



Andhra Pradesh State Road Transport Corporation

MECHANICAL ENGINEERING DEPARTMENT
Office of the VC & MD, RTC House, VIJAYAWADA

OP4/462/ENG /2021-MED

CIRCULAR No. 08/2021-MED, Dt: 01.09.2021

GOOD INTIATIVE BY ZWS/NLR

Sub: ENGINES- Carrying out engine changes on buses, at Zonal workshops instead of at Depots - instructions Issued - Reg
Ref: Cir no. 16/2011-MED dated 13.05.2011

I. Introduction:

While reviewing the performance of Zonal Workshops, it is observed that many of the engines received are over run beyond the expected mileages without changing them in time and with heavy blowing. The retrievability of main components like Engine block, Crank shaft and Cam shaft are going down. The Crank shafts are subjected to excessive uneven wear due to which they are being machined from Standard size to 20 under size directly during retrieval resulting reduced crank shaft life. Over running the engines with heavy blowing, with over heating complaints and poor cooling and lubricating system is causing bore cracks in engine block and even some of the engines are received with broken engine blocks and crank shafts. All these lapses are contributing to increase in the cost of reconditioning. Vide circular cited, clear instructions were given on engine maintenance, but the instructions are not being implemented in Toto.

Instances have come to notice where in the depots are cannibalising the accessories of the CO engines and by the time complete engine is fitted to the vehicle, some of the accessories are replaced with serviceable ones due to which the optimum performance from the CO engine is not derived. Even the removed engines are also not being sent to ZWS immediately resulting in shortage of engine blocks for production and thus effecting the production performance.

II. Objective:

Main objective in planning engine changes on buses at ZWS is :

1. To ensure engine changes on time to avoid damages to the internal components and improve retrievability, life of the components and the overall engine life, thereby reduce CO cost.
2. To obtain optimum performance viz., good pick up, HSD and LUB KMPL etc, from the reconditioned engines by fitment to the vehicle along with CO/New associated accessories and also ensuring for fitment of sub assemblies like CO/New Radiators, Clutch Pressure Plate assembly, Clutch Disc and new rubber hoses in cooling system etc.

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3. To avoid idling of engines at depots in the form of float which also results in substantial saving in investment.
4. To improve availability and regular flow of engine blocks for production at ZWS there by the Performance Efficiency Levels are improved.

III. The Plan:

To accomplish the above objective , initially permission is given to ZWS NLR to implement the project of changing the engines at ZWS by drafting the identified vehicles from Depots, on trial basis for a period of 6 months. The project is implemented on trial basis at ZWS NLR w.e.f. February, 2021 and so far ZWS NLR has taken up 32 engine changes on the vehicles drafted from various depots of Prakasam and Nellore Regions and the results are found to be quite encouraging.

VC&MD during his visit to ZWS, NLR in the month of June, 2021 appreciated the efforts of Nellore Zone in taking up the task of engine changes at Zonal Workshop resulting in certain advantages and advised to examine if the same can be scaled up to all Zonal Workshops.

Accordingly a committee consisting of WM & DyCAO(Z), VZM, DyCME, ATP and COS, NLR is constituted to take up a study at ZWS NLR regarding the advantages and disadvantages of the implemented system of changing the engines on the buses by drafting them to ZWS instead of issuing engines to depots and also to study the feasibility of implementing the system at all other ZWSs and submit report.

The committee has studied the system implemented at ZWS NKR and reported that the serviceability of Engine Blocks and Crank Shafts has increased, the lead time to receive the removed engines at ZWS is decreased resulting in requirement of lesser float and smooth inflow of Engines for production at ZWS and due to fitment of all CO/New sub-assemblies related to the Engine the life is expected to improve further. The committee recommended for implementation of the system at all other ZWSs also.

In view of the recommendations of the committee on the system of attending the engine changes for the buses at ZWS instead of at Depots, as already implemented at ZWS NLR, it is now decided to scale up the activity to the entire corporation

WMs shall obtain the list of vehicles due for engine change, for every quarter, in advance from all the regions of the Zone and plan and communicate the monthly program for drafting the vehicles from depots in coordination with the concerned DyCME/DVMs of the region.

DyCMEs/DVMs shall identify the vehicles due for engine changes based on the engine mileage covered, performance of the engine, consumption of lub oil etc., and submit the list of such vehicles due for engine change during the next quarter, to concerned WM. In turn WM ZWS shall plan for drafting the vehicles to ZWS for engine changes and communicate the month wise programme for the next quarter to all the concerned DyCMEs/DVMs.

The man power for attending these buses shall be drafted from depots of the Zone, preferably from the depots located in the Zonal Head Quarter. DyCMEs /DVMs shall involve personally and identify the Mechanics with good skill levels for deputing to ZWS as per requirement of WM. Further it shall be informed to the staff deputed to ZWS that they shall not have any right to claim a transfer to ZWS in future.

Each team for engine replacement shall consist of Two Mechanics and Two Sramiks and WMs shall plan for the required number of teams based on the Demand for engine changes, Production capacity of ZWS and Cycle Time.

The cycle time for engine replacement by a team is 2 days and vehicle must be despatched from ZWS invariably in the evening of 2nd day of starting the attention on the vehicle.

The entire activity of Engine changes shall be monitored by the AWM/WM

IV .Instructions for Execution of the Plan:

- Respective WM/AWM shall oversee the progress of the activities on day to day basis
- WM shall coordinate with the DyCME/DVMs to plan the month wise buses to be drafted well in advance to avoid idling of man power.
- DyCME/DVMs shall ensure to send the vehicles to ZWS as per the program drafted by WM ZWS without any deviation.
- Only Mechanics having good skill levels shall be identified while deputing to ZWS to form teams for engine changes.
- All the units/spares fitted on the vehicle along with CO engine are thoroughly tested/inspected before fitment.
- After completion of attention of the vehicle for engine change the vehicle shall be kept in running condition for at least one hour (Cooling) for observation before despatch.
- CO engines shall not be issued to depots as a matter of routine, except in cases of engine failure/ enroute breakdowns.
- DyCMEs/DVMs during the review meetings and their depot visits shall review the progress of timely Top Overhauls and also the effectiveness in cooling system maintenance.

- Infrastructure and necessary Tools required shall be planned by the WM. Required tools may be planned separately for these Teams without disturbing the regular works. If required, may be pooled from the depots from which man power is drafted.
- Working area/bays to be marked separately to avoid inconvenience to the regular work
- While sending vehicles from depots to ZWS and vice-versa, Depot managers shall ensure that the vehicle perform service as OMS with TIMS, in true spirit in order to avoid non-revenue kms.

V. List of Works for attention:

The following items need to be changed :

1. CO Engine with its accessories
2. Engine Oil - New
3. Coolant Mixture - New
4. Self starter & Alternator, if required based on condition and mileage covered
5. Clutch plate - new
6. Clutch springer - CO/New
7. Fly Wheel - CO/New
8. Radiator core – New
9. Engine mounting pads front and rear
10. All rubber hoses in cooling system, Vent hoses - New
11. Fan belt
12. Deaeration tank if required
13. Air filters Primary and secondary new, based on mileages and requirement.
14. Replacement of defective Engine Oil Pressure Gauge and Temperature Gauge.
15. Cleaning Exhaust system including Silencer muffler.

VI. Monitoring the staff of depots:

- WMs shall certify musters of the staff and forward the same to the units from which the manpower is pooled.
- Dy.CMEs concerned shall monitor frequently the performance of the mechanical teams deputed to ZWSs.

The Dy.CMEs / DVMs of Regions shall take full responsibility to identify the vehicles requiring engine change in every quarter and communicate to WM in advance so as to prepare monthly plan.

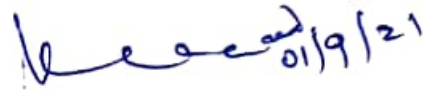
WMs shall gear up the Engine production to meet the maximum demand by redeployment of man power internally, if required.

COSs shall arrange to supply adequate material required for engine changes in coordination with WMs.

The Executive Directors (Zones) are requested to monitor the plan with WMs and DyCMEs/DVMs, regarding drafting of vehicles and especially in identifying and drafting the man power and ensure successful launching of the project.

All Regional Managers are requested to take action to implement the above instructions and submit compliance along with action plan.

Executive Directors (Zones) shall review the progress of engine changes during the PRC meetings and their visits to ZWS.



Executive Director(E)

Copy to ED(A), ED(O) , FA&CAO for information.

Copy to EDs(Zone) for information.

Copy to All RMs for necessary action

Copy to All DyCMEs/DVMs, WMs, DyCME(Works), DyCME(IE) for necessary action

Copy to All COSs and DyCAOs(zone) for necessary action

Copy to OSD to VC&MD for information

Copy to All DMs and Garage In-charges for necessary action