

ANDHRA PRADESH STATE ROAD TRANSPORT CORPORATION

No.TLI/745(2)/2001-MED.

**O/otheVC&MD
Msrd, Hyd-20.**

CIRCUALRNo. 4/2001-MED, DT. 20.2.2001

SUB :— VEHICLES -.Improvement of economic life of buses - Enhancement of vehicle life - Reg.

**Ref:— 1) Circular No.4/98-MED, dt. 5.2.98.
2) Circular No. 25/99-MED, dt. 20.7.99.
3) Circular No. 13/2000-MED, dt. 27.4.2000.**

At present, vehicles are being scrapped at about 10.5 lakh Kms. in case of Dist. Ordinary buses and at 11.0 lakh Kms. in case of City buses basing on the physical condition. On account of the following, the life of buses has improved beyond the stipulated mileages.

- 1. Improvements made in bus body design and strict adherence to specifications during inspection while fabrication of buses.**
- 2. Awareness among the maintenance staff by organizing training and supply of manuals printed in Telugu consequently improvement in maintenance standards.**
- 3. Improvement in road conditions**
- 4. Improvements made in vehicle Technology by vehicle manufacturers.**
- 5. Carrying of body repairs as per circular No.25/99-MED as and when warranted at depot level through outside labour on works contract.**

In view of the above, a committee headed by C.M.E (C & B) and five Senior Mechanical Officers was constituted to examine and suggest the replacement policy of vehicles including special type of buses after inspecting the physical condition of sizeable no. of buses and also taking the views of field officers on the replacement policy to be adopted vis-à-vis the existing policy. The committee submitted report recommending for enhancement of economic life of bus bodies from 10.5 lakh Kms. to 11.0 lakh Kms. and for replacement of special type of buses at 5.5 lakh Kms.

Based on the above recommendations and in view of increase in cost of Chassis & Bus Body, it is now decided to enhance the Economic life of Bus Body from 10.50 lakh kms to 11.00 lakh kms for Ordinary Buses and from 11.00 lakh Kms. to 11.50 lakh Kms. for City type of buses. The scrapping will be done on physical condition of the Buses and other conditions stipulated for scrapping will remain unaltered as furnished in the Circular No. 12/97-MED, dt. 23.5.97 which contains revised priority codes.

In order to achieve the higher economic life, the committee recommended that certain mid-term repairs are to be initiated at Depot level/Workshop level. Accordingly the following instructions are issued.

1.0 HI-TECH:

To offer quality service which in turn enhances the image of the Corporation the following repairs are to be carried at depot level through outside agency between 3 to 4 lakh Kms.

1.1 WORKS TO BE CARRIED FOR ALL BUSES:

- (a) Refurbishing of seat upholstery.**

- (b) Replacement of faded Raymond fabric at the centre of ceiling.
- (c) Replacement of window flock channel
- (d) Replacement of floor vinyl
- (e) Exterior painting of bus with ICI permoble paints.

1.2 SELECTIVE REPAIRS ON NEED BASED:

- (a) Replacement of damaged stretch panels, modular panels and front end panels.
- (b) Repairs/ Replacement of rear luggage booth door gas springs, locks etc.,
- (c) Replacement of defective gas springs, broken or missing handles and reclining knobs of seat assemblies
- (d) Replacement of broken shutter glasses
- (e) Replacement of window locks/ knobs
- (f) Replacement of broken tower bolts, locks of JK doors, driver door and side flap doors etc.
- (g) Repairs/ Replacement of damaged front and rear bumpers.
- (h) Pasting of loose carpet on interiors/ hatrack and dusting, cleaning etc.,

It is decided to replace the Hi-tech buses after operation of 5.5 lakh Kms. plus as - these buses may not attract clientele and Corporation may loose patronage if operated beyond 5.50 lakh Kms. These replaced buses may be converted as District/City Ordinary buses as per the instructions contained in circular cited at reference 3.

2.0 LUXURY BUS:

In respect of Luxury buses the following mid-term repairs are to be carried out between 3 to 4 lakh Kms. keeping in view the importance of the service.

2.1 WORKS TO BE CARRIED FOR ALL BUSES : -

- a. Refurbishing of Seat upholstery.
- b. Complete Painting of bus body, under frame and luggage carrier.
- c. Attending to saloon under frame structural defects including replacement of damaged/broken floor longitudes.

2.2 SELECTIVE REPAIRS:-

The following works are identified which are to be attended on need basis as per circular cited at reference! 1).

- a. Replacement of damaged exterior panels.
- b. Repair/replacement of damaged front & rear bumpers.
- c. Attending to the repairs of driver & passenger door.
- d. Repair/ replacement of damaged window frames.

2.3 ATTENTION REQUIRED AT ZONAL WORKSHOPS :

While converting Luxury buses into ordinary/city, the following works shall be carried out.

- a) Attending to the repairs of saloon under frame structure including replacement of broken/ damaged floor longitudes and cleats.
- b) Replacing the damaged roof sticks and roof panels.
- c) The existing window frames are to be modified to the windows consisting of sliding shutter frames and a separate top fixed glass in pan or ribbed pattern sheets in place of top fixed glass.

- d) In the Luxury buses there will be no seat rail and hence during conversion and overhaul, new seat rail Indal No. 1756 has to be fitted.
- e) Additional floor longitudes MSL 50X50X3 mm are to be provided to suit the mounting of seat leg bolts of the Ordinary/City bus seat frames where needed.
- f) Four stanchions are to be suitably located at an equal pitch without obstructing the free movement of passengers. New/serviceable continuous beam is to be fitted duly providing additional floor longitudes in MSL 50X50X3 mm to suit the mounting of stanchions where needed.

30 ORDINARY & EXPRESS BUSES:

Attention to be paid at depot level during the regular vehicle maintenance and repairs on need based for Ordinary and Express buses are furnished hereunder.

3.1 ATTENTION AT DEPOT LEVEL :

- a) 'U clamps are to be tightened periodically to avoid hammer-ing action which results in digging-in on the top flanges of chassis long members.
- b) The damaged Balata packing under the cross bearers shall be replaced.
- c) Cabin mounting bolts, mounting bracket to chassis bolts are to be tightened duly replacing the damaged or perished Balata packing.
- d) Cross bearer mounting bracket bolts, pillar to cross bearer bolts, floor longitude cleats and seat leg bolts (duly replacing the perished balata) are to be tightened periodically.
- e) Wherever the floor cheq. sheet rivets are found missing or sheared off, they are to be attended timely with nut and bolt and washers arrangement to avoid further damage and rattling.
- f) -Replacement of Terene felt for window shutters with new felt and oversize felt for worn out window sections.

3.2 SELECTIVE REPAIRS:

The following damages are to be attended on need basis as per the Cir. cited at reference(l).

- a) Repair /replacement of damaged foot boards.
- b) Repair/replacement of damaged passenger and driver door.
- c) Replacement of striker plates and dove tail catches.
- d) Repair/ replacement of bumpers, luggage carrier ladder and unloader.

3.3 ATTENTION REQUIRED AT ZONAL WORKSHOPS :

Structural damages are observed in case of bus bodies fabricated in accordance with 1996 to 1998 specifications the bus may need body overhaul/ Body SR between 5.5 to 6.5 lakh Kms. with due attention on the following areas.

- a) Attending to the damaged floor longitudes, mounting brackets, cross bearers and cheq. sheets.
- b) Attending to the damaged roof sticks and roof panels.
- c) The existing window frames are to be modified to the windows consisting of sliding shutter frames and a separate top fixed glass in pan or ribbed pattern sheets in place of top fixed glass.
- d) Attending to the damages of luggage carrier.

3.4 CONVERSION OF REPLACED EXPRESS BUSES INTO ORDINARY BUSES:

If the chassis condition of the replaced Express vehicles is found to be satisfactory

and do not warrant chassis or body overhaul they are to be converted into Ordinary buses at the depot level duly attending to dent and damages to the panels and applying the signal red paint externally as specified for Ordinary buses. Further in order to avoid rattling of window shutter frames Terene felt is to be replaced and damaged/ torn out seats are to be attended replacing the Rexene.

If it is not possible to attend the above conversion activity by the depot staff, the conversion works can be entrusted to an outside agency as per the instructions mentioned in the circular No. 25/99-MED, dt. 20.7.99.

4.0 CHASSIS ATTENTION:

Chassis is subjected to heavy stress at spring hanger brackets at front and rear as complete weight of the chassis and body including passengers is transmitted to road surface through springs and tyres. It is also subjected to bending moment due to cantilever action on account of front & rear overhang. Hence most of the chassis failures take place at chassis hanger brackets area. Cracks are developed in chassis long members at front spring rear bracket top hole and extend horizontally. This is due to gap between hole in the chassis and spring hanger bracket bolt. On account of hammering action due to acceleration and de-acceleration the crack develops in the chassis long member and propagates further. Vertical cracks also develop due to hammering action while vehicle passes through rough roads and propagate further. This gap between hole in the chassis and spring hanger bracket bolt is due to fitment of undersize and unspecified bolt i.e., 1/2" M.S bolt in place of M14 HTS bolts.

4.1 ATTENTION AT DEPOT LEVEL :

- a) All bolts of spring hanger brackets should be of HTS and of recommended size i.e., M14 and fitted with suitable nuts and spring washers. The bolts shall be of specified makes such as TVS/GKW/UNBRAKO & IMPERIAL FASTENERS or any other approved make. Bolts and nuts shall be tightened to the required torque (i.e., 18mkg for Tata vehicles and 14.5 mkg for Leyland vehicles) in every Sch.III/ IV maintenance.
- b) Whenever a crack is developed on the chassis, further extension of crack is to be arrested by drilling a small hole of 5 mm dia. at the edges of the crack. Welding with special alloy electrodes of 680 CGS of L & T is to be done at the cracked portion at depots duly forming V groove on either side of the crack and punching the hole in hot condition duly using template by imparting training to depot welders at Zonal Workshops with L & T service engineers.

4.2 WORKSHOP LEVEL ATTENTION:

- a) In case of worn out top flanges of chassis long members, the wornout portion should be retrieve[^] with 680 CGS electrodes of L 8B T make.
- b) The oblonged holes on the chassis should be filled with OVER-CORD - SE6013 electrodes of Advani Orlekan make and are to be punched to correct size in hot condition duly using templates.
- c) Suitable boxes are to be constructed and fitted whenever the chassis crack exceeds 6".

All EDs, RMs, Dy.CMEs, WMs are advised to follow the instructions and send the action taken reports to E.D (Engg) for review.

This has the concurrence of F. A.

Please acknowledge the receipt of the Circular.

Sd/-

(R. P. SINGH)

Vice Chairman & Managing Director

**\ \ ATTESTED \ **

Sd/-

(P. ARJUNA)

Executive Director (E)