

भारत सरकार GOVERNMENT OF INDIA
रेल मंत्रालय MINISTRY OF RAILWAYS
रेलवे बोर्ड RAILWAY BOARD

No.2002/M(N)/960/1 Pt.

July 29, 2008

The General Managers
All Zonal Railways

**Sub: JPO on Action to be taken in case of Alarms of Wheel Impact Load
Detector (WILD)**

Ref: Railway Board's letter No.2006/Dev.Cell/IGRI/2 dt. 13.2.07

Vide Board's above referred letter, locations on IR where WILD would be installed were advised. It was also advised that Joint Procedure Order on Action to be taken in case of alarms of (WILD) shall be issued separately.

Board (MM, MT & ME) has now approved JPO on above mentioned subject which is enclosed with this letter for further necessary action by ZRs.

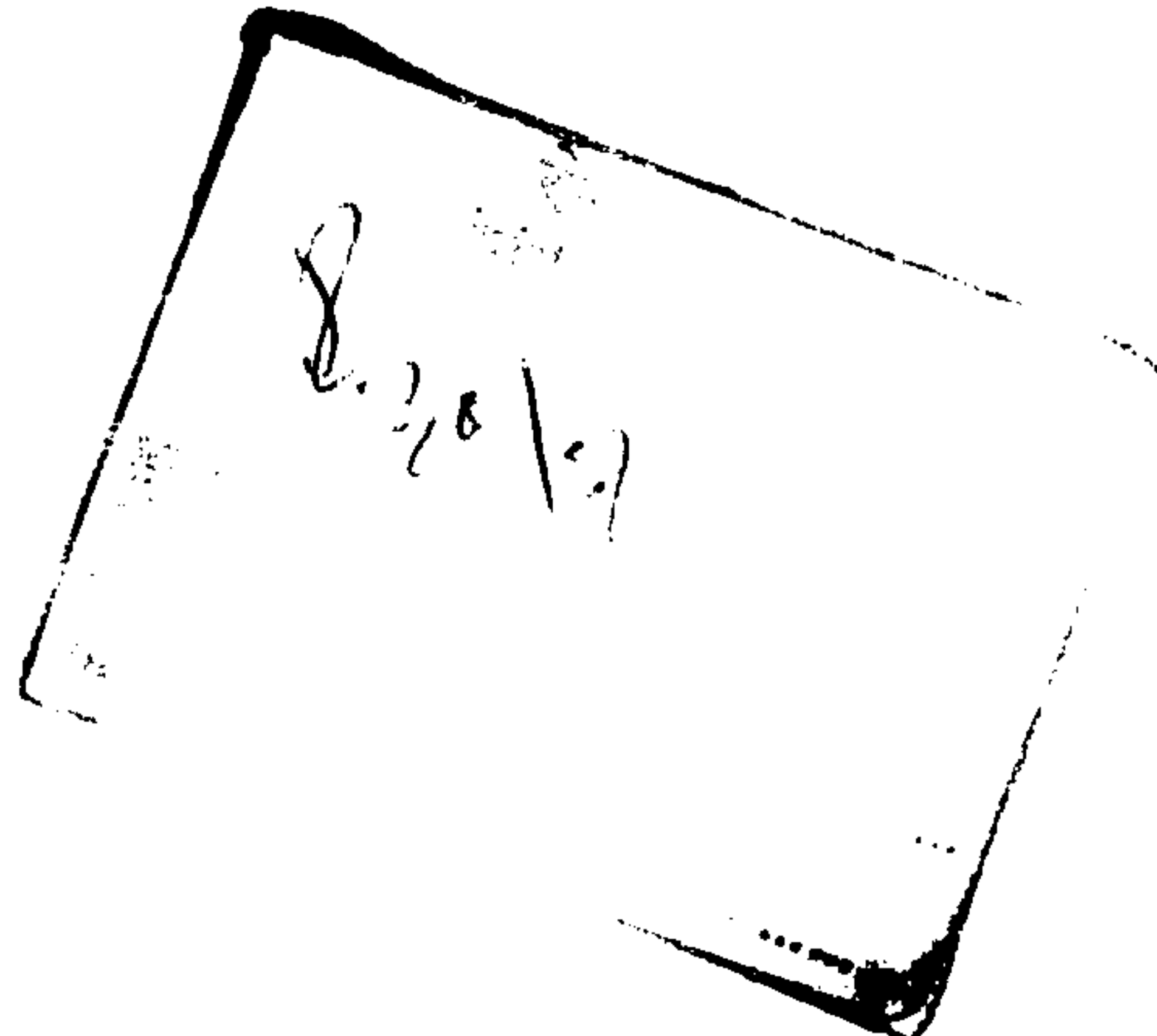
DA: As above


29/7/08
(A.K. Puthia)
Exe.Dir.Mech.Engg(Frt.)

Copy to: i) Adv.ME/Dev, Railway Board – for kind information
ii) CMEs/All ZRs

o/c

कृपया जारी करें/
मान्य
29/7/08



Joint Procedure Order on Action to be Taken in Case of Alarms of Wheel Impact Load Detector (WILD)

Wheel Impact Load Detector (WILD) equipment measures vertical wheel impact load coming on rail wheel interaction point. Adequate numbers of these equipments are being provided at strategic locations (within 50 km from TXR point) on each Railway to manage wheel impact load spectrum of coaching and goods trains and detect rolling stocks requiring attention on account of excessive impact loads.

2. Sr. DME (C&W) of the Division shall be responsible for procurement, installation, commissioning, maintenance and periodic calibration of WILD equipments. He shall also be responsible to furnish a detailed monthly report to RDSO and Board, as provided hereinafter, on all reported alarms and actual defect found in case of each such alarm, either in own division or on other division/Railways as the case may be along with his comments and suggestions.

3. All WILD monitoring terminals shall be connected to C&W Control of the Division through Railway, DOT and Mobile telephone to ensure 100% reliability of the connection on real time basis.

4. All WILD terminals shall be manned by a C&W supervisor who will be responsible for monitoring, analyzing and reporting all abnormalities to the Divisional control for necessary corrective action.

5. The WILD equipment readings of ILF and Wheel impact will be continuously monitored by the TXR staff of the installation and whenever the same reaches the critical alarm level set as per the RDSO's letter No. R2/58/WFD/vol 7 dated 3.10.2006 (copy enclosed), it shall be treated as unsafe for sustained operation. TXR staff of WILD installation, which is receiving the data from the equipment, shall intimate all relevant details like time checked, type & location of stock in the train, ILF and wheel impact load etc. to divisional C&W control. Divisional control in turn will intimate the concerned section controller who in turn will arrange to get the suspected stock detached and attended at the next TXR point, which is supposed to be around 15-50 km from the equipment. In case there is no TXR point within next 50 km, the suspect stock shall be detached at the next convenient station/yard within 50 km. Under no circumstances, the suspect stock shall be permitted to ply for more than 50 km.

6. The above procedure does not overwrite any clause written in the maintenance manual identifying damageable defects of rolling stock, the G&SR and other relevant manual/coaches being followed by the zonal railways. The laid down examination prescribed for the TXR staff will continue as usual.

7. The limits of ILF / wheel impact load for critical alarm indicated in RDSO's letter No. R2/58/WFD/vol 7 dated 3.10.2006 are based on limited field trials. Therefore these limits are subject to upward/downward review, so as to make them more realistic and meaningful, based on feedback from the ZRs and also experience with acoustic bearing detectors to be installed in future for this purpose. Hence, all Railways should furnish monthly feedback on their experience, suggested limits and corrective action to ED/Wagon and ED/Coaching in RDSO under intimation to EDME/Freight and EDME/Coaching in Railway Board.

8. This has the approval of Board (MM, MT & ME)

D.O. No.R2/58/WFD/Vol.7

Dated: 03-10-06.

My dear Rao,

Sub : Wheel Impact Load Detection System.

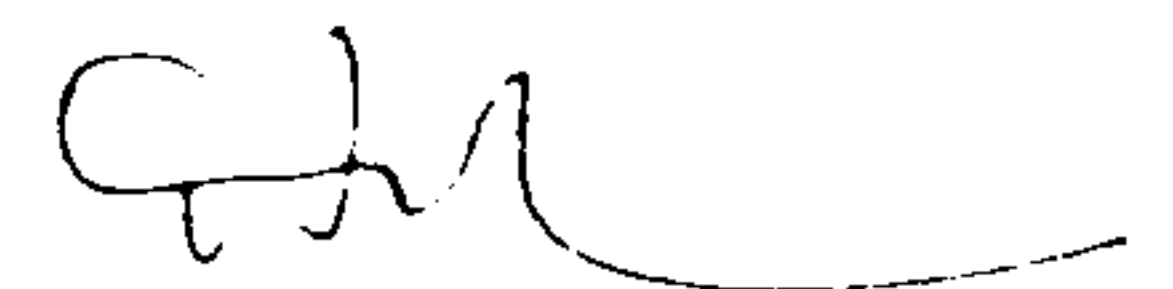
Ref : MM's DO letter No.2006/Dev.Cell/IGRI/2, dt. 19-06-06.

As directed by your predecessor, the trials on 'WILD' were conducted by selecting commonly used coaching and freight rolling stocks on Indian Railways namely WGACCN, WGSCN, GS, BOXN, BCN with created flats. Trial special was run over the 'WILD' equipment at Ajgain Railway Station between 07-08-06 & 08-08-06 using empty rolling stock and from 01-09-06 to 05-09-06 with loaded rolling stock at different speeds. Summary of trial results is enclosed (Annexure-B).

A committee of Sr. ED's/EDs at RDSO comprising Sr. ED/Traffic, ED/Track, ED/Wagon & ED/Research reviewed the records of trial data and have revised the threshold limits decided by this committee earlier (Annexure-A). Threshold limits have now been recommended such that the impact load and impact load factor due to flat size of 60mm for wagon stock and 50mm for coaching stock falls in the category of maintenance alarm. Such rolling stock is proposed to be attended at scheduled maintenance points. Critical alarms, for impact load above 35 tonnes and Impact Load Factor above 4.5 would necessitate thorough examination/attention at next TXR point adjacent to 'WILD'.

With best wishes,

Yours sincerely



(A. K. Rao)

Enclosure: As above

Shri R.K. Rao,
Member Mechanical
Railway Board,
New Delhi.

**REVIEW OF THRESHOLD LIMITS FOR
'WHEEL IMPACT LOAD DETECTOR' EQUIPMENT ON 22/09/06**

Present -

- S/Shri
- R.K. Dutt, Sr. ED/Traffic
 - A. Jain, ED/Track
 - G.C. Budhalakoti, ED/Wagon
 - R.B. Srivastava, ED/Research

The 'Wheel Impact Load Detector' (WILD) equipment is a tool to indicate heavy impact load by measuring the vertical load coming on rail-wheel interaction point. The load will be higher than normal loads on account of defective wheels like flats, out of rounds and metal deposition and also due to other defects in bogie like weak or broken springs, suspension defects and worn out rubber pads. The equipment is a useful tool to identify rolling stock requiring maintenance and also for detecting critically unsafe rolling stock to prevent accidents.

The equipment is to be installed about 15-50 kilometers from a major C&W depot station. This will enable checking of critical alarm generated through 'WILD'.

The threshold limit for the 'WILD' equipment were recommended by the committee of Executive Directors at RDSO comprising Sr.EDSW, ED/Track, ED/Traffic & ED/Research vide letter no. MW/TVI dated 31/3/05.

In reference to MM's DO No. 2006/Dev.Cell/IGRI/2 dt. 19/6/06 and directives of MT to RDSO to review the threshold limits, the committee is reviewing the same.

On instruction of MM vide above letter, trials with wagons and coaches having known defects have been conducted on 7th & 8th August'06 in empty load condition and from 1st to 5th September'06 under loaded condition. The trial data was examined and the conclusion (attached) showed that flat of 60mm in wagons and 50mm in coaches created maximum impact load of 28.25MT and in most of the cases impact load factor of defective wheels is between 2 & 4.5.

All railways where 'WILD' equipment has been adopted, started with a higher impact load level as emergency alarm limit and with the experience gained and corrective action taken, the limit has been reduced subsequently. Accordingly **threshold limits** classified as Maintenance Alarm and Critical Alarm have been suggested which will be reviewed after one year.

The alarms and actions to be taken in this recommendation do not over-ride any clause written in the maintenance manual identifying damageable defects of

rolling stock, the G&SR and other relevant manuals/codes being followed on all Railways. The laid down examinations prescribed for the TXR staff will continue as usual.

It was discussed by the committee that other foreign Railways running wagons with axle load upto 30t have set emergency limit of wheel impact load of 40MT. But the rails being used there are 68 kg rails whereas on Indian Railways 60 kg rails are in use. Keeping in view the above and the experience of 'WILD' results at Ajgain uptill now following alarm levels are recommended:

- a) Maintenance Alarms : For Impact Load Factor (ILF) readings falling between 2 to 4.5 or wheel impact load between 20t to 35tonnes.

The committee in order to facilitate acceptance of the equipment in initial stages is recommending the movement of the rolling stock to the scheduled terminating examination point at which the TXR staff should use the data for identifying defects to take corrective action. The TXR staff adjacent to 'WILD' installation who is receiving the data from the equipment will intimate the TXR staff at the C&W depot where that particular rolling stock rake is due for examination.

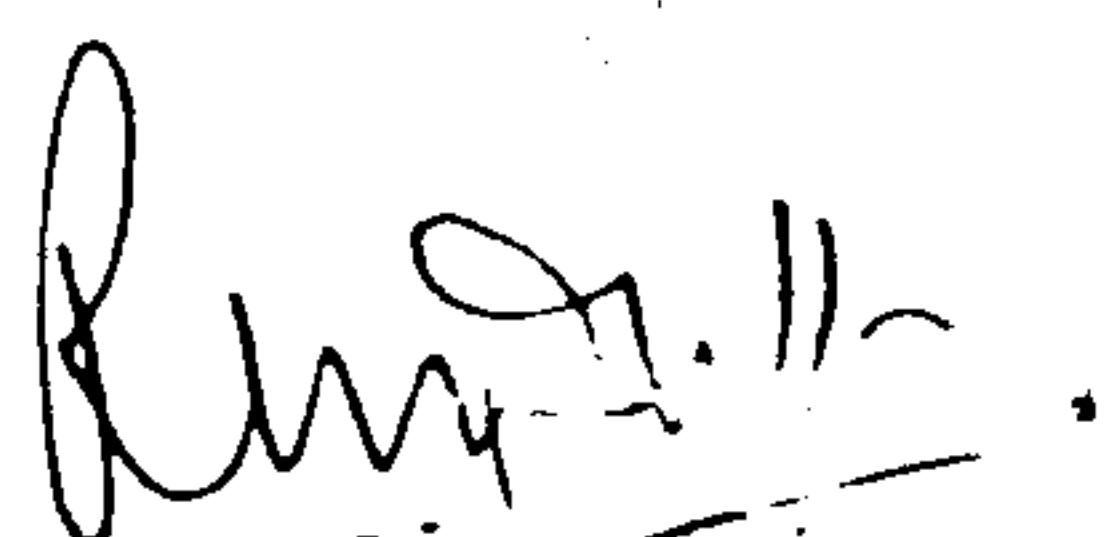
For coaching stock, the intimation has to be given to the primary/secondary depot where the defects can be attended.

For wagon stock, the rake terminating point at which the next examination is scheduled needs to be intimated for attention.

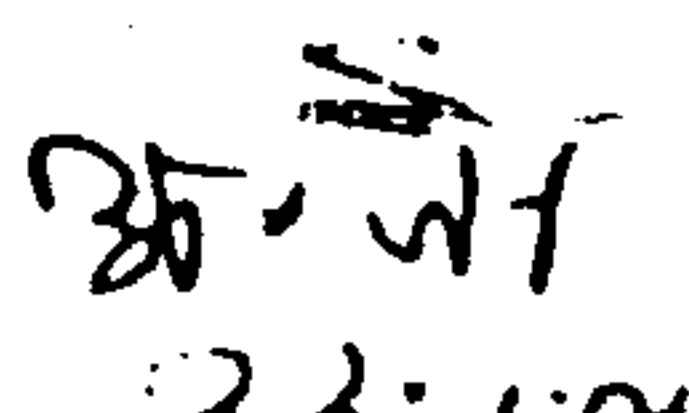
- b) Critical Alarms : For ILF more than 4.5 or wheel impact load more than 35 tonnes.

The defects in this category are classified as unsafe for sustained operation and the committee, therefore, recommends thorough examination at the next TXR point, which is supposed to be around 15 - 50 km from the equipment.

The TXR will examine and check for any damageable defect and decide for detachment or to allow the stock to run upto the train terminating point.



(R.K. Dutt)
Sr. ED/Traffic



(Anirudh Jain)
ED/Track



(G.C. Budhalakoti)
ED/Wagon



(R.B. Srivastava)
ED/Research