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No:SV.FIAT Spring

Dated:- 09.01.2017

CMEs,  
All Indian Railways &  
ICF, RCF, MCF

Sub: - Maintenance of Flexi Coil Springs of LHB coaches.

Ref:- This office letter of even no. dated 08-12-14,16-07-15 & 04-01-2017.

A large number of failures in secondary suspension of LHB coaches have been reported recently, in order to ensure proper maintenance of these springs, instructions were issued by RDSO vide letter of even number dated 16-07-2015 which have been reiterated vide letter under reference. All the recent seven cases reported to RDSO pertain to a specific make i.e LPDN, and are all in 15 & 16 series coaches. RCF may like to discontinue the fitment of LPDN make springs and plan to replace this make of springs recently fitted in coaches which have been kept in store for quite a long time without being used. Replacement may be done in a time bound fashion. Zonal Railways may keep a watch on these coaches particularly of 15-16 series till the replacement of these springs is completed. RCF may circulate the list of such coaches to Railways on priority.

2. The analysis of the failed springs in a large number of cases at M&C directorate of RDSO has established that the breakage of springs takes place in the first active turn within the zone of contact between the inactive and the first active coil. The point of initiation of the failure is invariably the pitting corrosion in the zone. In order to overcome the corrosion and pit formations which gets accelerated, if the material deposited on the springs is not removed, it was advised that jet washing of the bogies including the springs may be done. All Zonal Railways may ensure that proper "**washing of the bogies including springs followed by jet air drying**" may be done in every trip preferably and must be done in D2 schedule.
3. The study conducted by the SAG level committee on FIAT bogie corrosion had revealed that the corrosion phenomenon is more predominant in the coaches fitted with toilet systems. This is due to the fact that the spilled fecal material sticks on to the bogie components in wet condition leading to accelerated corrosion. This can be avoided, if the discharge from toilets and wash basins is designed in a fashion that the direction of discharge is not in line with side frame of the bogie which is lowest portion of the bogie. Therefore, RCF may bring about suitable changes in


( spare copy )

both rod ends must rest against the first turn and the length of the line of contact is required to be worked out as per EN 13298 Annexure 'A' which specifies this to be at least 0.33 of the mean diameter of the springs when it is subjected to Axial static load at 1.1 times tare load. This requirement has been stipulated to ensure that no point contact is encountered in service. However, the analysis of failures has revealed that the paint damage in this contact zone is a bane for this spring in the corrosive environment present on the IR. Therefore, RCF being the controlling authority for this item may approach OEM for modification in the design where this particular requirement of line contact may be done away with, and the inter turn gap of the end coils may be suitably modified to ensure that there is no contact between inactive and first active coil upto the maximum designed load conditions.

5. Zonal Railways may make a failure analysis of coil spring failure with respect to block section. In case the failures are found concentrated in a particular section, the cushioning characteristics of the track may be got examined in co-ordination with Civil Engineering Department.
6. The audit of the maintenance practices followed in Jagadhari and New Delhi coaching depots and also the storage and fitment procedure at RCF is being undertaken by RDSO. Based on the outcome of the Audit, further corrective actions, if any, required shall be advised in due course of time.

It is requested that actions may be initiated as indicated above to overcome the failure of secondary coil springs which has acquired the proportions of an epidemic in the recent past and still continuing.

DA: NIL.

  
09-1-2017  
(Indrajit Singh)  
Executive Director/Carriage

Copy to:

ED/ME(Coaching), Railway Board, New Delhi for kind information please.