (Hands On Training)	3
9	Visit to OEMs & Factories (Ashok Leyland, TML, Volvo, JK Tyres, Brakes India)	3
10A	Computers (Theory)	0.5
10B	Computers (Hands On Training)	0.5
11	Telematics – Hands On Training with Test	1
12	Other Departments	2
13	Under Study as DY.SUP(MECH) at Depot	3
14	INDEPENDENT CHARGE as DY.SUP(MECH) at Depot	5
15	INDEPENDENT CHARGE as DY.SUP(MECH) at Work Shop	2
16	SHIVARATRI JATHRA OPERATIONS	1
17	Practical Test	1
18	Theory Tests & Final Evaluation	1
TOTAL		52

❖ Besides Yoga & Sports, on each day, morning & Evening for one hour, the jeep driving will be taught in batches

❖ Further HMV driving Training will be given for the eligible MSTs.

❖ Posting to Native Places for Practical Training will be avoided and as far as possible, Practical Training on each alternative period (Next to Theoretical Training) is proposed at HYD & adjoining depots, since the personnel of RTC at far off places are not taking interest on the Training in the practical Phases. There will be classes on 2nd Saturdays.

SYLLABUS FOR MECHANICAL SUPERVISOR TRAINEES – 2013 BATCH

Particulars of the Module

Module No.	Particulars of the Module	Days	Weeks
	Induction & General Management (Theory)	12	2
	Origin-History and Growth of APS RTC		
	Corporate Objectives and their importance, Structure of the Organization		
	Corporate Philosophy and Guiding Principles		
	Business Orientation, Quality Circles, Five S		
	Role of Supervisor - Effective supervision - Goal clarity		
	Communication, Leadership, Negotiations, Time Management, Team building		
	Change Management, Motivation, Stress Management, Conflict Management		
	Present financial status of corporation vis -a- vis cost parameters		
	APSRTC Regulations & Legislations		
	RTC Act & Rules, MV Act, APMV Rules, ID Act and Trade Union Act, Code of Discipline MTW Act, APMTW Rules, Taxation Act, Payment		
	Of Wages Act, Factories Act, Explosives Acts, Workmen's Compensation Act, Minimum Wages Act, Contract Labour Act, ESI Act, Employees Provident Fund & Miscellaneous Provisions Act, Gratuity Act, Shops & Establishments Act -Exemptions given to APS		
	RTC, APSRTC Regulations- RTI Act - citizen charter.		

2	Maintenance Management by Ashok Leyland, TATA, EICHER, CNG, VOLVO & OEMs(Theory)	12	2
	Introduction to Vehicle -Body-Chassis and major aggregates, Display of bare chassis(Latest)		
	Introduction to vehicle models, numbering system of aggregates, details of engine fuel system, air intake system, cooling system, lubrication system, Turbo charger, Inter cooler.		
	Difference between different engine models, their salient features, functions of clutch, gear box, parts nomenclature, dismantling and assembling of gear box, rear axle, front axle		
	Functions of various components in the air brake system, Suspension system		
	Electrical system - Battery maintenance		
	Fuel injection system, FIP and injectors - their maintenance		
	Power steering system, Brakes, Differential, Tyres- maintenance		
	Functioning of self-starter and alternator - their maintenance		
	Functioning of CNG engines		
	Functioning of A/C units,		
	Refurbishing of seats, Upholstery		
	Washing, Sweeping, MWP & AWP, Bus Body maintenance, Upkeep of Vehicles and Special Type Vehicles		
	TELEMATICS		
	Visits to other OEM Work Shops (a) Automotives- Ashok Leyland (b) Volvo garage-Volvo (c) TATA Work Shop, ELGI Company/CP		

3	Maintenance Management (Depots- Theory)	12	2
	Introduction to Depot Garage, MED Norms at Depots, Man power deployment,		
	Preventive Maintenance Schedules - Planning & control, Oil Changes and Filter Changes, Unit Changes		
	Study of bus links and shift timings, Job descriptions of supervisors & Artisans,		
	Key result areas - BD rate, HSD KMPL, KMPKg, LUB KMPL, Tyre life, fleet utilization, Cancellation of Kms due to Mechanical Reasons, Late Supply Of Buses.		
	Spring consumption, upkeep etc., Various registers & returns to be maintained		
	Float units - there allotment to depots, Preventive maintenance - Types & Schedules - Production Planning and control, Brake down analysis - System -wise.		
	Various types of lubricants,		
	Steps to improve aggregates life		
	Maintenance of springs - suspension system a) Conventional b) Air Suspension.		
	Depot Incentive schemes, Alternative fuels		
	Playing of CDs (BADRATHA, TYRE MAINTENANCE, INDHANAM, NAMAMI), More From The Same'		
	Tyre maintenance at depots - Tyre Preparation practice, Selection of Tyre, Matching of Tyre, Tyre Rotation, CBW, Mechanical Defects to both Radial & Nylon Tyres, Tubeless Tyres.		
	Body condition and upkeep of vehicles		
	Material Handling equipment and machinery at depot level - special tools		

	Receipt of fuels , Oils, decanting, storage, stocking, record, precautions,		
	Top overhaul of engine at depot level		
	Maintenance of electrical equipment Trouble shooting		
	Important circulars in Maintenance wing, Introduction to www.apstrtcinfo.com		
	Supply and accountal procedure of HSD Oil, Visit of Mother Stations [IOCL (CHERLAPALLI), CNG (BAGYA NAGAR Gas)]		
	Cost control items at depots, steps to minimize consumption of spares.		
	Fuel conservation in APS RTC - measures to improve KMPL, Protective Journey (PJ) Techniques, Pro-tech machine, Demo on Pro-tech machine		
	Steps to be taken to improve LUB KMPL, Cancellation of Kms, BD Rate, and Retrieval Of capsized/damaged/accident Vehicles-procedures, assessing of damage cost etc.	84	14
4	Maintenance Management (Depots- Hands On Training)		
A	i) Observations Of sweeping, AWP, MWP, Washing Plant maintenance, Hands on Training on Vehicle washing, Parking of Buses according to Schedules and Repairs ii) Special Type Vehicle washing iii) MWP	----- 2days. ----- 1 day ----- 3 days	6days 2days 4days
B	Checking of at least one month Log Sheets, Log sheet Remarks, Posting of RGs in Vehicle Back History Register, Attention of RGs-Study of Bus links	----- 2 days ----- 4 days (2D/2N)	2days 4days
C	Programming and carrying of Sch. I Maintenance, To be Worked as Sch. I Mechanic (Pro. Mechanic)	----- 6 days (3D/3N)	6days
D	Programming and carrying of Sch. II Maintenance, To be Worked as Sch. II Mechanic(Pro. Mechanic)	----- 1 day ----- 1 day	1 day 1 day
E	Receiving & dispatch of vehicles including issue of log-sheets and RG register, i) To be Worked as Dispatch Mechanic in the early morning (Pro. Mechanic) ii) To be Worked as Dispatch Mechanic in general shift (Pro. Mechanic)		2days

F	Recording of breakdowns, relief to breakdown vehicles, various registers, Low KMPL vehicles & drivers, Usage of VEMAS outputs		3days
G	Programming and carrying of Sch. III & IV Maintenance, To be Worked as Sch. III & Sch IV Mechanic (Pro. Mechanic)	----- 3 days	
H	1.Sch III Engine Mechanic (Pro. Mechanic) 2..Sch III Brakes Mechanic (Pro. Mechanic) 3.Sch IV Mechanic (Pro. Mechanic) To be worked as DC(oils) (Pro.DC) To be Worked as SDI (Pro. SDI) To be Worked as Tyre ADC (Pro.ADC) To be Worked as general ADC (Pro. Gen.ADC)	----- 6 days ----- 6 days ----- 6 days ----- 3 days ----- 3 days ----- 3 days	18days
I	Acquaintance with the work of artisans, 1.To be worked as Welder, Trimmer & as MWM (Pro. Artisan) 2.To be worked as Welder, Trimmer&MWM (Pro. Welder, Trimmer&MWM) 3.To be worked as Electrician (Pro.Elec) 4.To be worked as C/B (Pro. C/B) 5.To be worked as Tyre Mechanic (Pro. Tyre Mechanic) (Pro. Painter)	----- 2days ----- 3 days ----- 2 days ----- 3 days ----- 1 day	11days
J	Study of depot stores, indenting, inventory, local purchase and related statements, STOINS	----- 3 days	
K	Procedure for scrapping of Vehicle and sending to Scrap Yard	----- 1 day	3days
L	FC Work planning, HRG, To be worked as HRG Mechanic (Pro. Mechanic) To be worked as KMPL Mechanic (Pro. Mechanic)	----- 6 days ----- 5 days	1days
M	Practical Test as Engine Mechanic Practical Test as Brakes Mechanic Practical Test as Sch IV/HRG Mechanic Practical Test as KMPL Mechanic & Tyre Mechanic Practical Test as MWP & decanting of HSD oil procedures	----- 1 day ----- 1 day ----- 1 day ----- 1 day ----- 1 day	11days 5days

5	MANAGEMENT OF PRODUCTION UNITS(THEORY) MANAGEMENT OF ZONAL WORKSHOP	9	1.5
	Work Shop Management – Role of Work Shops in APSRTC - Production planning & control -Key Result Areas in Work Shop Management.	Day - 1	
	Production Incentive Bonus Schemes at ZWS, TRS, BBU & PP – Demand Forecast of float units, various trouble shootings for units, premature failures of units, Test rigs of various units.	Day - 2	
	Machine Shop - Its Importance - Repairs and Retrieval activities taken up in Machine Shop-Tool room maintenance- Study on quality circle teams of ZWS: UPL.	Day - 3	
	Quality Control – Checks on Assembly line of Engine – Stage Wise Inspections System – WP – Oil Pump – Pistons – Con. Rods – Cr. Shaft – Cm. Shaft – Cy. Head – AComp. Etc,	Day - 4	
	Repair Procedure of Brake System Units Like – DBV – HBV – ULV – SPV – Rely Valve – QRV – Air Suspension Regulating Valve – Mise. Pneumatic Equipment etc, A/C units	Day - 5	
	Working Procedure of Artisans in – Painting - Trimming – Electrical Works – Welding – MWM Works etc, Testing/Inspection of incoming materials & procedures, CIRT Testing	Day - 6	
	Procedure for Drawing Vehicles for – CO – SR – BCO etc..... and Various Stages in – CO – SR – BCO etc- Over View of ZWS Function and Management Such as R&D – Material allotment to Depots – Various Committees – Canteen.	Day - 7	
	Cost Control of Procedure at ZWS, Over View of Central & Zonal Stores Function and Management - Indenting – Receipts – Accountal & Disposal of Stores etc-Management of scrap yard.	Day - 8	
	Over View of BBBU Function and Management Such as – chassis Receiving and vehicle Dispatch- Various Tests in Bus body fabrication – Various Committees –printing press. Fabrication of Sub Assemblies, Outsourcing Works.	Day - 9	

6	TYRE RETREADING SHOP MANAGEMENT(THEORY) (DISPLAY OF CROSS SECTIONS OF TYRES OF CROSS PLY, RADIAL, TUBELESS & DEFECTIVE TYRES)	3	0.5
	Over View of TRS Function and Management Such as J Ward – Tyres allotment to Depots as Per norms – Various Records – Registers - Committees – Indenting – Receipts – Accountal & Disposal of Stores- Inspection of Tyres Observation of Various defects and Recommendations of Tyre Inspectors and Reasons for defects – Steps of avoid defects- Various Production Processes taken up in TRS- Uni Patches - NH attention – Major Patches – Minor & Major and other Repairs – Loose Tread	Day - 1	

	attention - Recapping - Re Treading - Tube Valves Repairs - Tube Valve Base etc- RC& RT Production line Stages - TI - Buffing - Trimming - Cleaning - Patches & Cavities attention - Apply of CVF/ BVF- Dry Time - Bonding Gum application - Selection of Tread Rubber - Assembly in Curing Disc with Curing Bag & Envelop - Loading in Ele Bonder and Maintaining Air Pressure & Temperature up to recommended Curing time and Unloading- Final Inspection of Tyres and Quality control at TRS - Identification of Process Failures in Production line - and steps to be taken to minimize Process Failures - CPK on tyres				
	Over View of Tyres Construction and Structure of Radial & Nylon Tyres & Tube less Tyres - Over View of Manufacturing JK Tyres	Precautions and Steps to be taken to Improve tyre Life M/s MODI TYERS	Day - 2		
	Importance of Tyre inflation various defects on tyres, failures of tyres, trouble shooting. VIKRANTH,	Selection of Tyres & Tyres Matching APOLLO	Day - 3		
7	MANAGEMENT OF PRODUCTION UNITS (Hands On Training)			42	7
7 A	Hands on training in Engine and FIE section				
	Works Carried out in Engine Section (Dismantle and Assembling etc...) (Pro.Mechanic)	-----3days	3 days		
	Works taken up for Production of Sub-Assemblies of engine - Final Inspection and Quality control at ZWS - Identification of Process Failures in Production line - and steps to be taken to minimize Process Failures (Pro.Mechanic)	----- 3 days	3 days		
	Works in FIE Section (Pro.Mechanic)	----- 3 days	3 days		
7 B	Hands on training in unit section				
	Works Carried out in Front Axle (Dismantle and Assembling etc...) -Works Carried out in Rear Axle- sub assemblies, differential(Dismantle and Assembling etc...)	(Pro.Mechanic) ----- 3 Days	3 days		
	Works Carried out in Gear box (Dismantle and Assembling etc...) & Works Carried out in Steering box, conventional & power (Dismantle and Assembling etc...)	(Pro.Mechanic) ----- 2 days	2 days		
7 C	Hands on training in Machine Shop section				
	Repairs and Retrieval activities taken up in Machine Shop - Concept on Machine Maintenance & Repair.	(Pro.Mechanic) ----- 2 days	4 days		
	Crank shaft grinding, Lathe works, Welding	(Pro.Mechanic) ----- 1 day			
	Knurling, Milling, Drilling, Boring & Honing	(Pro.Mechanic) -----1 day			
	Works carried out to pressure plate, PP Shafts(dismantle & assembling)	----- 2 days	6 days		
	Works Carried out to Brake units, wiper etc., (Dismantle and Assembling etc...)	(Pro.Mechanic)			

	Study of quality circles in ZWS: UPL				
	Hands on training on A/C unit	(Pro.Mechanic)	----- 1 day		
	Hands on training on CNG Engines	(Pro.Mechanic)	----- 2 days		
		(Pro.Mechanic)	----- 1 day		
7 D	Works Carried in Electrical Section				
	Works Carried out to Self Starter, Alternator etc., (Dismantle and Assembling etc...)	(Pro.Elec)	----- 1 day	1 day	
	Battery Section & Vehicle wiring	(Pro.Elec)	----- 2 Days	2 days	
7 E	Works Carried in Chassis Section				
	Stage wise Works in Chassis Section		----- 2 days	2 days	
7 F	Works Carried in Body Shop				
	Stage wise Works in Body CO - SR - CO Section		----- 2 days	2 days	
	Works Carried out in Painting - Trimming - Electrical- Body Material Management- Final Inspection etc		----- 3 days	3 days	
7 G	Works Carried in R&D Material Management and Quality Control at ZWS				
	Testing & Inspections of Materials ; R&D Section Works	(Pro.Mechanic)	----- 1 Day	2 days	
	Study of premature failure units	(Pro.Mechanic)	----- 1 day	2 days	
	Study of Zonal stores- OLIMS, Wards, receipts maintenance of inventories- 2 bin system-Disposal of least serviceable spares/tyres/bearings-Disposal of obsolete items		----- 2 Days	2 days	
	Visit & study of scrap yard, disposal of obsolete and serviceable materials, types etc- procedures, auctions procedures, calculation of upset value of vehicles and units		----- 2 days	2 days	

	<p>Practical Test on work shop Management</p> <ol style="list-style-type: none"> 1. Differential dismantling and assembling 2. Brake units overhauling 3. DDU overhauling 4. Air suspension unit overhauling 5. Power steering system overhauling 	2 days	18	3
8	<p>TYRE RETREADING SHOP, ZONAL STORES & BBBU (Hands On Training)</p> <p>Inspection of Tyres Recording of Various defects and Recommendations for Attention (Pro. Vulc.) ----- 2 days</p> <p>Working in Various Production Processes such as - Uni Patches - NH attention - Major Patches - Minor & Major and other Repairs - Loose Tread attention - Recapping - Re Treading - Tube Valves Repairs - Tube Valve Base etc. (Pro. Vulc.) ----- 4 days</p> <p>Working in Various Production Processes (RC& RT) Stages - TI - Buffing - Trimming - Cleaning - Patches & Cavities attention - Apply of CVF/ BVF- Dry Time - Bonding Gum application - Selection of Tread Rubber (Pro. Vulc.) ----- 4 days</p> <p>Assembly in Curing Disc with Curing Bag & Envelop - Loading in Ele Bonder and Maintaining Air Pressure & Temperature up to recommended Curing time and Unloading (Pro. Vulc.) ----- 2 days</p> <p>Working in Final Inspection of Tyres and Quality control at TRS - Identification of Process Failures in Production line - and steps taken to minimise Process Failures (Pro. Vulc.) ----- 2 days</p> <p>J- Ward Material Management & Disposal ----- 1 day</p> <p>Study of BBU, stage wise and subassemblies fabrication ----- 2 days</p> <p>Study of PP, printing, collating, binding, HTP holes, Incentive schemes ----- 1 day</p>		18	3
9	<p>Visit to OEMs & Factories (Ashok Leyland, TML, Volvo, JK Tyres, Brakes India.</p>		18	3

5/11/23

of P & L accounts - Predation of balance sheet- T&P - Custody, Accounts and Audit, Budgeting, Banking transactions, Bill transactions			
13	Understudy as Dy.Suptd(Mech) at Depot	18	3
14	Independent Charge as Dy.Suptd(Mech) at Depot	30	5
15	Independent Charge as Dy.Suptd(Mech) at ZWS	12	2
16	SHIVARATRI: JATHRA OPERATIONS	6	1
17	Practical Tests: Engine Tappet Setting, Gear box Top Cover Assembly, Clutch Setting, Hub Setting (Dry & Grease)	6	1
18	Adjustment of Air Suspension, Telematics-Trouble Shooting, KMPL Mechanic, Brakes.	6	1
	Theory Tests & Final Evaluation	6	1
	TOTAL	312	52

FIT FOR SCANNING

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ARMI PA