

ACKNOWLEDGEMENT

The work study team is thankful to the Sr.DME, DME, ADME, SSE/Loco (Mechanical), SSE/Electrical, all other shop Supervisors and staff of Diesel Loco Shed, Kazipet for their assistance and guidance, extended to the work study team during the conduct of this study.

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M E T H O D O L O G Y

The Work Study department has applied the following techniques for completion of the Work Study.

1. Collection of the details of workload particulars.
2. Interaction with Staff and Officers on the Division
3. Observation of the pattern of working.
4. Critical examination of the existing system of working and
5. Assessment of manpower requirement for existing workload.

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SYNOPSIS

- **SUBJECT:** REVIEW OF STAFF STRENGTH OF DIESEL LOCO SHED KZJ/SC DIVISION.
- **AUTHORITY:** As approved by SDGM/SC.
- **STUDY No:** WSSCR-39/2018-19.
- **REFERENCE File No:** G.276/2/WSSCR-39/2018-19.
- **AREA OF ACTIVITY:** DIESEL LOCO SHED/KZJ/SC DIVISION.
- With a view, to right size the organisation, the Central Planning cell of South Central Railway has taken up Work-study on the "Review of Staff Strength of Diesel Loco Shed/KZJ".
- Staff strength in DSL Sheds for Locos maintenance has to be reviewed on the basis of Indian Railways Average bench marking actual staff deployment taking into account Outsourcing of some of the activities.
- The team had critically analysed the activities performed especially at maintenance and additional workload at Shed to arrive at the actual requirement of manpower. The study also highlighted that a part of the non-core activity at the Shed is outsourced resulting in the effective management of manpower.
- Due to modernization, certain activities become redundant and some of the maintenance work contracted out. Due to this, the stress of workload comes down. To ensure the optimum utilization of manpower, to bring down the staff cost and for achieving the productivity of manpower, the work-study cell reviewed the staff strength as per IR average for requirement of manpower for Diesel Shed activities and other miscellaneous activities in order to bring nearer to Indian Railway Benchmarking.
- **Application of Benchmarking Norms:** Benchmarking is based on dynamic and comparative analysis and thus is a very useful tool to manage efficient deployment of staff and monitor effects of improvement in working practices, use of new technologies and level of outsourcing. Railway Board in successive meetings has directed all units to achieve average of Indian Railway Benchmark. Keeping optimum utilization in view, Efficiency directorate/Railway Board has collected detailed data of various activities of Indian Railways has done extensive exercise and arrived two Benchmarks i.e. IR Average Benchmark and IR Benchmark.
- In view of adoption of benchmarking on Railways, Railway Board advised to adopt first Indian Railway Average Benchmarking and further Indian Railway Benchmarking.
- **Summary of SAVE position of DLS/KZJ:**

Combined Grand Total (Mech + Elec & incl. other staff)	San: 886	Act: 717	Vac: 169
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➤ **Holding of locos:**

S.No	Rolling Stock	Number of locos
1.	WDM3A	42
2.	WDG3A	55
3.	WDG4	59
4.	WDG4D	36
Total		0

Alco locos (WDM3A+WDG3A) = 42+55 = 97

EMD locos (WDG4+WDG4D) = 59+36 = 95

➤ **Requirement of staff in terms of IR Average (excluding ART):**

Requirement of staff in terms of IR Average :	
IR Average of July-2018	4.14 men/loco
Total no. of locos	192
Staff required as per IR Average	192x4.14 = 794.88 Say 795
Staff to be added to the staff required as per IR Avg	
ART Staff sanctioned staff	37
DTTC Sanctioned Staff	8
Canteen Staff	8
Running Staff	10
Ministerial Staff (Per)	5
Staff Required for other activities	0
Total staff requirement	795+68=863
Total sanctioned strength	886
Staff excess to the requirement	886-863= 23

➤ **In view of the above, the following recommendation is made**
 ➤ **Recommendation:**

It is recommended to surrender 23 Posts from book of sanctions which are excess to the requirement.

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1.0 ÍßçðÃððãðððððð I N T R O D U C T I O N :

- 1.1 Indian Railways holds the status of being a premier transport service provider to the Nation. It is entrusted with the responsibility of carrying the bulk of freight and passenger traffic across the length and breadth of the country, serving national interests with a social centric objective in spite of the demanding task of remaining financially viable. The organization has been successful in lending impetus to the Nation's economic and industrial progress on the strength of the sustained approach towards technology up-gradation of infrastructure.
- 1.2 Continuous updating and designing of job description, reduction in number of categories for job enrichment through multi-skilling /qualification and responsibilities are the need of the day. Review of the work methods and sequences regularly, so as to create group for execution of job whenever new technologies are introduced.
- 1.3 Manpower is the biggest component of the expenditure of Indian Railway; rightsizing of manpower to reduce unit cost is an effective way to increase efficiency of Indian Railways. With this end in view, the Indian Railways has embarked on outsourcing various non-core activities and the staff hitherto engaged in such activities are being redeployed in areas concerned with operational & safety aspects. With the outsourcing of non-core activities, the staffs are placed in better places where their services are beneficially & effectively utilized, instead of keeping them in non-core activities, especially when such services are available in the open market at affordable rates.
- 1.4 Keeping the above said objectives in view, SDGM/SC has desired to review the working of various Sheds in the South Central Railway and accordingly the Planning Organization has conducted work-study on **REVIEW OF STAFF STRENGTH OF DSL LOCO SHED AT KZJ.**

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CHAPTER - II

2.1 **EXISTING SCENARIO:**

- 2.2 DLS loco shed KAZIPET, was inaugurated on 21.04.1973 by Sri. P N Koul, GM/SCR with 20 locos and homing capacity of 100 locos. At present DLS/KZJ is holding 192 locos.
- 2.3 Now, As per Railway Board Policy directives, Electric Locos are going inducted into Diesel Loco shed, for which electrification of some lines is going on. Very soon electric locos will be maintained for which staff of this shed is being trained at Electric Loco Shed, Kazipet from the last 4 months
- 2.4 Diesel Traction Training Centre Under the control of Sr. DME/DLS/KZJ and offering the following courses with Hostel facility and Hostel maintenance is completely outsourced.
 1. Refresher course for LPs/ALPs and Maintenance staff,
 2. Induction courses for Maintenance staff,
 3. Pre-Promotional course for Maintenance staff.
- 2.5 Apart from the Home Railway, the shed is catering to the needs of Exp/Mail services on SWR&CR also.

2.6 SAVE position of Diesel Loco Shed/KZJ as on 31.10.2018:

S. No	Category	Scale of pay	Mechanical			Electrical		
			San	Act	Vac	San	Act	Vac
1	SUPERVISORY							
	SSE	9300-34800+4600	37	29	8	17	9	8
	JE	9300-34800+4200	15	7	8	7	5	2
	SSE/Drawing	9300-34800+4600	1	1	0	0	0	0
	JE/Drawing	9300-34800+4200	1	0	1	0	0	0
	Total		0	0	0	0	0	0
2	ARTISAN-Skilled							
	Sr.Technician	9300-34800+4200	79	69	10	35	31	4
	Technician- I	5200-20200+2800	133	95	38	67	62	5
	Technician-II	5200-20200+2400	14	37	-23	10	14	-4
	Technician-III	5200-20200+1900	173	77	96	98	60	38
3	Total		0	0	0	0	0	0
	ARTISAN-Un Skilled							
	Khalasi Helper	5200-20200+1800	17	58	-41	14	27	-13
	Total		17	58	-41	14	27	-13
4	ANCILLARY- Skilled							
	Sr.Tech	9300-	12	12	0	0	0	0

		34800+4200						
	Technician-I	5200- 20200+2800	17	6	11	0	0	0
	Technician-II	5200- 20200+2400	0	8	-8	0	0	0
	Technician-III	5200- 20200+1900	7	0	7	0	0	0
	Total		0	0	0	0	0	0
5	LAB Staff							
	CMS	9300- 34800+4600	9	7	2	0	0	0
	CMA	9300- 34800+4200	3	2	1	0	0	0
	Lab Attendant	5200- 20200+1800	4	2	2	0	0	0
	Total		0	0	0	0	0	0
6	Running staff.							
	Inspectors	9300- 34800+4600	4	5	-1	0	0	0
	ALF	9300- 4800+4600	3	3	0	0	0	0
	Points man	5200- 20200+1800	3	2	1	0	0	0
	Total		0	0	0	0	0	0
7	Miscellaneous							
	SO(A)	9300- 34800+4600	1	1	0	0	0	0
	Peon	5200- 20200+1800	4	3	1	0	0	0
	B/Peon	5200- 20200+1800	1	1	0	0	0	0
	Safaiwala	5200- 20200+1800	0	1	-1	0	0	0
	Total		0	0	0	0	0	0
	Ministerial(per)	9300- 34800+4200	5	4	1	0	0	0
	Canteen Staff	5200- 20200+1900	8	5	3	0	0	0
	Total		0	0	0	0	0	0
7	Ministerial Staff							
	Ch.O.Supt.	9300- 34800+4600	3	2	1	0	0	0
	O.S	9300- 34800+4200	7	6	1	0	0	0
	Sr.Clerk	5200- 20200+2800	2	0	2	0	0	0
	Jr.Clerk	5200- 20200+1900	0	2	-2	0	0	0
	Sr.Steno	9300- 34800+4600	1	1	0	0	0	0
	Jr.Steno	5200- 20200+2400	1	0	1	0	0	0

	Head Typist	9300-34800+4200	1	0	1	0	0	0
	Sr. Typist	5200-20200+2800	1	0	1	0	0	0
	Sub total		0	0	0	0	0	0
	Supervisors Working in Trip Shed/SNF							
	SSE	9300-34800+4600	1	1	0	0	0	0
	JE	9300-34800+4200	2	0	2	1	0	1
	Total		0	0	0	0	0	1
	Artisan Staff Working at Trip Shed/SNF							
	Sr Technician	9300-34800+4200	0	0	0	1	2	-1
	Tech I	5200-20200+2800	3	2	1	2	2	0
	Tech II	5200-20200+2400	2	0	2	2	0	2
	Tech III	5200-20200+1900	2	2	0	2	2	0
	Khalasi	5200-20200+1800	0	1	-1	0	0	0
	Total		0	0	0	0	0	0
	RCD Staff							
	F.I. Mechanic	5200-20200+2800	4	4	0	0	0	0
	F.I. Khalasi	5200-20200+1800	4	4	0	0	0	0
	Total		8	8	0	0	0	0
	Diesel traction training Centre:							
	CTI	9300-34800-4600	2	2	0	1	1	0
	STI	9300-34800-4200	2	1	1	1	0	1
	Ch.Instructor	9300-34800-4600	1	1	0	0	0	0
	DDI	9300-34800-4600	1	1	0	0	0	0
	Total		0	0	0	0	0	0
	ART/140 T Crane Maintenance Staff							
	SE	9300-34800-4600	0	1	-1	0	0	0
	JE I	9300-34800-4200	3	3	0	0	0	0
	Sr.Technician	9300-34800+4200	1	1	0	0	0	0
	Tech I	5200-20200+2800	9	9	0	0	0	0
	Tech II	5200-20200+2400	8	9	-1	0	0	0
	DKH	5200-20200+1800	14	14	0	0	0	0

	Tech I(welder)	5200-20200+2800	1	0	1	0	0	0
	Tech II (welder)	5200-20200+2400	1	0	1	0	0	0
	Total		0	0	0	0	0	0
	Grand Total (Direct& Indirect)		628	502	126	258	215	43
Combined Grand Total (Mech + Elec & incl. other staff)			San: 886		Act: 717		Vac: 169	

2.7 Loco holding of DLS /KZJ:

S.No	Rolling Stock	Number of locos
1.	WDM3A	42
2.	WDG3A	55
3.	WDG4	59
4.	WDG4D	36
Total		0

2.8 Activities carried out at different sections:

Name of the section	Activity
Heavy repair mechanical	Mech. heavy schedules, out of course repairs.
Heavy repairs Electrical	Electrical heavy schedules, out course repairs, alternators and other electrical components, load testing etc,
Light / Heavy repair Mechanical	Mechanical Maintenance schedules, heavy schedules, trouble shooting on line, out of course repairs.
Light Repair Electrical	Electrical maintenance schedules, trouble shooting on line.
Component repair	Overhauling light components of Locos.
Air brake	Air brake maintenance schedules, heavy schedules, trouble shooting on line, out of course repairs.
Under truck	Maintenance schedules, heavy schedules, out of course repairs.
Light repair Mechanical	Mechanical maintenance schedules, trouble shooting on line.
Stores	Chasing of materials, issuing materials, lubricants & other store transactions.
Control Room staff	Maintenance of phone clerk duties in control room.
Ancillary	Carpentry, painting, black smithy, special/innovative works, cleaning etc.
Laboratory	Assisting of laboratory test.
Transport & Misc.	Drivers to vehicle , movement of coaches/ locos in &out from shed and medically de-categorized staff.
Mgt. Information System	Maintenance of loco management information system.
Other staff	Loco movement operational work/ shift, maintenance of boiler room, Tool room etc.

2.9 Special features of Diesel Loco Shed/ KZJ :

- As of now, DSL/KZJ having most of the locomotives provided with micro processor based propulsions system of M/S

Siemens, Medha & EMD makes, results on less maintenance and immense help on trouble tracing with the help of en-route fault data logging system. It made this shed one of the nodal points for major technological advancements in Diesel Traction over IRs.

- Effluent treatment plant and incinerator: shed has established the ETP for separation of water and oil-from the effluent about 75000 lts. per day.
- The incinerator is capable of bushing any type of waste except metallic parts. The shed is also utilizing the heat generated by the incinerator for testing of water, which is used for blowing and cleaning of locomotives by providing

Heat recovery system.

- As environmental concerns a green belt was developed around the shed premises by planting different varieties of plant.
- Internal cleaning of main reservoirs and hydraulic testing.
- Test stand for speed sensors and flasher lights.
- Number of test gadgets like Air reservoirs testing gadgets, computer brake testing gadget, overhauling compressor testing gadget, sump cover testing & explosion door testing gadget, FIP calibrating test stand, OH of injector testing stand , HP tube counter testing stand, Cylinder head hydraulic test stand etc.
- Air brake valve testing gadgets are available in Air brake section.
- Jumper cable testing stand. Fuel pump CCEM master testing stand are available.
- DLS/KZJ has certified with IMS, 5-S certification & ISO 50001(Energy Management System) and this shed is planning to get GreenCO Platinum rating and it is under process.
- Augmentation of homing capacity from 100 to 150 is under process. Further augmentation proposal of Homing from 150 to 250 locos has been sent to Railways Board.

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3.0 CRITICAL ANALYSIS

- 3.1** Staff strength in DSL Sheds (Locos maintenance) has been reviewed on the basis of benchmarking and actual staff deployment, taking into account of Outsourcing of some of the activities.
- 3.2** **Application of Benchmarking Norms:** Benchmarking is based on dynamic and comparative analysis and thus is a very useful tool to manage efficient deployment of staff and monitor effects of improvement in working practices, use of new technologies and level of outsourcing. Railway Board in successive meetings has directed all units to achieve average of Indian Railway Benchmark. Keeping optimum utilization in view, Efficiency directorate/Railway Board has collected detailed data of various activities of Indian Railways has done extensive exercise and arrived two Benchmarks i.e. IR Average Benchmark and IR Benchmark.
- 3.3** In view of adoption of benchmarking on Railways, Railway Board advised to adopt first Indian Railway Average Benchmarking and further Indian Railway Benchmarking.
- 3.4** Due to modernization, certain activities become redundant and some of the maintenance work contracted out. Due to this, the stress of workload comes down. To ensure the optimum utilization of manpower, to bring down the staff cost and for achieving the productivity of manpower, the work-study cell reviewed the staff strength as per IR average for requirement of manpower for Diesel Shed activities and other miscellaneous activities in order to bring nearer to Indian Railway Benchmarking.
- 3.5** Periodicity of schedule attention of locos in the KZJ shed.

3.5.1 ALCO Locos:

S.NO	Type of Schedule	Periodicity
1	Trip-I Schedule	15 days
2	T-30/40 Schedule	30 days/ 40days
3	M-2 Schedule	60 days
4	M-4/M-8/M-16/M-20 Schedule	4months/8months/16months/20months
5	M-12 Schedule	12months
6	M-24/M-72 Schedule	24 months/72 months
7	M-48 Schedule	48 months
8	POH Attention	96 months

3.5.2 HHP Locos(WDP4/WDG4) :

S.NO	Type of Schedule	Periodicity
1	30 days Schedule	30 days
2	60days Schedule	60days
3	90 days Schedule	90 days
4	120 days Schedule	120 days
5	150days Schedule	150 days
6	180days Schedule	180 days
7	210 days Schedule	210 days

8	240days Schedule	240 days
9	270days Schedule	270 days
10	300days Schedule	300 days
11	330 days Schedule	330 days
12	Yearly I (Y-I)	1 Year
13	Yearly 2 (Y-I)	2 Years
14	Yearly 3 (Y-I)	3 Years
15	Yearly 4 (Y-I)	4 Years
16	Yearly 5 (Y-I)	5 Years
17	Yearly 6 (Y-6) Major Schedule	6 Years
18	18- Yearly I (POH)	18 Years (POH is not carried out at this shed)

3.6 The following activities are outsourced at Diesel Loco Shed /KZJ.

S. No	Contract	Agreement Value	Agreement/ LOA Date	Completion/ Expiry Date	period
1	Supply of sand and filling in locos	30,28,667	15.12.2016	14.12.2018	24 months
2	Outsourcing of staff canteen	14,13,630	14.03.2017	13.03.2019	24 months
3	Disposal of hazardous waste	10,39,395	06.05.2017	05.05.2019	24 months
4	Transportation of Railway materials	46,45,100	24.02.2018	223.02.2020	24 months
5	Outsourcing of welding works	13,41,671	23.03.2018	22.03.2020	24 months
6	Cleaning of locomotive and locomotive equipment	1,24,84,501	01.05.2018	29.04.2020	24 months
7	Outsourcing the component cleaning	27,03,857	18.05.2018	17.05.2020	24 months
8	Hiring of MUV Non-AC for 24 months	9,07,200	18.07.2018	17.07.2020	24 months
9	Housekeeping and maintenance of DTTC & Hostel	92,36,903			730 days
10	Housekeeping and maintenance of Shed	1,37,50,878			730 days

3.7 The following activities are under AMC:

Sl. No	Description of work	Value in Rupees	DOC	Due date of completion	period
1	Over hauling of Air Dryers of Knorr-Brebse make for 25 nos	27,57,067	25.09.2015	24.09.2017	24 months

2	Over hauling of Air Dryers of FTIL make for 33 nos(ALCO)	25,959,073	25.08.2015	24.08.2016	12 months
3	Over hauling of Air Dryers of FTIL make for HHP 13 nos	10,25,276	23.05.2016	22.05.218	24 months
4	AMC of MBCS of M/s Medha make 97 locos	1,25,08,000	-	-	-
5	AMC of IGMTof Medha 23 locos	4,73,32,156	-	-	-
6	AMC of EMD 3 locos	10,33,333	-	-	-
7	AMC of IGBT of Medha 8 locos	9,15,765	01.07.2018	30.04.2019	10 months
8	AMC of IGBT for SIEMENS 4 locos	21,04,334	10.07.2018	31.05.2019	10 months
9	AMC of IGBT for SIEMENS 8 locos	71,86,640	10.07.2018	31.12.2019	18 months
10	AMC of control unit + over hauling of actuator unit(M 48) + over hauling of actuator unit (M 96) of MCMG	55,50,42,500	02.09.2017	30.06.2019	24 months
11	AMC of ABRO dynamic balancing machines	1,81,72,000	21.12.2017	20.12.2019	24 months
12	AMC of Cummins Engines 2 nos (SPART)	15,42,80,300	02.09.2017	01.09.2019	24 months
13	AMC of Cummins Diesel Engines of 140 crane	3,35,09,000	03.10.2017	02.10.2019	24 months
14	Integrated management System	5,45,59,300	09.12.2016	08.12.2019	36 months
15	EnMS ISO 50001 certification	1,85,000	05.07.2017	04.07.2020	36 months
16	ART contracts	417612	-	-	-
17	ART contracts	1,24,25,400	-	-	-

3.8 The following works are under process/pending:

Sl.No	Description of work	Value in Rupees	Remarks
Outsourcing			
1	Supply of sand and filling in locos	68,74,601	2 years
2	Installation and commissioning of 16 CC cameras	9,15,751	NA
3	Audio/Video visualized module containing 32 points to prevent SPAD	9,00,000	NA
4	Over hauling of PTLOCs- Alfalaval make 18 nos	15,14,412	1 year
5	Over hauling of PTLOCs- Trantor make 16 nos	11,68,000	1 year
6	Comprehensive over hauling of CCB 1.5 version valves fitted on HHP locos	1,71,61,920	1 year
7	Up gradation of sim from CDMA to GSM	22,60,163	NA

	Remmlot		
AMC			
8	AMC of IGBT for SIEMENS 12 locos	57,50,860	121 loco months
9	AMC of IGBT of EMD 6 locos	19,96,167	42 loco months
10	AMC for heating ventilation and Air conditioning (HVAC)	28,82,268	552 loco months
11	AMC of IGBT of EMD 10 locos	2,03,50,540	356 loco months
12	AMC for Auxiliary Power unit	1,52,34,593	842 Loco months
13	AMC of Remmlot system in 97 Alco locos	1,02,335,173	3017 loco months

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3.11 Recommendation:

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4.0

நிதிப் பரிசீலனை நிதிப் பரிசீலனை FINANCIAL IMPLICATIONS:

Sl. No	Category	Scale		No. of posts	Mean Pay	DA 9%	Emoluments P.M (in Rs.)	Total Emoluments P.A (in Rs.)
		From	To					
1	Group 'D'	18000	56900	23	37450	3371	938883	11266596
TOTAL				23	Rs. 1,12,66,596			

- On implementing the recommendations, the financial savings would be to the **Rupees 1.12 Cr. per annum.**

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5.0

S No.	Recommendation	Para No.
1	It is recommended to surrender 23 Posts from book of sanctions which are excess to the requirement	3.11

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