

COMPENDIUM OF INSTRUCTIONS ON RAILWAY LEVEL CROSSINGS



SAFETY ORGANISATION
SOUTH EASTERN RAILWAY





दक्षिण पूर्व रेलवे SOUTH EASTERN RAILWAY



एन. काशीनाथ, मुख्य संरक्षा अधिकारी
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FOREWORD

With increasing rail and road traffic all over the country, level crossings have become a very critical part of the railway system. It is also well-known that of the total accidents taking place on the Indian Railways, level crossing accidents form about 40% and casualties in level crossing accidents account for about 60% of the total casualties under the various accidents on the railways.

With such a scenario, the importance of ensuring safety at level crossings is becoming more and more vital. Taking this into account the railways have adopted various strategies to reduce level crossing accidents, with the ultimate aim of totally eliminating all types of level crossings, both unmanned and manned. However, this is going to be a long drawn process and till such time it is achieved, the railways have to adopt other means to ensure safety across the existing level crossings.

With this objective, from time to time various guidelines have been issued by the railway administration both at the zonal and apex levels. The General and Subsidiary Rules also contain large number of directives under a separate chapter on level crossings. In order to provide a convenient reference point to railwaymen, few railways have already published a compendium bringing out the various guidelines and other directives available regarding level crossings. Since SE Railway did not have a similar publication, efforts have now been made in bringing out this compendium of instructions containing all information on level crossings.

I would like to appreciate the efforts of Shri H.K. Mohanty, Sr. Safety Officer, Traffic and his team in taking pains to compile and bring out this compendium of instructions.

I hope this will prove useful to the officers and staff connected with the task of ensuring safety at level crossings.

NK
28.06.13

(N. KASHINATH)
Chief Safety Officer

INDEX

S.No.	Chapter & Subject	Page No.
1	Chapter - I Introduction	1
2	Chapter - II Main policy issues relating to Level Crossings and ROB/RUBs	3
3	Chapter - III Important letters related to Level Crossings	5
4	Chapter - IV General instructions for all types of Manned Level Crossing Gates	20
5	Chapter - V Working procedure of Level Crossing gates with Electric Lifting Barrier	26
6	Chapter - VI System of working and protection to be adopted in the event of failure of manned Level Crossing gates	28
7	Chapter - VII Other Important Provisions of G&SRs relevant to Level Crossing	29
8	Chapter - VIII Other Important Provisions of IRPWM relevant to Level Crossings	33
9	Chapter - IX Provisions of different Acts relevant to Railway Level Crossings	46
10	Chapter - X Checklist for Inspections	47
11	Chapter - XI About Level Crossings	50
12	Chapter - XII Actions for improving safety at manned Level Crossings	68

CHAPTER – I

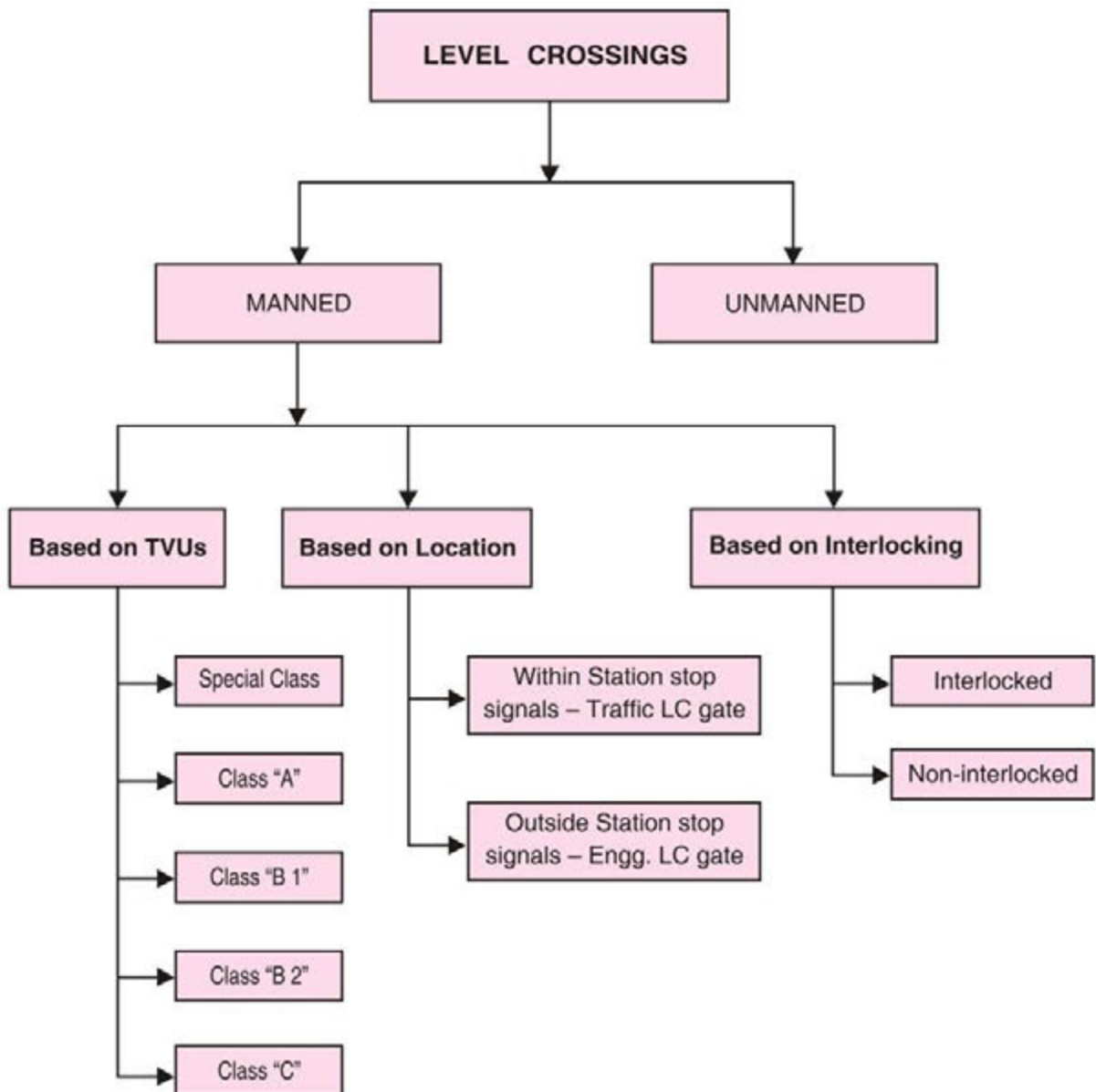
INTRODUCTION

- **Definition :**

"Level Crossing" means the intersection of road with railway track at the same level.

"Level Crossing Gate" means any form of movable barrier, including a chain, capable of being closed across the road at the level crossing, but does not include a wicket or a turnstile for the use of pedestrians.

- **Classification of level crossings :**



Classification of level crossings based on the TVUs are as under :

<u>Class</u>	<u>Criteria</u>
(a) 'Special'..... for roads	TVUs greater than 50,000
(b) 'A' class..... for roads	TVUs between 50,000 & 30,000
	Or
	Line capacity utilisation 80% (on single line) and number of road vehicles greater than 1000
(c) 'B' class for roads	TVUs between 30,000 and 20,000 and number of road vehicles greater than 750

'B' Class is further subdivided as following :

B1 class for roads	TVUs between 30,000 and 25,000
B2 class for roads	TVUs between 25,000 and 20,000
(d) 'C' class for roads	All other level crossings for road not covered in above classes.
(e) 'D' class for cattle crossings	[IRPWM - Para 902(2)]

Census:

Periodical census of traffic at all level crossings, unmanned/manned shall be taken once every three years. This shall be carried out for 7 days and total TVUs are worked out, the census shall be carried out by a multi-disciplinary inspectorial team consisting of representatives of CE, S&T and Traffic departments. The mechanism shall be set up by DRM to ensure that the representatives are present for census by laying down advanced time table for carrying out census of level crossings.

Calculation of TVUs

- | | |
|---|---------------|
| (a) Train, Road vehicle, Bullock carts & Tongas | – One unit |
| (b) Cycle rickshaw / Auto rickshaw | – Half unit |
| (c) Two wheelers and pedestrians | – Not counted |

TVUs = Train Units X Road Vehicles Units

- (1) In the case of unmanned level crossing involved in an accident, census should be conducted immediately, to determine whether manning is required.
- (2) In the case of manned level crossings, the quinquennial census should be substituted by a census-cum-job analysis so as to avail of the opportunity of checking up the adequacy of men on consideration of Hours of Employment Regulations.

[Ref. : IRPWM - Para 919]

CHAPTER – II

Main policy issues relating to Level Crossings and ROB / RUBs

PROVISION OF NEW LEVEL CROSSING :

As per existing policy provision of level crossing is made in consultation with the State Govt. at the time of laying a new line or within 10 years from the date of its commissioning to traffic. Thereafter any accommodation work such as level crossing can be provided at suitable location on 'Deposit Terms' basis, if such a proposal is sponsored by the State Govt./Local Bodies duly agreeing to bear the initial cost of construction of the level crossing and one time capitalized cost of recurring maintenance and operational charges. Further, as per current policy of Railways, no new unmanned level crossing is permitted on existing lines.

MANNING OF EXISTING UNMANNED LEVEL CROSSING :

As per extant rules, in case an unmanned level crossing provided initially and maintained at the cost of the Railways, needs manning / upgrading / posting of additional gatekeeper due to increase in road traffic only, the cost both initial as well as recurring and maintenance has to be borne by the State Government / Road Authority concerned.

However, keeping in view the grave consequences of accidents at unmanned level crossings, Railways have decided in 2003 to man vulnerable level crossings based on the traffic volume and visibility conditions at the unmanned level crossings for which Railways have laid down certain criteria based on traffic volumes and visibility conditions. Manning of such level crossings is being done progressively.

WIDENING OF LEVEL CROSSINGS :

The width of the level crossings depend on the type and width of the road on which it is located. Such level crossings are widened as and when the width of the road is increased by the State Govt./National Highway Authority of India.

CONSTRUCTION OF ROAD OVER / UNDER BRIDGES :

A) Cost Sharing :

Road Over/Under Bridges works are undertaken by Railways in lieu of existing level crossings on cost sharing basis if the traffic density at the level crossing is one lakh or more TVUs (TVU- a unit obtained by multiplying the number of trains to the number of road vehicles passing over the level crossing in 24 hours) otherwise on 'Deposit Terms' basis. Proposals are sponsored by State Govt. concerned duly fulfilling certain prerequisites required under extant rules.

State Government / Road Authorities sponsor the proposal by completing pre-requisite formalities like:

- (i) undertaking for closing of the Level Crossings,
- (ii) provision of funds in the State's Budget and
- (iii) Advance action for land acquisition etc.

Cost of Land is borne by State Government.

State Government / Road Authorities may also raise their share cost through collection of toll, commercial exploitation of space under Road Over Bridges out side the railway boundary, etc.

CLOSURE OF LEVEL CROSSING IN LIEU OF WHICH ROAD OVER / UNDER BRIDGE HAS BEEN CONSTRUCTED

As per standard condition of agreements entered into with the State Govts. prior to sanction of work for replacement of an existing level crossing with Road Over/Under Bridges, the State Govts. are liable to give an undertaking that the level crossing in lieu of which the Road Over / Under Bridge is being sanctioned on cost sharing basis, will be closed on commissioning of the Road Over/Under Bridge. Therefore, on commissioning of the Road Over/Under Bridge to traffic, the level crossing in lieu of which it is constructed on cost sharing basis is closed.

B) Deposit :

Construction of ROB/RUBs in lieu of existing level crossings which have traffic density of less than 1 lakh TVUs is considered on 'Deposit' Terms, proposal for which is sponsored by concerned State Govt. duly agreeing to bear the entire cost of construction and recurring maintenance charges thereof. Similarly ROB at new places where no level crossing exists are also provided on 'Deposit' Terms.

C) BOT :

Construction of ROB/RUBs on BOT(Built, Operate & Transfer) Scheme can be done in agreement by State Govt. by allowing private parties to construct ROB/RUBs and recover their capital in resurrect by charging fee from users of ROB/RUBs. This was agreed to in Nov' 94 in terms of National Highway Act 1956 section VII & IX as amendment vide Ordinance promulgated by President of India on 23rd Oct. 1992.

ROB related issues :

- (i) Railways share 50% cost of the total work for a two lane road Over Bridges i.e. 7.5 meter wide carriage way with 2 footpath of 1.5 meter width on either side. However, if Railways desires to have extra length of the bridge to accommodate future tracks, the cost of the extra length is to be borne by the Railways, in addition to their share. In case State Govt./authorities desire extended length of approaches, the cost shall be borne by them.
- (ii) For National Highways, the Road width shall be 9.5 meters with two raised kerbs of 0.75 meter, or 7.8 meter with two foot paths 1.5 m each on either side or crash barriers as per stipulations and requirements of Ministry of Road Transport and Highways (MORTH). The Railways will bear the entire cost of bridge proper across tracks and cost of approaches will be borne by MOSRTH/National Highway wing of State Govt. irrespective of land boundaries.
- (iii) A policy was issued in 1991 as per which now Railways also share 50% cost of the RUB/ sub-way for light vehicles if provided in addition to the cost of Road Over Bridge. This has been done to enable State Governments to close the Level Crossings without any problems.

RECENT INITIATIVES REGARDING CONSTRUCTION OF ROAD OVER / UNDER BRIDGES ON COST SHARING BASIS :

Recently, following initiatives have been taken by the Ministry of Railways to encourage construction of Road Over / Under Bridges in lieu of busy level crossings.

(i) Sharing of cost for four lane ROB / RUBs :

- Since Jan. 2003, Rly. shares 50% cost of 4 lane ROB/RUB provided minimum TVU of the level crossing is 3 lakhs comprising not less than 6000 road vehicle units.
- And, Road Authority agree for the four laning of the approach portion also.

(ii) Sharing cost of widening of two lane existing Road Over / Under Bridges :

- Since Jan. 2003, Rly. shares 50% cost of widening of existing two lane ROB / RUBs to four lane Road Over / Under Bridges also, provided, that the TVU level is not less than 5 lakh comprising not less than 10,000 road vehicle units.
- In addition, an incremental increase of two lakh TVUs comprising 4000 road vehicle units must have taken places since the construction of the two lane Road Over Bridge.

(iii) Sharing of cost of Road Over Bridge where State Govt. can raise their share through commercial means :

- Since May 2002, Railways share 50% cost of the ROB where State Govt. may raises its 50% share through commercial means like collection of toll or commercial utilization of space under the ROB outside the Railway land.

(iv) Standardization of width of ROB / RUB as per latest MORTH norms :

- Since Sept. 2002, Railway agreed to share as per the latest norms of MORTH for National Highways ROB width as 9.5 m with two raised curbs of 0.75 m or 7.8m with two foot path 1.5m each on either side or crash barriers.

Ref. : No. 2007/CE-I/LX/90

CHAPTER – III

IMPORTANT LETTERS RELATED TO LEVEL CROSSINGS

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2006/CE-IV/LX/WP

New Delhi, dated 02.05.2012

**The General Manager,
All Indian Railways
Including Konkan Railway Corporation,**

Sub: Clarification regarding Normal position of LC gate from “closed to road traffic” to “open to road traffic”.

- Ref: (i) Director/Safety, Rly Board letter No. 2000/Safety (A&R)/19/39 Pt. dt.27.12.10
- (ii) Adviser/Signal, Railway Board letter No. 2010/Sign/LX/2 dated 11.10.2010.
- (iii) EDCE (B&S) II, Railway Board letter No. 2006/CE-II/LX/WP dated 07.05.10.
- (iv) Adviser/Safety, Railway Board letter No. 2008/Safety (A&R)/3/2 dt. 29.12.09.
- (v) Director/CE, Railway Board letter No. 83/WI/LX/16/2 dated 24.10.1985.
- (vi) EDCE (B&S) II, Rly Board letter No. 2006/CE-IV/Misc.-2 (RUBs) dt 18.04.12.

Board's instruction under reference (ii), re-circulated by Director / Safety / Railway Board, vide reference (i) above lays down stipulations under which a manned lever crossing gate should be interlocked with station signals or gate signals depending upon its location within or outside station limits, respectively. The normal position of a manned level crossing gate which is interlocked with Station or Gate Signal is generally “Open to Road Traffic”, since the same is protected by signal.

The normal position of a manned level crossing gate which is not interlocked with station or gate signal is generally “Closed to Road Traffic”, since the same is not protected by signal. However, in addition to powers conferred to Railway Administration under Para 907 of IRPWM, normal position of a non-interlocked manned level crossing gate can also be changed from “Closed to Road Traffic” to “Open to Road Traffic” under one of the following situations :-

- (i) if the Manned Level Crossing Gate (non interlocked), qualifies for interlocking (i.e. having TVUs > 20,000), the normal position can be changed to “Open to Road Traffic” as an interim measure till the manned level crossing is either eliminated or interlocked
[Authority: Ref. (iv) & (vi) above];
- (ii) if Manned Level Crossing Gate (non-interlocked) is situated on a section where average number of trains during the 24 hours period is less (say upto 14), the normal position can be changed to “Open to Road Traffic” regardless of the TVUs at the gate
[Authority: Ref. (iii) above]

In both the above cases, the decision about changing the normal position of a Manned Level Crossing Gate (non-interlocked) from “Closed to Road Traffic” to “Open to Road Traffic” can be taken by DRM with the approval PCE/CE (Co-ordination) and COM, and after fulfilling the following conditions:-

- (i) Level crossing should not be situated on suburban section or in automatic signalling territory;
- (ii) Level crossing should be equipped with lifting barriers;

- (iii) Telephonic communication should be available with Gateman and Station Master for exchange of private numbers;
- (iv) Road users should have clear visibility of track on either side of level crossings upto 600 meters. Loco Pilots should also have clear visibility of level crossings from a track distance of 600 meters on either side of level crossings.
- (v) As long as the gate is kept "Open to Road Traffic" a red flag by day time and red light during night should be displayed towards the approaching trains on either side of the level crossings;
- (vi) Level crossing gate should be provided with whistle boards, speed breakers / rumble strips as per standard design.

In order to avoid infructuous expenditure on interlocking, Railways shall explore the possibility of elimination of the manned level crossing gate (non-interlocked) "Open to Road Traffic" by sub-ways [Authority Ref. (vi)] or diversion roads or ROB. If the manned level crossing gate cannot be eliminated, it should be interlocked on priority. PCE, COM and CSTE should hold regular meeting (to be co-coordinated by PCE) on elimination or else interlocking of LCs so as to avoid infructuous expenditure.

This supersedes Board's letter reference (iii), (iv) & (v) above.

This issues with the approval of the Safety Directorate of Board.

(A.K. Shrivastava)
Executive Director / Civil Engg. / B&S-II

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

No. 2010 / SIG / LX / 2

New Delhi, dated: 10.10.2011

**The General Manager,
All Indian Railways.**

Sub: Provision of Safety Devices at Level Crossing Gates - Comprehensive Policy.

- Ref: i) Railway Board's letter No. 2010/SIG/LX;2, dated 01.10.2010.
ii) Railway Board's letter No. 2001/CE-1/LX/AC/01 (data), dated 25.09.2002.
iii) Railway Board's letter No. 2009/CE-I/Misc/10/Vision/2 dated 05.10.2011.

Instructions were issued in 2002 vide reference (i) above to classify Level Crossing Gates based on TVUs giving priority of different facilities to be provided while upgrading Level Crossing Gates from one class to other. It is, however, noted that a large number of gates have not been upgraded and reclassified as yet. Railways should immediately review and plan works to upgrade and reclassify the gates, wherever necessary and submit proposals in the Works Programme.

Railway Board have recently issued comprehensive directions regarding provision of Safety Devices at Spl., A, B1 & B2 class Level Crossing Gates vide letter No. 2010/SIG/LX/2, dated 1.10.2010. While issuing this comprehensive policy for provision of these safety devices, Railways were advised to review the position and take up works, where there is shortfall of these safety devices.

In a recent incident at a Level Crossing Gate, which was having more than 1 lakh TVUs on the intensively used 'A' route, it came to light that the commitment and promptness on the part of the Railways to upgrade, reclassify and to interlock Level Crossing Gates, was missing.

Railways are, therefore, directed to urgently review the position and take up the works as under:—

- (a) Plan works to upgrade and reclassify LC Gates to higher class based on TVUs & as per criteria laid down in Civil Engineering Directorate's letter No. 2001/CE-1/LX/AC/01 (data), dated 25.09.2002 and get them sanctioned under GMs' power or submit proposals for inclusion in Works Programme, where the cost is beyond Railways' power of sanctioning of works. PCEs have been directed in this regard vide Railway Board's letter no. 2009/CE-I/Misc/10/Vision/2 dt. 05.10.2011.
- (b) Upgrade, reclassify and interlock all Level Crossing Gates having TVUs more than 50,000 on A, B & C Routes by 30.06.2012, where the works are already sanctioned. Wherever, the works are not sanctioned, they may be got sanctioned under GM's power as adequate funds have already been made available to the Railways under Plan Head-29.
- (c) Level Crossing Gates having TVUs 30,000-50,000 on A, B & C Routes, where sanctions are available, should be interlocked by 30.09.2012. Wherever, the works, are not sanctioned, proposals should be submitted for inclusion in the Supplementary Budget with the concurrence of the finance and approval of General Manager, in case, the same are beyond General Manager's power.
- (d) Interlocking of sanctioned works at Level Crossing Gates with TVUs between 20,000 and 30,000 should be done progressively and wherever the works are not sanctioned, the same should be sent for inclusion in the Works Programme 2012-13.
- (e) Quantum of work under each head as above may be identified and plan of action with target date of completion of work be advised to Board by 30.11.2011. Information, thereafter, be submitted as per the Proforma enclosed, along with the Monthly Safety PCDO, of the General Manager to the Board.
- (f) Other requirements as indicated in the latest Board's policy dated 01.10.2010 may also be planned for progressive provisioning starting from A B C Routes and based on the TVUs of the gate.

This issue with the approval of Safety and Civil Engineering Directorate.

Please acknowledge receipt.

(Arun Saxena)
Adviser (Signal)
(Railway Board)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2006 / CE-I / LX / WP / Pt

New Delhi, Dated 30/08/2011

The General Managers'

All Zonal Railways

Sub : Revised criteria for manning of unmanned level crossings :

In view of the Ministry of Railways policy to eliminate or man all unmanned level crossings by March' 2015, Railways have approached Board to review the Train Vehicle Unit (TVU) based criteria of manning of unmanned level crossing. The issues involved have been re-examined. Board has now decided to further relax the criteria manning of unmanned level crossings as under :-

Revised Criteria of Manning of unmanned level crossings (August' 2011)
Category-I : All Unmanned Level Crossings Gates with TVU above 3000.
Category-II : All unmanned level crossings gates with visibility restricted to 800 meters for road users and TVU above 2500.
Category-III : All unmanned level crossings, which do not fall in Category-I & II above and which cannot be eliminated by any other methods like construction of diversions road, subway, closure of gates having low TVU or any other means as per extant policy instructions.
Note for Category III : Divisional Railway Manager shall, ensure identification of unmanned level crossings, which can be eliminated by any other means, get necessary works sanctioned and simultaneously obtain No Objection Certificate (NOC) i.e. consent for closure of unmanned level crossings from the State Govt./District Magistrate to avoid delay in closure. For remaining unmanned level crossings, i.e. which cannot be eliminated by any methods and where manning is the only solution; Divisional Railway Manager shall recommend proposals of manning of unmanned level crossings, in order of priority, for timely sanction by the competent authority. Manning of level crossing can be prioritized in order of TVU or any other relevant site specific factors. Manning of such unmanned level crossing gates will require specific approval of the General Manager.

This supersedes Board's letter No. 2006/CE-I/LX/WP dated 12.04.2010 issued on the subject matter.

This issues with approval of **Board** (ME, MT & CRB).

(A.K. Gupta)
Additional Member Civil Engineering

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

2005/CE-1/LX/Misc/4

New Delhi, dated 28.01.2011

**The General Manager
Western Railway,
Churchgate, Mumbai- 400 020.**

Sub:Inclusion of two wheelers in the census of traffic being undertaken in level crossings.

Ref : GM / WR D.O. No. W350 / 0 (Policy) dated 10.01.2011.

The proposal for inclusion of two wheelers for giving weightage in arriving at the census at level crossings has been considered by **Board (ME & CRB)**. It has been decided that the status quo be maintained i.e. the present system of arriving at TVUs at Level Crossings during periodical census to continue. This issue has also been discussed in past and decision of Board has been conveyed vide Board's letter No. 2006 / CE-1 / LX / Policy / 01 dt. 28.08.2006.

It is further informed that as per the definition and classification of Train Accident, "if road vehicle is not capable of being physically cleared off the track promptly by single person operating it, it should be termed as road traffic for the purpose of classifying such accident as train accident, irrespective of mode of traction". **Since two wheeler vehicles can be physically cleared off by one person and it is fully within driver's control, it has not been rightly factored in TVU calculation or in train Accident.**

Moreover, manning criteria of unmanned level crossing has already been recently relaxed to a very low value i.e. 3000 TVU (2500 in case of restricted visibility) to bring more nos. of level crossings in the ambit of manning. In case, Zonal Railway feel that any accident prone / vulnerable unmanned level crossing is required to be manned even though it does not qualify as per TVU criteria, the same can be approved by the General Manager as a special case in terms of Board's letter no. 2006 / CE-1 / LX / WP dated 12.04.2010.

As per railway's PCDO, infrastructure for **116 nos.** of unmanned level crossings have been completed on Western Railway but manning have not been done for want of manpower. In this regard, may like to direct DRMs and CPO to post all medically fit new appointee in Group-D category, as trackman / gateman as per extant instruction on the subject, so that manning can be done early on your Railway.

**(Arun Kumar Shrivastava)
Exe. Dir. Civil Engg. (B&S-II)**

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

2006/CE-1/LX/WP/ (Part)

New Delhi, dated 28.01.2011

**The Principal Chief Engineers
All Zonal Railways**

Sub : Provision of additional speed breaker outside the gate post at unmanned Level Crossings.

Ref: Railway Board letter no. 2006/CE-I /LX/WP, dated: 10.06.2008

Railways have approached Board to withdraw the instruction of 2nd/additional speed breakers contained in **Para 2(b) of aforesaid letter**, since the same is not improving safety condition of road users, rather such gates may become more accident prone and lead to congestion at times. This issue has been re-examined by **CE & Safety Dte.** In the overall interest of rail-road users safety, it is modified as under.

- (i) Provision of **2nd / additional speed breaker** at unmanned LC gates, required as per Para 2(b) of Board's letter no. 2006/CE-I/LX/WP dated 10.06.2008, is dispensed with immediate effect.
- (ii) Railways shall provide and maintain **Single Speed Breaker** on approach of level crossing at a distance about 20M from gate post of level crossing, subject to availability of land within Railway or State Govt. boundary, till such time **Rumble Strips** are provided and maintained by Road authorities. This will be provided on Open-line systematically, i.e. at the time of level crossing road surface works and in case of new line, doubling and gauge conversion sites, before commissioning of the section.

This issue with the approval of **Board (ME & CRB).**

(Arun Kumar Shrivastava)
Executive Director / CE (B&S-II)

CORRIGENDUM

No.2010/SIG/LX/2

Dated: 01.10.2010

**General Managers,
All Indian Railways.**

Sub : Provision of Safety Devices at Level Crossing Gates - Comprehensive Policy :

Ref: Board's letters No. -

- i) 77/W-3/SG/LX/2 dated 16.3.79.
- ii) 2002/Sig/PI/1 dated 09.07 2002 (Item No. A/A3/vi) & Clarification letter vide No. 2000//Sig/LX/2 Pt. dated 05.05.2003.
- iii) 2001/CE-1/LX/AC/01 (Data) dated 25.09.2002
- iv) 2000/Sig/LX/2 dated 23.07.2003, 07.04.2006 & 02.08.2006.
- v) 2006.CE-I/LX/WP dated 12.04 2010.

In supersession of the policy letters issued by Signal Directorate vide reference (i), (ii) & (iv) above and based on the criteria for classification of Level Crossing Gates issued vide references (iii) & (v) above, instructions regarding provision of Safety Devices at Level Crossing Gates have been reviewed, updated and consolidated keeping in view the present day requirement of safety making them simple and easy to interpret. Accordingly, Comprehensive Policy for provision of safety devices has been approved by the Board (ML, ME, MT/CRB). (Enclosed in two Pages)

Correction Slip to Chapter XIV of IRSEM Part II, Annexure 10, Interlocking Communication Device, is being issued separately to include this revised policy. Correction Slip to Para 904, Annexure 9/1, Item 9 of IRPWM shall also be issued separately.

Railways should immediately review the position as per the revised comprehensive policy and take up works where there is a shortfall in terms of provision of these Safety Devices.

(Arun Saksena)
Adviser (Signal)
Railway Board

Encl. As above

Annexure to letter No. 2010/SIG/LX/2, dtd. - 01.10.2010

Chapter XIV of Indian Railway Signal Engineering (IRSEM) Part-II (Annexure 10-Revised)						Year 2
Comprehensive Policy on Provision of Safety Devices at Level Crossings						
	Spl. Class	A Class	B1 class	B2 class	C class (Manned)	Other Stipulations
TVU ->	>50,000	>30,000 and <50,000	>25,000 and <30,000	>20,000 and <25,000	>3000 Cat I & >2500 Cat II	
1. Interlocking of Gates with Signals.						
a) Within Station Limits	Should be Interlocked with Station Signals	Should be Interlocked with Station Signals	Should be Interlocked with Station Signals	Should be Interlocked with Station Signals	Should be Interlocked with Station Signals in Suburban Section. In Automatic Block Signalling in Non-suburban section, it should be interlocked with Station Signals, if the LC Gate is operated from the nearest Cabin of it, it has to be interlocked for any other reason irrespective of the place of operation.	To minimize the Mean Waiting Time for road users, the arrangement of interlocking should be such that the last operation before taking 'OFF' of Signal should be the closing of the Gate and the first operation after the train has cleared the Level Crossing and the Signal is put back to 'ON' position should be opening of the Gate by the Gateman.
b) Outside Station Limits	Should be Interlocked with Gate Signals	Should be Interlocked with Gate Signals	Should be Interlocked with Gate Signals	Should be Interlocked with Gate Signals	Should be interlocked with Gate Signals in Automatic Block Signalling Sections.	<p>(i) In case of level crossing protected by signal, where the sighting of the signal by an engine driver is inadequate and the Gate signal is non pre-warned through other means (Distant Signal / Independent Warner Signal / Repeater Signal etc.), a Warning Board should be placed at not less than the emergency braking distance in the rear of the Gate Stop Signal. The board should be vertical 2000 mm by 450 mm with alternate black and yellow strips 125 mm width painted on it at an angle of 45 degree. The top of the board should 4 M above rail level. The board need not be lit at night but should as far as possible be provided with scotchlite or other effective light reflectors or retro-reflective tape.</p> <p>(ii) Where level crossing is situated outside station limits but close proximity thereof, the clear distance between the level crossing and an outer signal should not be less than the full train length.</p>
Note: All manned level crossing gates both within and outside station limits falling on suburban sections and Automatic Block Signalling section shall be interlocked irrespective of the classification / TVUs of the gates.						

Chapter XIV of Indian Railway Signal Engineering (IRSEM) Part-II (Annexure 10-Revised)						
Comprehensive Policy on Provision of Safety Devices at Level Crossings						
						Year 2
	Spl.Class	A Class	B1 class	B2 class	C class (Manned)	Other Stipulations
TVU ->	>50,000	>30,000 and <50,000	>25,000 and <30,000	>20,000 and <25,000	>3000 Cat I & >2500 Cat II	
c) Normal Position of Gate	Shall be normally kept open to Road Traffic				If Interlocked, shall be normally kept open to Road Traffic.	
2. Telephonic Communication from the Gate Lodge.						
Within or Outside Station Limits	Telephone be provided with ASM's office with all Manned Level Crossing Gates.					In Block Sections having large number of Level Crossing Gates, the connections should be uniformly distributed between the Block Stations.
3. Warning Bells or Hooters Operated by Approaching Train.						
Within or Outside Station Limits	Should be provided	Should be provided	Should be provided	Should be provided	Should be provided, where Level Crossing is Outside the Station limits in all Suburban Sections and Non-suburban Sections provided with Automatic Block Signalling Territories.	Provision of warning bells operated by Approaching Trains should be confined to Interlocked Level Crossing Gates only. Hooters shall be provided, where ever power supply is available.
4. Type of Lifting barrier						
a) Within or Outside Station Limits	Electrically Operated Lifting barrier	Electrically Operated Lifting barrier	Electrically Operated Lifting barrier	Electrically Operated Lifting barrier	Electrically Operated Lifting Barrier in Suburban Section.	In Non-suburban Section, Electrically Operated Lifting Barrier be provided, where Power Supply is Reliable.
5. Approach Locking						
	(i) To be provided in Suburban Section (ii) Dead Approach Locking with Timing of 30 secs in other sections.				(i) To be provided in Suburban Section. (ii) Dead Approach Locking with Timing of 30 secs in other sections, where Electrically Operated Lifting Barriers are provided.	

My Dear Jain,

Sub : Thrust on Safety at Level Crossings - Comprehensive Instructions :

- Ref: (i) Board's letters No. 2003/CE-I/LX/59 dt. 11.06.2003 & 21.06.2006.
 (ii) Board's letter No. 2006/CE-I/LX/WP dt. 10.06.2008.
 (iii) Board's letter No. 77/W-3/SG/LX/2 dated 16.3.1979.
 (iv) Board's letter No. 2001/CX-I/LX/AC/01 (data) dated 25.09.2002.
 (v) Board's letter No. 2007/CE-I/LX/WP/Progress dated 14.06.2007
 (vi) Board's (CRB) letter No. 2007/Safety-1/22/1 dt. 02.04.2007.
 (vii) Board's (CRB) letter No. 2006/Safety(A&R)/3/13 dt. 07.11.2006.
 (viii) Board's letter No. 2006/CEI/Misc.-2 (RUBs) dated 01.11.2006.
 (ix) Board's letter No. 2006/CE 1/Misc.-2 (RUBs) dt. 10.04.2008.
 (x) Board's (CRB) letter DO No. 2004/Safety-1/5/3 dt. 28.06.2004.
 (xi) Board's letter No. 2003/Safety-1/5/3 dt. 19.06.2003.
 (xii) Board's letter No. 2009/Safety-1/5/3 dt. 05.05.2009.

Safety Performance of Indian Railways continues to get seriously affected due to accidents at unmanned level crossings. These accidents even though caused primarily due to negligence of road users, constitute a major component of overall railway accidents and casualties therein. I had been emphasising upon Railways to draw up their safety action plan for undertaking reduction in number of unmanned level crossings with a missionary zeal. With increase in the numbers of manned level crossings, I find that on some stations even upto 7 to 8 manned-Gates are connected on telephone and co-ordination of the Station Master simultaneously with all these level crossings becomes difficult and time consuming. This reduces line capacity as a lot of time is wasted in ensuring closure of the gate before allowing passage of the train. Simultaneously, it also increases the barrier closing time which is again detrimental to both, train operations and to road traffic. Emphasis is, therefore, to be given to identify crossings having insignificant use for closure and to combine crossings in close proximity by diversion/merger of road traffic. Further it becomes important to process for elimination of manned and unmanned level crossings by constructing 'Limited Use Subways' and "Normal Height Subways" wherever feasible. I would, therefore, like your Railway to specifically focus on following :-

(1) Periodical Census of Traffic at all Level Crossings: Conduct a census of traffic at all Level Crossings periodically, and at least once every three years, as advised vide Board's letters under reference (i) above. This will provide an action plan for manning, interlocking and provision of grade separators.

(2) Manning of Level Crossings: Board has laid down the revised manning criteria vide letter under reference (ii) above. Out of target of manning 10 level crossings on your Railway, only 2 have been manned in the year 2008-09. Standing committee on Railways has also made critical comments on Railways lackadaisical approach on slow manning of level crossings. Manning of level crossings needs to be taken up on high priority. Feasibility of exchange of private numbers by the Station Master with all the Gateman in case of a large number Gates connected to one station, has also to be kept in mind, while deciding for manning of level crossings.

(3) Provision of Lifting Barriers and Basic Infrastructure at Level Crossing Gates: Vide Board's letters under reference (iii), (iv) & (v) above, the priority for provision of lifting barrier and to ensure "Basic Infrastructure" at unmanned level crossing gates was advised. This needs to be followed up.

(4) Interlocking of busy LC Gates : Vide Board letter under reference (iv) above, all level crossing gates in Special, 'A' Class & 'B1' Class will be interlocked/signalled. Interlocking of busy LC gates, especially those having very high TVUs, need to be taken on high priority.

(5) Closure of Level Crossings by Merging/Combining with adjacent one's : Vide Board's (CRB) letter under reference (vi) & (vii) above, there has been emphasis on closure of Level crossing by diverting the traffic and merging/combining of unmanned (and/or manned) level crossings to adjoining one's. Zonal Railways were advised to approach officials of Panchayat and of District Administration with definite action plan for gates in close proximity within a km which can be closed by diverting road traffic to the adjoining gate for which even a small stretch of road, if required may be constructed. Once Level crossings are merged, even up-gradation of some of these may become justifiable and the advantage thus gained should be explained to the local authorities. Railways may also de-man an existing level crossing as per policy, advised vide Boards letter under reference (viii) above, in case the TVU level falls below 80% of the value of the revised criteria laid down for manning.

(6) Replacement of LC Gates with ROBs /RUBs : At present, a total of 15 ROBs/RUBs on cost sharing basis have been sanctioned in your Railway and only 3 ROBs/RUBs have been completed in last year. Close co-ordination with the State Govts., NHAI etc. may be ensured to expedite these works.

(7) Replacement of LC Gates with Limited Height Subways : Vide Board's letter under reference (viii) above, it was decided to eliminate, wherever possible, unmanned/manned level crossings by providing 'Limited Height Subways'. A total 6 Nos of limited height subways have been sanctioned on your Railway last year. Out of the 5 limited height subways, targeted in the year 2008-09, your Railway has not completed even a single one. This needs to be followed up.

(8) Replacement of LC Gates with Normal Heights Subways : Vide Board's letter referred (ix) above, it was decided to eliminate, wherever possible, unmanned/manned level crossings by providing 'Normal Height Subways' at locations of manned level crossings, or where the unmanned level crossings have qualified for manning, as per prevailing criteria of manning, and are technically feasible. This needs to be followed up.

(9) Organising Public awareness Campaign to Educate Road Users and launching Safety Drives etc. : Vide Boards letter under reference (x), (xi) & (xii) above, it was emphasised for educating road users and organising intensive social awareness campaigns through various media like newspapers, TV, Radio etc. Also, vide Boards letter under reference (xi) & (xii) above, it was advised to conduct safety drives and ambush checks etc. at unmanned level crossing. This needs to be followed up.

Targets fixed for the year 2009-10 for the items mentioned above should be met with. You may therefore, initiate action to sensitise the concerned PHODs and also keep me advised of the progress through safety MCDOs.

With best wishes,

Yours sincerely,
(S.S. KHURANA)

Shri A.K. Jain,
General Manager,
South Eastern Railway, Kolkata

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2000 / Safety (A&R) / 19 / 39 Pt

New Delhi, dated : 19.12.2008

**The General Manager
Northern Railway,
North Central Railway,
North Eastern Railway and
North Western Railway**

Sub : Working Instructions for Temporarily Engineering Manned Level Crossing Gates during fog, non-interlocked, not provided with Telephone with normal position closed to road traffic.

Ref : Boards Instructions issued vide letter No. 2006 / CE-I / LX / WP dated 10.06.2008.

Vide above mentioned letter, Railway Board had issued directions for temporary manning of unmanned level crossing gates which have TVUs > 1000 during fog. Gate working instructions for closing/opening the LC Gates as drafted at Board's level and are circulated herewith, as Annexure to this letter, for implementation during the period of temporary manning of such LC Gates, during the foggy season. The Divisions may incorporate the Gate Working instructions as an addendum to the relevant Station Working Rules where applicable.

These instructions shall stand applicable on remaining Zonal Railways where such level crossing gate exist.

Please ensure and intimate the compliance accordingly.

Encls: As above.

(M.N. Ojha)
Director / Safety
Railway Board

Annexure to Letter No.2000 / Safety (A&R) / 19/39 Pt. dated : 19.12.2008

Working Instructions for Temporary Engineering Manned Level Crossing Gates during fog, non-interlocked, not provided with Telephone with normal position closed to road traffic.

- (i) (a) The normal position of the gate shall be closed to road traffic.
- (b) Speed barriers at approach of LC at 6 metres from fencing line be provided by Railway to a prescribed design, including precast concrete elements covered by bitumen, till such time the state authorities provide standard rumble strips.
- (c) The gate shall be manned by trained personnel (gateman or gangman) in single or split shift (morning / evening).
- (d) The Gateman so posted shall also be given adequate training by the SSE/SE (P.Way) in the working methodology.
- (e) The gateman shall be provided with a chain with a red coloured illuminated disc STOP Board to close the gate and secure it with a padlock to the gate post to restrict the entry of the road traffic. The gateman shall also intermittently sound a mechanical hooter.
- (f) The Gateman shall be provided with LED torch which shall have amber colour beam on both directions (UP/DN i.e. front and back side) convenient for single line section and also double line section to warn the train Loco pilot(s). He shall show flickering (on/off) beam to the train Loco pilot approaching the LC. The SSE / SE (P.Way) shall train the gateman in the use of the LED torch.
- (g) Suitable resting / sitting place shall also be created for the Gateman to provide him with adequate visibility of road and train.

- (ii) Before opening Gate to allow road traffic to pass :
- (a) The Gateman shall ensure by looking out for any approaching train/headlight of the train, and/ or by listening to the engine whistle that no train is approaching the gate from either direction.
 - (b) The gateman, before opening the gate, shall plant a red banner flag/red lamp at 5 metres away from the Gate towards both sides in case of single line and on approaching side only in case of double line.
 - (c) The Gateman shall close the gate immediately after passing the road traffic and thereafter remove red banner flag / red lamp.
-

GOVERNMENT OF INDIA (Bharat Sarkar)
MINISTRY OF RAILWAYS (Rail Mantralaya)
(RAILWAY BOARD)

No.2000/Safety/A&R/19/13/Pt.-I

New Delhi, Dt. 14.11.2008

**General Manager,
All Indian Railways.**

Sub: Normal Aspect of Level Crossing Gates and Manning of Unmanned Level Crossing etc.

The existing powers to change the normal aspect of Level Crossing gates from closed to open to road traffic with the conditions stipulated in Item No. 9(a) of Annexure 9/1 para 904 of IRPWM (Second Reprint 2004) lies with D.R.M's with the approval of Chief Engineer and Chief Safety Officer of Zonal Railway. Also, as per existing instructions, all the proposals for Manning manned Level Crossing Gates should be processed in consultation / association with Chief Safety Officer of the Railway.

With the post of Chief Safety Officer becoming multidisciplinary, Board (MT & ME) have decided that the work of drafting Station Working Rules, counter signing Gate Working Instructions and to consider change of normal aspect of LC gates either closed or open to road traffic, along with proposals for manning unmanned Level Crossing Gates and inter locking of Gates etc. earlier dealt with by the Sr. DSO's on Divisions and by CSO's in Headquarters are now to be dealt with by Sr. DOM's on Divisions and by COM's in Headquarters of Zonal Railway.

Board (MT & ME) have accordingly decided following changes in IRPWM (Second Reprint 2004) and para (c) of Board's letter No. 2003/CE-I/LX/59 dt. 11.06.2003 :

- (i) The existing Note given at the bottom of Item No. 9(a) of annexure-9/1 para 904 of IRPWM (Second Reprint 2004) should be replaced by the following :-

"The above decision should be taken personally by DRM, approved by P.C.E./C.E. (Co-ordination) and C.O.M. and position reviewed every two years.

- (ii) The existing para (c) of Board's letter No. 2003/CE-I/LX/59 dt. 11.06.2003 and the relevant sub para under para 924(b)(i) mentioned in correction slip No. 100 to the IRPWM (Second Reprint 2004) should be replaced by the following :-

"All proposals for manning of unmanned level crossings should be proposed in consultation / association with the Chief Operations Manager of the Railways".

The Advance Correction Slip to IRPWM (Second Reprint 2004) effecting above changes is being proposed and will follow. Railways are advised to implement the above changes.

**(Balak Ram Negi)
Joint Director (Safety)
Railway Board**

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2007 / Elect (G) / 180 / Misc / PCDO / Pt.-I

Dated 18.09.2008

Chief Electrical Engineers
Central Railway, Mumbai
North Western Railway, Jaipur,
East Coast Railway, Bhubaneswar,
Southern Railway, Chennai,
South Central Railway Secunderabad,
South Western Railway, Hubli,
Western Railway, Mumbai.

**Sub : Electrification of Manned level crossing by Non conventional energy source
with hybrid system constituting of wind and solar energy.**

(1) Indian Railways is a major consumer of electricity. The Railways are totally dependent on the grid for supply. It is possible, for the Railways to reduce their electricity costs by using wind energy, Wind energy has been making rapid strides both within the country and outside in meeting the growing requirements of energy and electricity. Wind energy is now a commercially proven technology and is fastest growing source of energy all over the world. This technology essentially harnesses the wind resources for electricity generation wherever it is available. The wind potential is particularly high in states of Tamil Nadu, Andhra Pradesh, Karnataka, some part of Maharashtra, Gujarat and Rajasthan in India. As wind energy uses green fuel, there is a potential of earning additional revenue in form of carbon credit that could accrue from production of wind energy from wind farm set up.

(2) SCR has recently electrified one of Level Crossing by using hybrid technology (solar + wind mill). The complete LC gate has been electrified with LED lights which consumes less power and give better illumination. These lights work from dusk to dawn automatically. **The wind energy supplements charging particularly in rainy season when solar power is not available.**

(3) Based on SCR experience it is proposed that nominated Zonal Railway must gain experience by providing hybrid system consisting of solar and wind at 3 locations each on trial basis for electrification of LC gate, or wayside halt stations etc.

This is issued with the approval Board (ML).

(R.K. Jain)
Director Electrical Engg. (PS)

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

No. 2006/CE-I/MISC-2 (RUBs)

Dated 1.11.2006

The General Manager,

- | | |
|---|--|
| 1. Central Railway, Mumbai | 9. North Western Railway, Jaipur |
| 2. Eastern Railway, Kolkata | 10. Southern Railway, Chennai |
| 3. East Central Railway, Hajipur | 11. South Central Railway, Secunderabad |
| 4. East Coast Railway, Bhubaneswar | 12. South Eastern Railway, Kolkata |
| 5. Northern Railway, New Delhi | 13. South East Central Railway, Bilaspur |
| 6. North Central Railway, Allahabad | 14. South Western Railway, Hubli |
| 7. North Eastern Railway, Gorakhpur | 15. Western Railway, Mumbai |
| 8. Northeast Frontier Railway, Guwahati | 16. West Central Railway, Jabalpur |

Sub : Elimination of Level Crossings by construction of 'Limited Use Subways'.

Some Zonal Railways had suggested that they can eliminate some of the unmanned/manned Level Crossings by constructing '**Limited Use Subways**'. It has been pointed out that at many locations, the traffic consists of light vehicles, two wheelers etc. which can be catered to by providing subways of limited height which are economical. It is seen from data provided by Railways that '**Limited Use Subways**' for single line track and 2 lanes roadway would cost in the range of Rs. 35 to 45 lakhs. It is further noted that GMs have been delegated powers to sanction safety works at level crossings upto Rs. 50 lakhs.

The matter has been considered in Board. It has been decided that Railways may identify such unmanned/manned level crossings which can be eliminated by construction of limited use subways. However, this should be done very selectively with the personal approval of General Manager at critical locations based on one or more of the following considerations :

- 1) Safety Consideration: Accident vulnerable LC locations where visibility is poor and elimination of level crossing will increase safety.
- 2) Reduction in LC numbers: Elimination of level crossing will yield substantial operational benefits e.g. section where no. of level crossings is large or suburban sections.
- 3) Site feasibility: Embankment height (3 m.) is adequate and will not allow collection of water under the bridge and surroundings, water table is low and approach road is feasible.
- 4) TVUs: Locations where TVUs are less but have potential of getting manned or have already qualified.

Typical internal dimensions can be: height = 3.6m, roadway width = 4.0m, and in no case the internal clear height be less than 2.5m, Height barrier shall be put at the approaches.

However, the normal procedure of getting undertaking of District authorities for closure of level crossings and CRS sanction as per rules shall be followed. District Authorities may also be asked to give advertising rights on the approaches, etc. to Railways. The works shall be charged fully under Plan Head - 30 - Road Safety Fund - Road over Bridge/Road under Bridge works.

General Managers may sanction such works selectively under their powers for sanction of 'Safety works of Level Crossings', upto Rs. 45 lakhs.

Individual works with cost over Rs. 50 lakhs shall have to be proposed under Works Programme with full justification, cost estimate, drawings & requisite undertakings to Board.

Notwithstanding the powers to enhance and accept Revised Estimate Costs, it shall be ensured at GMs level or by the nominated PHOD that the final/Revised Estimates do not exceed Rs. 50 lakhs at any stage, for which officers concerned shall be answerable in personal capacity.

This letters issues with the concurrence of the Finance Directorate of Ministry of Railways.
Please acknowledge receipt.

(J.S. Sondhi)
Ex. Director CE (RC & F)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2000 / Safety / A&R / 19 / 13 / Pt.-I

New Delhi, Dt. 4.11.2003

The General Manager (Safety) / OSDs
All Indian Railways,
Konkan Railway Corp.
R.E. Allahabad
Metro Railway, Kolkata

Sub : Working instructions for manned level crossings.

Ref. : Board's instructions of even number dated 08.05.2002.

A number of reservations have been expressed regarding feasibility of implementation of instructions concerning operation of L.C. Gate. The matter has been considered and following clarifications are issued :-

- (i) Railway Board's letter No. 2000/Safety(A&R)/19/39 dated 08.05.2002, primarily contains general guidelines and modifications thereon can be done by railways depending on local needs and conditions without contravening any of the provisions under G&SR.
- (ii) Placing of banner flag across the track :-
The placement of banner flag across the track has to be ensured only when the gate is kept in open condition at non-interlocked level crossings and during emergencies or obstruction on track at other types of gates. **(Item 3(i) of 1.5 has to be implemented during emergencies).**
- (iii) Exchange of Private Numbers at Interlocked Gates :-
It is not necessary to exchange private numbers for operation of gates in case of Engineering and Traffic level crossing gates which are interlocked with signals and are provided with stop signals. However, gateman should be **intimated** in advance by the ASM, Switchman, Cabinman about the movement of the train on the section, **(Annexure-I item 2(i), (ii), Annexure-II item(i), may be amended suitably while framing working instructions for specific gates).** The title (Item 2) may be read as; **intimation to gateman;**
- (iv) Permission of Station Master for opening the gate once closed :-

[Annexure V - Item 2 (vi), Annexure IV - Item 2 (v)] (Annexure - III Item 2 (v) - Regarding working of non-interlocked Engineering and Traffic Level Crossing Gates, with normal position **Open** or **Closed** to road traffic, guidelines should be read in totality and together for all the steps to be taken. Gate once closed can be opened by the gateman (after passage of trains/train or change in planning of train movement etc.) with the permission of the Station Master, as the need of opening is known to gateman according to road traffic to be cleared. Obviously, it can be done only after obtaining private number from the controlling Station Master who will ensure that there is no train movement towards the level crossings.

These contents should be brought to the notice of all concerned.

Receipt of this letter may please be acknowledged.

This disposes off references made by Northern Railway, South Eastern Railway, South Central Railway and Southern Railway.

(Syed Nishat Ali)
Director / Safety-II
Railway Board.

CHAPTER – IV

General instructions for all types of Manned Level Crossing Gates

Following general instructions are meant for all types of Manned Level Crossing Gates.

A. Description of the level Crossing Gate :

1. Number of L.C. Gate _____
2. Engineering or Traffic Gate _____
3. Under control of PWI / SM _____
4. Location at KM _____
5. At station _____
6. In between stations _____
7. BG / MG / NG _____
8. Single line / Double line / Multiple line _____
9. Normal position _____
10. Interlocked / Non interlocked _____
11. Means of interlocking _____
12. Provision of Gate signal at KM _____
 - (i) UP line _____
 - (ii) DN line _____
13. Signaling arrangements _____
14. Means of communication - Telephone / Bell etc _____
15. Width of level crossing gate _____
16. Type of road (NH / SH / Others) _____
17. Name of the road _____
18. Metalled / Non-metalled _____
19. Approach road _____
20. Width of road _____
21. Angle of road crossing (in case of skewed gate) _____
22. Road gradient, if any _____
 - (i) North / East side _____
 - (ii) South / West side _____
23. Road alignment (straight / curve) _____
 - (i) North / East side _____
 - (ii) South / West side _____
24. Provision of height gauges _____
25. Type of barriers _____
26. Length of check rails _____
27. Road surface in between L-Xing gates _____
28. Length of rumble strip / speed breakers _____
29. Road signs _____
30. Speed breaker indication board _____
31. TVU on _____
32. Census next due on _____
33. Demarcation for placement of detonators _____
34. No. of Gateman working _____
35. Nearest Railway Medical Assistance _____
36. Nearest Private Medical Assistance available (if any) _____
37. List of equipment available Yes / No _____

B. Equipment :

<u>Items</u>	<u>Quantity / Numbers</u>
1. Hand Signal Lamp Tri-colour	3 (5 on Quadruple line or twin single line)
2. Hand signal flag, Green	1 Mounted on stick
3. Hand signal flag, Red	3 (6 on Quadruple line or twin single line and 7 in case Hexaple section mounted on sticks)
4. Banner flag, Red	3 (5 on quadruple line or twin single line)
5. Posts for exhibiting red banner flags	2 (4 in quadruple line or twin single line and 5 on hexaple section)
6. Spare chains with padlocks	2 with 'stop' mark
7. Detonators	10 in tin case
8. Gate lamps	2
9. Tommy bar	1
10. Mortar pan	1
11. Spade / Fowrah	1
12. Rammer	1 (in case of asphalted road, this may not be provided)
13. Pick - axe	1 (in case of asphalted road, this may not be provided)
14. Tin case for flags	1
15. Can for oil	1
16. Water pot / bucket	1
17. Canister for muster roll	1
18. Set of spare spectacles of Gateman wearing glasses.	1
19. Board demarcating protection of level crossing gate diagram in case of obstruction on gate	1
20. Basket	1
21. Whistle	1
22. Wall clock	1
23. Small size chain to be used in case of failure of Gate Boom / Leaf.	

NOTE:- At Level Crossings with multiple lines, the number of hand signals, detonators and banner flags shall be increased suitably. (Ref. : SR. 16.02.01)

C. Records to be kept at gate lodge :

In addition to the above equipment, following records shall also be kept at the gate lodge –

1. Gate working instructions in Hindi / English.
2. Gate working instructions in local vernacular language.
3. Gateman Rule Book in local vernacular language.
4. List for tools and book.
5. Duty Roster.
6. Certificate for working as Gateman.
7. Bio-data particulars of Gatemen including date of passing vision test, initial / refresher course, safety camp, etc.
8. Accident Register.
9. Record of last census of road traffic at level crossing gate.
10. Public complaint book.
11. Inspection book.
12. S&T Register in case of Interlocked Engineering Gate.

D. The Cabin-operated level crossing gates shall be provided with the following equipments and books.

1. One red and one green hand signal flag.
2. 2 hand signal lamps.
3. 2 red banner flags with side props.
4. 10 detonators in a case.
5. 2 gate lamps.
6. 2 Chains with pad locks for locking the gates.
7. 2 pad locks for the gate lamps.
8. 2 staves for fixing hand signal lamps.
9. Gate working rules.
10. Level Crossing inspection book.
11. Complaint book.
12. A small size chain for use in case of failure of gate boom / leaf lock.

(Ref. : SR 16.02.04)

E. Mode of operation

Detailed mode of operation for opening and closing the gate shall be provided in the respective Station Working Rules and Gate Working Instructions incorporating local operational requirements. When level crossing gate is required to be opened for passage of road traffic, the gateman must first open the gate farthest away from approaching road traffic and then open the gate on the side nearest to the approaching road traffic.

F. Duties of Gateman :

(1) Alertness :

The gateman shall be alert and be prepared to take immediate action, should danger be apprehended. Keys of the gate shall be in his personal custody.

(2) Position during passage of trains :

During passage of trains, gateman will stand in the manner indicated below :—

- (i) Gateman will stand attentively in front of the gate-lodge facing the approaching train.
- (ii) In day time, gateman shall hold red and green flags furled up on separate sticks in right and left hands respectively.
- (iii) In night time, gateman shall hold lighted hand signal lamp with **white light pointing towards him.** [Ref. : A&C 88 of SR 16.04.01]
- (iv) He shall keep the whistle slung around his neck from a cord.

(3) Routine duties of Gateman :

He shall—

- (i) ensure that red banner flag is placed across the track whenever the gate is kept in open condition at non interlocked level crossings and during emergencies or obstructions on track at other type of gates.
- (ii) ensure that gate lamps and lamps of all gate signals are lighted and kept burning continuously from sunset to sunrise.
- (iii) perform his duties strictly according to the duty roster and shall not leave the gate unless reliever arrives and takes charge of it. However, if it is necessary to leave the gate in an emergency, he must close and lock the gates against road traffic, before leaving the gate.
- (iv) Except where otherwise prescribed under special instructions, he shall observe all passing trains and be prepared to take such action as may be necessary to ensure safety of trains.

- (v) watch all passing trains and keep sharp look out for any unusual conditions, like hot axle, hanging chains, hanging battery, any vehicle/wagons/train/battery box on fire, shifted load, falling material like brake blocks, brake beams, safety brackets, vacuum cylinder or any other situation endangering safe running of trains.
- (vi) also be prepared to repeat any signal which guard may give to LP on walkie-talkie or in any other way.
- (vii) If lifting barriers / leaf gates get damaged or becomes out of order, gateman shall use the spare chain with disc and padlocks for securing the gate against road traffic.
- (viii) report to the nearest Station Master, Gangmate or Permanent Way Inspector any defect in his gate or apparatus pertaining to it, as soon as possible.
- (ix) In the event of gate signal becoming defective the gateman shall take all necessary action to keep the signal in the 'ON' position.
- (x) at the gate, where signal have become defective, the gateman shall close and lock the lifting barriers/leaf gates on sighting a train and hand signal or pilot the train pass the gate. In such case he should inform the driver to report the defect at the next station.
- (xi) wear badge and prescribed uniform while on duty at level crossing gate.
- (xii) ensure that he is having competency certificate in his possession while on duty.
- (xiii) work the gate as per Gate Working Instructions and be well conversant with these instructions.
- (xiv) ensure that equipments supplied at the gate are in good order and ready for immediate use.
- (xv) see that the channel for the flange of the wheel is kept clear.
- (xvi) keep the road surface well watered and rammed in case of unmetalled roads,
- (xvii) be vigilant to see that inconvenience to road users due to closure of gate should be to the minimum possible extent.
- (xviii) on electrified sections, shall watch that road vehicles / animals passing through gate are within the height is gauge provided on either side of the level crossing gate.
- (xix) prevent trespassing by persons or cattle to the maximum extent.

(4) Action in case of unusual occurrence on train :

In case gateman observes any thing unusual with a passing train, he shall take the following action:

- (i) He shall take prompt action to warn the LP / guard of passing train by showing red flag by day and red lamp by night.
- (ii) He shall simultaneously try to draw the attention of the LP / guard by whistling continuously, shouting, gesticulating, throwing ballast on the brake van or by any other means.
- (iii) If LP / guard fails to take notice, he shall immediately inform the Station Master/ Switchman / Cabinman, if connected on telephone, to take appropriate action, under exchange of private number,
- (iv) In case of train parting, gateman shall not show stop hand signal but shall show prescribed signal for train parting. He shall endeavor to attract the attention of the LP/guard by whistling continuously, shouting, gesticulating and by raising both hands vertically above, quickly parting them and bringing them together in repeated Up and Down motion as high and as low as possible,
- (v) In case the train does not stop, gateman shall immediately inform the Station Master/ Switchman / Cabinman, on telephone to take appropriate action, under exchange of private number.

(5) Action in an emergency at the level crossing gate :

- (i) In case of an obstruction at the level crossing gate, gateman shall maintain the gate signals, if any, in the 'ON' position.
- (ii) Thereafter, if he is unable to remove the obstruction, he shall immediately advise the Station Master / Switchman / Cabinman on duty, if connected by telephone, regarding the defects / obstruction at the gate, under exchange of private number.
- (iii) If there is no response from the Station Master / Switchman/ Cabinman after two or three attempts, he shall first protect the gate and then inform on phone.

The gateman shall protect the line as under :—

(A) On Double line :

- (i) If both lines are obstructed the gateman shall plant a red banner flag by day and a red light by night 5 meters away on posts duly provided for the purpose. He shall first protect the line on which a train is expected first.
- (ii) Then he will similarly plant the other red banner flag by day and red light by night on the other line 5 meters away from the site of obstruction.
- (iii) He shall, thereafter, close and lock the gates.
- (iv) At level crossings provided with telephones, the Gateman shall, if time permits, inform the Station Master/Cabinman about the obstruction and ascertain the position of trains, after he has taken action as per clauses (i), (ii) and (iii) above.
- (v) In Automatic Block Signalling territory, the gates of which are inter-locked with Semi-Automatic Gate Stop signal as per sketch 9 of GR 3.17(1), the Gateman shall at once take steps to extinguish the 'A' marker of the Semi-Automatic Gate Stop signal by operating its control lever/switch where provided. But at such of the level crossings where the control of the 'A' marker is only through the closing of the boom, the Gateman of such level crossings, shall close the level crossing against thoroughfare by using spare gate leaves, if any or by using the chains and pad locks.
- (vi) Gateman shall then proceed to protect the gate along with detonators and red flag by day and red hand signal lamp by night.
- (vii) Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night on the line on which a train is expected to arrive first, to a point 600 meters on BG and place one detonator on the line. Then he shall proceed to a distance of 1200 meters on BG from the level crossing gate and place 3 detonators on the track 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.

In Automatic Signalling System, he shall place one detonator on the track at a distance of 90m and two detonators 10m apart at a distance of 180m from the level crossing.

- (viii) Therefore, he shall proceed on the other line, showing red hand signal, similarly place detonators as described in para (vii) above and return to the site of obstruction, picking up the intermediate detonator on his way back.

NOTE: In case only one line is obstructed, the aforesaid protection need be done for the obstructed line towards the direction from which normally trains approach the level crossing.

- (ix) Having returned to the gate, he must then take steps to remove the obstruction and warn the LP of the approaching train.
- (x) In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far as he can go.
- (xi) Then he shall warn the LP/Motorman and stop the approaching train by waving his red flag by day and red hand signal lamp by night repeatedly.

(B) On single line :

- (i) Gateman shall plant a red banner flag by day and a red light by night 5 meters away on posts duly provided for the purpose. He shall first protect in the direction from which a train is expected to arrive first.
- (ii) Then he will similarly plant the other red banner flag by day and red light by night towards the other direction 5 meters away from the site of obstruction.
- (iii) He shall, thereafter, close and lock the gates.
- (iv) At level crossings provided with telephones, the Gateman shall, if time permits, inform the Station Master/Cabinman about the obstruction and ascertain the position of trains, after he has taken action as per clauses (i), (ii) and (iii) above.
- (v) In Automatic Block Signalling territory the gates of which are inter-locked with Semi-Automatic Gate Stop signal, the Gateman shall at once take steps to extinguish the 'A' marker of the Semi-Automatic Gate Stop signal by operating its control lever/switch where provided. But at such of the level crossings where the control of the 'A' marker is only through the closing of the boom, the Gateman of such level crossings, shall close the level crossing against thoroughfare by using spare gate leaves, if any or by using the chains and pad locks.
- (vi) Gateman shall then proceed to protect the gate along with detonators and red flag by day and red hand signal lamp by night.
- (vii) Gateman shall proceed exhibiting red flag by day and red hand signal lamp by night on the direction on which a train is expected to arrive first, to a point 600 meters on BG and place one detonator on the line. Thereafter he shall proceed to a distance of 1200 meters on BG from the level crossing gate and place 3 detonators on the track 10 meters apart. Having thus protected the line he shall return to the level crossing gate picking up the intermediate detonator on his way back.
In Automatic Signalling Section he shall place one detonator on the track at a distance 90m and two detonators 10m apart at a distance of 180m from the level crossing.
- (viii) Therefore, he shall proceed on the other direction, showing red hand signal, similarly place detonators as described in para (vii) above and return to the site of obstruction, picking up the intermediate detonator on his way back.
- (ix) Having returned to the gate, he must then take steps to remove the obstruction and warn the LP / Motorman of the approaching train.
- (x) In case the gateman observes or hears a train approaching when he is still on his way to protect and before he reaches the stipulated distance to place detonators, he shall place detonators on the line at a distance as far as he can go.
- (xi) Then he shall warn the LP/Motorman and stop the approaching train by waving his red hand signal flag by day and red hand signal lamp by night repeatedly.

(C) On triple line section between Tikiapara to Panskura :

The procedure for protection as described under sub-rule (A) above shall be applicable for the two outer-most tracks and the procedure described under sub-rule (B) above shall be applicable for the middle line.

Other action to be taken by Gateman :

- (i) At night gateman shall light two hand signal lamps and take action to exhibit red light and protect the line as described in sub paras (A), (B) and (C) above.
- (ii) If the gate is broken by a road vehicle which is fouling the track, or if lifting barriers / leaf gates or any other part of the gate foul the track, or if there is any other obstruction at the gate, the gatemen shall take immediate action.
- (iii) He shall note down the particulars of the road vehicle, vehicle number, name of the driver, owner and relay these details to the nearest Station Master / Switchman / Cabinman or Permanent Way Inspector regarding the particulars and obstructions at the level crossing gate, through messenger or other means available.

[Ref. : Rly. Bd's letter No. 2000/Safety (A&C)/19/39, dt.- 8/5/2002 & relevant SR's of SER]

CHAPTER – V

Working procedure of Level Crossing Gates with Electric Lifting Barrier

OPERATION OF ELECTRIC LIFTING BARRIER :

1. Normal Mode-Power Available

- (i) Ensure that power supply is available.
- (ii) Put the Mode selector switch to **AUTO** position.
- (iii) The '**Power**' Indicator **LED** will glow.
- (iv) For closing the Barrier together, press the **CLOSE** Push Button (**RED**) continuously till the Barriers come down and get locked in the locking device.
- (v) As soon as the Barriers reach the closed position **AMBER LEDs** glow and on getting locked **RED LEDs** will glow indicating boom lock proving has taken place.
- (vi) When the Barriers are in the horizontal position press the **OPEN** Push Button (**GREEN**) continuously, both the barriers will start opening till they reach in the vertical position. Motors will automatically cut-off once the desired vertical angle has been achieved.

2. During Power Failure or failure to operate the gate with power

- (i) Insert the Crank Handle provided into the Barriers pedestal.
- (ii) Now Crank in the anti-clock-wise direction to open the Barriers. First the lock will open and then the barrier will start rising.
- (iii) Crank in the clock-wise direction till the barriers are fully closed. Keep cranking till the Locking take place.

NOTE:- Crank Handle to be kept in a sealed box.

3. Clearing of Signal

- (i) When signal is controlled from station – As soon as the lifting barriers are fully lowered, it gets locked. At this stage the gate key becomes free for extraction. The gate key thus extracted is inserted into the EKT & turned by which it gets electrically transmitted to the station & Signals can be cleared from the station. Once the movement is completed the gate key is transmitted back to the gate goomty where it can be extracted & inserted to open the gate.
- (ii) When signal is controlled from the gate goomty. – As soon as the lifting barriers are fully lowered, it get locked and the gate key becomes free to be extracted. The gate key thus extracted is inserted into the gate signal control panel at the gate goomty and then the required signal can be cleared. Once the train movement across the gate is completed, the gate signals can be normalised, gate key extracted from signal panel & inserted for opening the gate.

4. FAILURE OF THE GATE KEY WITH THE GATE IN CLOSED POSITION WHEN GATE KEY CANNOT BE EXTRACTED FOR OPENING THE GATE :

- (i) If the gate key cannot be extracted from the key transmitter, then Gateman must immediately inform the Station Master on duty on telephone, under exchange of private number.

- (ii) Emergency Key is available at the gate lodge; Gateman will take it out from the sealed box by breaking the seal and open the gate for road traffic after getting permission from on duty SM supported by Private Number.
 - (iii) The record of the date and time of breaking the sealed cover of Emergency Key Box shall be recorded and signed with reasons.
 - (iv) Thereafter, the gate must be treated as non-interlocked and procedure for reception/despatch of trains as prescribed for non-interlocked gates should be adopted.
 - (v) Station Master on duty shall issue a caution order to the driver of a departing train.
 - (vi) He shall also advise the Station Master at the despatching end, under exchange of private number, to similarly issue a caution order to the LP before despatching a train into the block section from his end.
 - (vii) Station Master will advise S&T staff responsible for maintenance of winch/gate leaves/ key transmitter to rectify the defect at the earliest.
 - (viii) Normal working will resume only after S&T staff repairs the winch/gate leaves/ key transmitter and issue reconnection / fit memo for the same.
 - (ix) After rectification, the Emergency Key shall be kept in the emergency Key Box and resealed by the S&T maintainer.
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CHAPTER – VI

SYSTEM OF WORKING AND PROTECTION TO BE ADOPTED IN THE EVENT OF FAILURE OF MANNED LEVEL CROSSING GATES

In the event of gate boom failure there is every possibility of occurrences of serious mishaps as piloting of trains continues to take place in the face of road vehicles attempting to cross the L/Cs, control being exercised by the Gateman only through application of a chain drawn across the road area of the L/C. It will be appreciated that all L/Cs with heavy road and rail traffic, where in movement of both road and rail traffic is required to be done necessarily by frequent fixing and removal of the chain at both ends is not a very practical option and is fraught with serious safety consequences.

In view of the aforesaid and notwithstanding the provisions enshrined in G&SR, the following procedures should be adopted with immediate effect on trial basis on all manned/interlocked L/Cs in the event of failure of the gate closing system.

- (1) GR 3.73 refers to the system of working to be adopted in the event of failure of gate signal, and not of the gate per se. The failure of the gate is covered under SR 16.06.04 only and, therefore, all cases of failure of gate should be dealt with in accordance with 16.06.04. (and now additionally in accordance with more restrictive procedure being introduced, the details of which are as under) :
- (2) Immediately, on receipt of information regarding the failure of the gate, which may be due to breakage of gate boom or any other reason the following action may be immediately taken.
 - (a) Two additional staff (TP in case of traffic gate or Gangman/Gateman in case of Engg gate) should be rushed to the failed L/C gate for assisting the Gateman in the performance of his duties. These persons will continue to remain on duty at the affected gate till such time the gate is rectified and normal working is restored.

N.B:- The above action, including ensuring availability of additional hands at the gate shall be the personal responsibility of the concerned branch officer.
 - (b) A caution order should be issued to Crew & Guard of all trains entering the affected section advising to stop, invariably, just short of the gate to ensure the status of the gate and proceed at a restricted speed specifically not more than 10 kmph until the whole of the train clears the gate (in the manner being done for clearance of caution orders).
 - (c) One DTI/PWI shall be deputed on duty at the gate to monitor and ensure the safe running of trains in the face of road traffic till such time the failure is rectified and normally restored

Note :

- (1) The technical possibility of an indication to the SM in the form of an audio-visual indication, regarding the securing of the gate through a chain may be explored.
- (2) Additionally a wire rope of proper length (5mm dia) with eyelets at both ends, should also be provided at the gate so that it can be fastened quickly across the gate posts.
- (3) These instructions shall remain in force till the receipt of confirmation of rectification of the boom/gate and the passage of train thereafter.

Source : GM / SER's instructions communicated vide No. GM/DRMs,
dtd. 28.03.2011

CHAPTER – VII

Other Important Provisions of G&SRs relevant to Level Crossing

GR 16.01.

Knowledge of Signals: No person shall be appointed to be a gateman unless he has a knowledge of signals.

SR 16.01.01.

Every gateman before he is put to work independently at particular level crossing, shall be tested by the SSE/SE/JE (P.Way) or Transportation Inspector as the case may be, to ensure that he has a thorough knowledge of the rules pertaining to the working of gate, gate signals, hand signals, detonators and other equipment provided for the gateman and also the rules pertaining to the protection of the line during an emergency and issued a certificate of competency in the form given below. The competency certificate shall be valid for a period of five years and revalidated after due test every five years. For level crossing within outermost stop signals for the station, the test shall be carried out by the Transportation Inspector.

Certificate of competency:

Certified that I have examined Sri _____ S/o _____
Designation _____ in the duties of Gateman. He is conversant in the working of the gates, gate signals if any, hand signals, detonators and other equipment provided at the gate. He is also conversant with the procedure to be adopted during abnormal conditions.

Gate at KM _____ Signature _____

Place _____

Designation _____

Date _____

SR 16.03.01.

- (a) All level crossing gates shall be so worked as to cause the least possible inconvenience to vehicular traffic consistent with safety.
- (b) In order to eliminate frequent and undue detention of road traffic at important level crossings, such gates shall not normally be closed for more than **10 minutes** at a stretch.
- (c) At level crossings which are provided with telephone, the Gateman, on receipt of information about a motor trolley being on line clear, shall not close the gates immediately, but shall keep a look out for the motor trolley and only when it is actually in sight shall close the gates. The same procedure shall also be followed by Cabinmen in the case of gates operated from the cabins.

SR 16.03.02.

- (a) Gates of manned level crossings whether these be situated inside or outside outermost stop signal shall be provided with lamps at night, which will show red to the road traffic approaching from either direction, when either gate is closed across the road. The lamps shall show white to the road when the gates are open to road traffic, and shall be so screened that they show no indication to approaching trains, whether the gates be opened or closed to road traffic.
- (b) Gates shall be painted white except in the case of lifting barriers, which shall be painted with alternate bands of yellow and black. In addition, each gate shall be provided with a disc not less than 0.6 m in diameter to furnish a clear indication to road users during day-light hours. The disc shall be painted red on both sides, irrespective of whether the gates are coupled or not.

SR 16.03.03.

- (a) (i) The mid-section gates of level crossings, which are interlocked with gate signals may normally be kept open to road traffic. Immediately after departure of the train, the Station Master/ Switchman/ Cabinman shall inform the Gateman over telephone connected at his end, the number, description and expected line of passage of the train at the gate.

- (ii) If the telephone is connected with the Station/Cabin at the receiving end, this advice shall be given by the Station Master/ Switchman/ Cabinman to the Gateman over telephone as soon as he receives train entering section advice from the dispatching station.
 - (iii) If the actual running time of the train from either end of the section up to the L.C. gate is less than, 10 minutes. Station Master/ Switchman/ Cabinman will convey this advice to the Gateman before obtaining / granting line clear.
 - (iv) It should be the duty of the Gateman to ensure that the gate is closed in time, so that there is no detention to the train or excessive detention to road traffic.
- (b) (i) In the case of level crossing situated within outermost stop signal where telephone communication is provided between the Gateman and Station Master/ Switchman/ Cabinman Private Number shall be issued by the Station Master/ Switchman/ Cabinman to the Gateman to close the gates. The Gateman shall, thereupon, closes the gates and confirm having done so by giving his Private Number to the Station Master/ Switchman/ Cabinman.
- (ii) For mid-section level crossings, the Station Master/SWM/Cabinman of the Station where telephone connection is provided will inform the gateman supported by a Private Number about the expected time of departure of UP/DN train from the stations on either side of the Block Section. Before taking 'OFF' last stop signal the SM/SWM/Cabinman shall ensure from the gateman that the gate is closed and shall obtain a Private Number on assurance. On getting this assurance the SM/SWM/Cabinman will then take 'OFF' the last stop signal.

(For Engineering manned Level Crossing gates, non interlocked, Provided with telephone with normal position "Open to Road Traffic.")

On single line section, gateman shall open the level crossing gate after complete passage of train from gate by ensuring the train with tail board / tail lamp / LVI.

The SM/SWM/Cabinman of the Station at the other end where telephone connection is not provided with the gate shall not take 'OFF' the last stop signal for the train to enter into the Block Section unless he gets the assurance, that the level crossing gate is closed from the SM/SWM/Cabinman of the station having telephone connection with the level crossing supported by a Private Number.

- (iii) The mid-section level crossing gate which is connected with telephone and normal condition is closed to road traffic will be worked as follow :
- (a) The Gateman must seek permission from Station Master /Switchman/ Cabinman for opening the gate.
- (b) Station Master / Switchman/ Cabinman shall ensure that there is no train movement in that section. Thereafter, Station Master / Switchman/ Cabinman shall give his Private Number to the gateman allowing him to open the gate for the purpose of clearing the road traffic.

(For Engineering manned level crossing gates, non-interlocked provided with telephone with normal position " Closed to Road Traffic".)

On single line sections, if the gate is required to be opened to pass the Road traffic, the gateman shall exchange private number with the SM and confirm that the train has passed completely from his gate, thereafter, the SM may allow the gateman to open the gate.

- (c) Suitable entries should be made by the Station Master/Switchman/ Cabinman in the Train Signaling Register/Cabin Operation Register, Private Number book, Log book in Red ink.
- (d) After passage of road traffic the Gateman shall close the gate and confirm this to Station Master/ Switchman / Cabinman under exchange of Private Number.
- (e) Before any train is allowed to enter the block section again, the Station Master/ Switchman/ Cabinman must ensure that the Private Number from the Gateman has been received in token of his having closed the gate.
- (iv) Private numbers are not required to be exchanged in case the level crossing gates are interlocked with gate stop signals or stop signals of the station. However, gateman should be intimated in advance by ASM/SWM/Cabin Master/Cabinman about the movement of the train on the section.

SR 16.03.04.

In the event of **failure of telephone communication between the Station and mid-section level crossing gate which is not protected by gate signal**, or of failure to get Gateman's acknowledgement over the phone, the following procedure shall be adopted for passing trains:

- (a) The Loco Pilot and the Guard of every train proceeding into the affected section shall be served with a caution order, giving the number and kilometreage of the level crossing and directing the Loco Pilot –
 - (i) To whistle frequently to attract the attention of the Gateman.
 - (ii) To approach the LC gate cautiously so as to be able to stop short of the gate in case the gateman is not available or exhibits a danger signal or does not show "green" signals towards his train. Should he find the gateman waving a "green" hand signal for his train to proceed, he may do so cautiously without stopping before the gate. However, should the Loco Pilot not find the gateman displaying a "green" hand signal towards his train, the procedure laid down in GR 3.73 (2)(c) shall be followed."
- (b) (i) While complying G.R. 3.73(2) (c) the LP shall stop his train short of the level crossing and shall ascertain if the Gateman is available and is apparently in a fit condition to continue his duty and the gates are closed. If so, the Loco Pilot shall arrange to advise the Station Master/Switchman/Cabinman, as the case may be, of the fact using the telephone provided at the gate. The Station Master on receipt of such an advice from the Loco Pilot shall discontinue issue of caution order to the following trains provided the acknowledgement of the Gateman is available over the telephone.
 - (ii) In the above circumstance, the Loco Pilot should not stop his train at the next station to advise the Station Master.
- (c) (i) If the Loco Pilot does not find the Gateman at the level crossing or if the Gateman is apparently unfit for duty and the gates are not closed, he shall depute his Assistant Loco Pilot, to close the gates and give proceed hand signal. In the absence of Assistant Loco Pilot, the Loco Pilot shall seek assistance of the Asst Guard or Guard of the train.
 - (ii) The Loco Pilot, after being hand signalled, shall pass the level crossing and stop clear of it by at least 2 bogie-length to pick up the Assistant Loco Pilot or Asst. Guard/Guard, as the case may be. The Railway servant deputed for closing the gate shall re-open it for road traffic after the passage of the last vehicle of the train.
 - (iii) If, however, the telephone is out of order or the Gateman is not available or is apparently unfit to continue his duty and intimation of the fact could not be given to the Station from the Gate, the Loco Pilot shall stop his train at the next station (even if it is through passing station) and give a memo to the Station Master indicating the condition of the Gateman, Gate and telephone.
 - (iv) The Station Master on receipt of the Loco Pilot's report regarding absence or unfitness of the gateman, shall advise the Station Master in rear, the Notice Station, the Section Controller, PWI, AEN concerned and the Gangmate of the nearest gang for immediate posting of a Gateman. He shall also inform the maintenance staff to attend and repair the telephone, if required. Issue of caution order should continue till normal working condition in the gate is restored.
- (d) Before giving line clear to a train, the Station Master shall advise the Station Master of the Station in the rear of the facts by message supported by a Private Number, and obtain his acknowledgement with a Private Number. The latter shall issue a Caution Order to the Loco Pilot as detailed in para (a).
- (e) Necessary entries shall be made in the Caution Order Register and Diary by Station Master at either end of the affected section. The Section Controller shall also keep a note in his chart indicating the action taken by him.

SR 16.03.05.

In the event of **failure of telephone communication between the Station and mid-section level crossing gate, which is protected by gate signal**, or of failure to get Gateman's acknowledgement over the phone, the procedure laid down in G.R. 3.73 shall be followed. In this case, there is no need to issue Caution Order to trains entering in to the affected section.

SR 16.03.06.

From sun-set to sun-rise and during thick, foggy weather, heavy rain or dust storm or at any other time when a clear view of an approaching train is not obtainable along the railway far 800m in either direction, all non-interlocked gates shall be kept closed to the road and locked and shall only be opened to pass road traffic when necessary. Extreme caution shall be exercised to ascertain that no train is approaching before opening the gates at such times.

SR 16.06.02.

In case of failure of Gate signal in the 'off' position, the Gateman shall at once close and lock the Gates across the road, place a detonator 90 metres away from the defective signal and renew it after the passage of every train. The Gateman may open the gates to pass road traffic only after the signal is so protected. If this condition happens at night or if it continues after dark, the green glass of the signal arm in question shall be so broken as to prevent a green light being seen by the Loco Pilot of an approaching train.

SR 16.06.03.

In either of the cases referred to in SRs 16.06.01 and 16.06.02 the Gateman shall also advise the fact over the telephone or through the Loco Pilot of a passing train or through a gangman to the Station Master of one of the adjoining stations, who in turn shall advise the signal maintainer and other concerned officials of the section for immediate rectification. The Station Master shall also arrange for issue of caution orders to the Loco Pilots of passing trains from both directions on the single line section or from the concerned direction on the double/multiple line section till the defect is rectified. Until the defect rectified, the Gateman shall pass the trains over the level crossing showing "Proceed" hand signal provided the Gates are closed and locked across the road traffic.

SR 16.06.04.

- (a) If a gate boom / barrier is damaged, the Gateman shall –
 - (i) Close the level crossing against the road traffic with chain and padlock immediately or before allowing the movement of train as the case may be,
 - (ii) Report the fact over telephone or through the Loco Pilot of a passing train or through a gangman to the Station Master/Switchman/Cabinman of the adjacent station and the nearest Gangmate.
- (b) The Station Master on duty on receipt of the above information shall arrange to issue caution orders to the Loco Pilots and Guards of all trains entering into the section.
 - (i) To whistle frequently.
 - (ii) To stop 30m, short of the level crossing, and be guided by the hand signal given by the Gateman.
- (c) The Station Master shall intimate the fact to the Station Master at the other end of the block section for issue of caution order with the similar instructions as mentioned in (b) above. The caution order shall continue to be issued till the defect is rectified. The Station Master shall also advise the Signal Inspector, PWI and other officials concerned for immediate rectification and other necessary action.
- (d) The Loco Pilots shall ensure that the level crossing is not obstructed and on being hand signalled by the Gateman, negotiate the level crossing cautiously.
- (e) Necessary entries shall be made in the Caution Order Register and Station Diary by the Station Masters at either end of the affected section.

SR 16.06.05.

In case of failure of locking arrangement of Gate Boom / Leaf, the gate boom or leaf should be properly secured by using a small chain and padlocked.

CHAPTER – VIII

Other Important Provisions of IRPWM relevant to Level Crossings

907 : “Normal Position of Gates” :

- (2) At all level crossings over which trains are required to pass, the normal position of gates may be as under –
 - (a) All level crossings in Special, A, B1 and B2 classes will be interlocked and protected by signals and kept normally open to road traffic, and may only be closed against the road traffic for the passage of trains or for any other Railway operation by taking off the signals.
 - (i) The gates must normally be kept open to road traffic and may only be closed against the road traffic for the passage of trains or for any other railway operation by taking off the signals.
 - (ii) The signals must be interlocked with the gates.
 - (b) Level crossings provided with gates and not protected by signals - The gates must normally be kept closed and securely fastened against road traffic and may only be opened for the passage of road traffic when it is necessary and safe to do so. The Railway Administration may under special instructions permit gates of level crossings not protected by signals to be normally kept open to road traffic prescribing the conditions under which they may be kept closed against road traffic for passage of trains or any other railway operation.
 - (c) The normal position of gates at level crossings between station limits shall be as sub-para (a) and (b) above, fixed station signals not being regarded as affording any protection unless the gates are interlocked with signals.
 - (d) Level crossings having heavy seasonal traffic - In case of level crossings having heavy seasonal road traffic with normal position of gates closed to road traffic, the Railway Administration may permit gates of such level crossings, to be kept open to the road traffic during the busy season, when road traffic is heavy, by issuing special instructions and prescribing the conditions, under which they may be kept closed to road traffic for passage of trains or any other railway operation. The special instructions should be incorporated in the working rules for the gates and stations concerned.
- (3) Gateman, where provided, shall at all level crossings other than those controlled by gates designed to close across the line, be prepared, wherever such level crossings be open to road traffic, to show a danger signal to any approaching train and for this purpose invariably keep a hand signal lit during night to show red throughout the period the level crossings is open to road traffic.

924 : Provision of Manning / De-manning / Elimination :

- (b) (ii) All unmanned level Crossings on Rajdhani and Shatabdi routes where maximum permissible speed is 120 Kmph or more should be manned on priority.

Further train route wise priority to be followed for manning will be 'A' route followed by 'B', 'C', 'D-Spl', 'D', 'E-Spl' and 'E'.
- (c) De-Manning / Elimination of the level crossings :

The existing manned level crossings should not be demanned. However, a detailed review/survey of the existing level crossing both manned and unmanned to be carried out with a view to eliminate them by either passing the road through an existing bridge or by constructing link roads to combine two or more level crossings, etc.

925 : Criteria for replacement of exiting level crossings (other than those provided on deposit terms) with Road Over / Under Bridges on cost sharing basis :

- (1) Minimum Train Vehicle Units on a Level Crossing should be 1 lakh per day to become eligible for replacement with Road Over/Under Bridges on 'Cost Sharing' basis. However, this could be relaxed in the following cases :-
 - (a) Suburban sections having high frequency of train services; and
 - (b) Major stations where detentions to road traffic are very high on account of either shunting operations or multi-directional receipt/ dispatch of trains or stabling of trains etc.
- (2) Preference should be given to the Level Crossings located on trunk routes vis-a-vis those located on branch lines. In any case, minimum number of times the level crossing is required to be closed against the road traffic should at least be 12 times per day.
- (3) Subject to (1) and (2) above, priority should generally be accorded by the concerned State Government giving preference to level crossings on National Highways.
- (4) In case of Road Over/Under Bridges constructed in replacement of busy level crossings situated in Municipal/Corporation/Metropolitan areas where Light Vehicular Traffic is considerable and where the Railways are satisfied that closure of the level crossings would cause hardship, additional provision may be made for construction of the subway or a light Over Bridge with ramps for the use of light vehicular traffic at the time of framing the proposal for the construction of Road Over/Under Bridges. The proposals for providing the ramps/subway should be examined critically and should be provided for only in the case of genuine hardships and not as a matter of course. The cost of these ramps/subway will be shared equally with the Sponsoring Authority on 50:50 basis.
- (5) Closure of the Level Crossings should be ensured before commissioning of the Road Over/Under Bridges. All such cases where State/Local Authorities do not agree to abide by this should be reported to the Railway Board promptly.

CLASSIFICATION AND STANDARD SPECIFICATION FOR LEVEL CROSSINGS (Within Railway Limits)
ANNEXURE - 9/1 to Para - 904 of IRPWM (2004 Edition)

Note – (1) The revised specification apply only when any new level crossings constructed or old one altered.

(2) Wherever the new standards differ from the old standards, the old standards have been given below the new standards for reference,
 In other cases the old standards and new standards are the same.

Item	Details	Dimensions and details for Various classes of crossings					Remarks
		Special	'A' Class	'B' Class	'C' Class	'D' Class	
1	2	3	4	5	6	7	8
1	Minimum width of gates at right angles to the centre line of the road.	The minimum width of gates will be governed by the class of roads on which the level crossing is situated and will be as under – Across Class I roads – 9 metres or X+2.5 M, whichever is more. Across Class II roads – 7.5 metres or X+2 M, whichever is more. Across Class III roads – 5.0 metres or X+ 1.25 M, whichever is more. Across Class IV roads – suitable width subject to 2 M, being the minimum.					Where X = width of Carriage way. Gates shall be provided at special 'A' and 'B' class crossings. Gates or chains shall be provided at 'C' and 'D' class level crossings only in the following cases : – (i) When the line is on curve and the road and rail view is not clear. (ii) When speed of trains and volume of traffic are great. (iii) When the level crossing is within those limits at a station between which shunting is normally likely to be carried out. (iv) On portions of the line which are fenced through out on one or both sides, except when efficient cattle guards are provided
2	Minimum length of guard rail (for a square crossing)	7.5 metres (24') or 9.0 metre (30')	5.5 metres (18').	5.5 metres (18').	3.0m, (9') if un-manned. 5.5 metres (18') if manned.	2.0m (6')	In the case of skew crossing the length of the guard rail must be increased in accordance with the formula : $X = \frac{L}{\sin A}$ where X = required length, L = Minimum length measured at right angles to the centre line of the road, A = Angle between the centre line of the Road and Railway.
3	Angle of crossing between gates.	Not less than 45° between centre line of road and Railway.	Not less than 45° between centre line of road and Railway.	Not less than 45° between centre line of road and Railway.	Not less than 45° between centre line of road and Railway.	At right angles to the centre line of the Railway.	

Item	Details	Dimensions and details for Various classes of crossings					Remarks
		Special	'A' Class	'B' Class	'C' Class	'D' Class	
1	2	3	4	5	6	7	8
4	Provision of Wicket gates for foot passengers.	To be provided except where foot over bridges are provided.	To be provided except where foot over bridges are provided.	To be provided except where foot over bridges are provided.	Not to be provided.	Not to be provided.	Design of Wicket gate should be such that trespassing by cattle is prevented.
5	Position of gates when open to road traffic.	Across or towards the line.	Away from or towards but not across the line.	Away from or towards but not across the line.	Away from or towards but not across the line if gates are provided.	Same as 'C' class but stakes shall be fixed between the gate posts to prevent passage of Road.	(i) At new manned level crossings or when existing unmanned level crossings are upgraded to manned level crossings, lifting barriers should normally be provided, which should be coupled, so as to operate simultaneously. Chain and Swing gates at existing manned level crossings should be replaced by lifting barriers on a programmed basis, giving priority to the important and busy level crossings. (ii) Where lifting barriers are provided, the booms will be in vertical position.
6	Provision of lights on gates at nights. (a) Light as observed by road users.	Red when either gate is closed to the Road, While when both gates open to the Road.	Red when either gate is closed to the Road, While when both gates open to the Road.	Red when either gate is closed to the Road, While when both gates open to the Road.	Red when either gate is closed to the Road, white when both gates are open to the Road. But provision of gate lamps is not obligatory and should normally be provided at only those level crossings where there is Motor Traffic. Where there is no Motor Traffic the gate should be painted white and red disc provided. If posts and chains are provided, the posts should be painted white with red disc provided on the chains at the centre and reflectors, luminous paint or scotchlite tape may be provided on the red disc as an alternative to lamps.	Not to be provided.	(iii) At all important level crossing gates where electric power supply is available flashing lights to give indication to the road users about lowering or raising of lifting barriers should be provided. An economical arrangement would be to fit the gate lamp to the revolving hinge post and to fit the fixed gate post a cowl to mask the lamp in both directions along the track. If local conditions make it expedient to fit the lamp in the centre of the gate a suitable rod operated cowl must be provided.

Item	Details	Dimensions and details for Various classes of crossings					Remarks
		Special	'A' Class	'B' Class	'C' Class	'D' Class	
1	2	3	4	5	6	7	8
	(b) Light as observed by Drivers of approaching trains.	Red when gates are closed across track.	Nil.	Nil.	Nil	Nil	
7	Minimum distance of gate posts from centre line of track.	For B.G. 3 metres For M.G. 2.5 M. and N.G }	3 metres 2.5 metres	3 metres 2.5 metres	3 metres 2.5 metres	3 metres 2.5 metres	
8	Minimum distance of gate lodge from – (a) Centre line of nearest track. (b) Edge of Road metalling.	6 metres	6 metres	6 metres	6 metres	6 metres	If the line of approach road is on a curve at or near a level crossing, the gate lodge must be built on the out side of curve.
9	Old Standards – Interlocking and Communication Devices to be provided. (a) Normal Position of gate.	6 metres	4.5 metres	4.5 metres	3 metres	3 metres	
		Open to road traffic	Open to road traffic	Closed to road traffic. Can be kept open to road traffic provided either gates are interlocked with signals and provided telephone communication with adjacent stations/ cabins or when the following conditions are satisfied.	Closed to road traffic. Can be kept open to road traffic provided either gates are interlocked with signals and provided telephone communication with adjacent stations/ cabins or when the following conditions are satisfied.		

Item	Details	Dimensions and details for Various classes of crossings					Remarks
		Special	'A' Class	'B' Class	'C' Class	'D' Class	
1	2	3	4	5	6	7	8
				(i) L.C. should not be located in a Suburban Section. (ii) L.C. should not be in Automatic Block Signalling or Automatic permissable block signalling territories. (iii) Should have a telephone connection with the nearest station with exchange of private numbers. (iv) Visibility at the level crossing should be good. (v) Should be provided with whistle boards on either side at adequate distance to enjoin the Drivers of approaching trains to give audible warning of the approach of a train to the road users. (vi) As long as the level crossing gate is kept open to road traffic, a red flag by day and red light (by using hand signal lamp) during night, should be displayed towards the approaching trains on either side of level crossing.	(i) L.C. should not be located in a Suburban Section. (ii) L.C. should not be in Automatic Block Signalling or Automatic permissable block signalling territories. (iii) Should have a telephone connection with the nearest station with exchange of private numbers. (iv) Visibility at the level crossing should be good. (v) Should be provided with whistle boards on either side at adequate distance to enjoin the Drivers of approaching trains to give audible warning of the approach of a train to the road users. (vi) As long as the level crossing gate is kept open to road traffic a red flag by day time and red light (by using hand signal lamp) during night, should be displayed towards the approaching trains on either side of level crossing.		
				Note: The above decision should be taken Personally by D.R.Ms. approved by P.C. E/ C.E (Co-ordination) and C.O.M. and position reviewed every two years.			

Item	Details	Dimensions and details for Various classes of crossings					Remarks
		Special 3	'A' Class 4	'B' Class 5	'C' Class 6	'D' Class 7	
1	2 (b) Interlocking of gates with signals— (i) If within station limits. (ii) If outside station limits. (c) Telephone Communication from gate-lodge— (i) Within station limits. (ii) Outside station limits.	Should be inter-locked with station signals.	Should be inter-locked with station signals.	Should be inter-locked with signals. (i) In Suburban Sections. (ii) In non-Suburban sections where operated from cabins. (iii) In Automatic Signalling and Automatic permissive block territories.	Should be inter-locked with signals. (i) Within station limits where operated from cabin. (ii) In automatic signalling and Automatic permissive block territories.	7	8 (i) The level crossing inside station limits should be beyond the limits upto which shunting is normally carried out or at an adequate distance of at least 250 metres ahead of the starters and trailing points of the station where Advanced Starters/ Shunting Limit Boards are not provided. (ii) In case of level crossings falling on suburban Sections they may be considered for upgradation to 'B' class in the event of their not qualifying for upgradation to 'Special' or 'A' class and when so upgraded to 'B' class the facilities as indicated in column 5 should be provided. (i) In the case of level crossings protected by signals where the sighting of the signal by an engine Driver is inadequate a warning board should be placed at not less than the emergency braking distance in rear of the gate stop signal. The board should be vertical 2000 mm. by 450mm, with alternate black and yellow strips 125mm. wide painted on it at an angle of 45°. The board need not be lit at night but should as far as possible be provided with scotchlite or other effective light reflectors. (ii) Where level crossing is situated outside station limits but in close proximity thereof, the clear distance between the level crossing and an outer signal should not be less than a full train length. In cases where communication with A.S.M. is stipulated, the connection may be given to the Switchman in the Cabin as per the local condition.
		Should be inter-locked with gate signals.	Should be inter-locked with gate signals.	To be interlocked (1) In suburban sections (2) In automatic signalling and automatic permissive block territories.	To be interlocked in automatic signalling and automatic permissive block territories.		
		Telecommunication with A.S.M.'s Office to be provided.	Telecommunication with A.S.M.'s Office to be provided.	Telecommunication with A.S.M.'s Office to be provided.	Telecommunication with A.S.M.'s Office to be provided in case of manned level crossings.		
		Telecommunication with A.S.M.'s Office of adjoining station should be provided.	Telecommunication with A.S.M.'s Office of adjoining station should be provided.	Telecommunication with adjoining station to be provided on—	Telecommunication with adjoining station to be provided —		

Item	Details	Dimensions and details for Various classes of crossings:					Remarks
		Special	'A' Class	'B' Class	'C' Class	'D' Class	
1	2	3	4	5	6	7	8
	(d) warning bell operated by approaching train.	Should be provided where L.C. is outside station limits.]	Should be provided where L.C. is outside suburban sections and on non-suburban sections provided with Automatic Signalling and in APB territories.	Should be provided where L.C. is outside station limits in all suburban sections and on non-suburban sections provided with Automatic Signalling and in APB territories.	(a) On all level crossings on Rajdhani route; (b) On suburban sections; and (c) On curves obstructing the view of the level crossing from approaching train* and vice versa.	(a) On all level crossings on Rajdhani route; (b) On Suburban sections; and (c) On curves obstructing the view of the level crossing from approaching train* and vice versa.	Provision of warning bells operated by approaching trains should be confined to interlocked level crossings only.
10	Minimum no. of Gate Keepers.	Three	Two	Two	Two if manned (one if the gate is closed and locked at night in accordance with the provision of GR. 16.03)	Two if manned (one if the gate is closed and locked at night in accordance with the provision of GR 16.03).	Note:- (1) Gate Keepers will not be provided at 'C' and 'D' class level crossings where gates / chains are not provided. (2) Gate Keepers may be dispensed with at gates within station limits when operated by station staff in accordance with special instructions. (3) Gate Keepers may be dispensed with at 'C' class level crossings on canal roads which are provided with gates if the following conditions are fulfilled :- (a) The gates are generally closed to the roads and locked. (b) The roads are the private property of the Irrigation, Public Works Department and are not public thorough fares.

Item	Details	Dimensions and details for Various classes of crossings					Remarks
		Special	'A' Class	'B' Class	'C' Class	'D' Class	
1	2	3	4	5	6	7	8
11	Fencing on lines which are not fenced throughout their length.	Minimum length of 15m. from each gate post parallel to track.	Minimum length of 15m. from each gate post parallel to track.	Minimum length of 15m. from each gate post parallel to track.	Minimum length of 15M. for manned level crossing outside station limits and level crossing within station provided with gates/chains.	Fencing should be provided for level crossings if manned with gates/chains within station limits for 15M. length.	(c) The keys of the gates are issued to a few responsible Government Officials. (d) The traffic over the level crossing is very light. (4) One Gate Keeper may be dispensed with if there is no traffic in the night in accordance with GR. 16.03
12	Width of metalling- (a) Between gates...	Same as that of the width of gates.	Same as that of the width of gates.	Same as that of the width of gates.	Same as that of the width of gates or the width between gate posts where gate leaves are not provided.	Same as that of the width of gates or the width between gate posts where gate leaves are not provided.	
	(b) Outside gates ...	Minimum width of metalling immediately outside gates (but tapering off to the existing carriage way width within a distance of 30 M from the gate) shall be as follows depending on the class of road over which the L.C. is situated :- Class I road : 7M or the width of existing carriage way whichever is greater. Class II Road: 5.5M or the width of existing carriage way whichever is greater. Class III road: 3.78M or the width of existing carriage way whichever is greater.	Class II Road: 5.5M or the width of existing carriage way whichever is greater.	Class III road: 3.78M or the width of existing carriage way whichever is greater.	Class IV road, suitable width subject to 2M being the minimum.		
13	Old Standards - (a) Type of pavement between gates. (b) Outside gates...	Same width as metalling outside the Railway Boundary.	Same standard as that of the road surface outside the Railway Boundary.	Same standard as that of the road surface outside the Railway Boundary.	Same standard as that of the road surface outside the Railway Boundary.		If the surface outside is cement concrete, blacktop surface may be provided. For class I and II roads, it is desirable to have black topped surface for a distance of at least 30M beyond each gate.
14	Minimum width of road formation outside the gates for a distance of 30 M beyond the gate.	Depending on the class of road over which level crossing is situated the minimum width of road formation will be as under - Class I roads: C+5M Class II roads: C+5M Class III roads: C+5M Class IV roads suitable width 3 metres, being the minimum	Class I roads: C+5M Class II roads: C+5M Class III roads: C+5M Class IV roads suitable width 3 metres, being the minimum	Class I roads: C+5M Class II roads: C+5M Class III roads: C+5M Class IV roads suitable width 3 metres, being the minimum	Class I roads: C+5M Class II roads: C+5M Class III roads: C+5M Class IV roads suitable width 3 metres, being the minimum		

Item	Details	Dimensions and details for Various classes of crossings					Remarks
		Special	'A' Class	'B' Class	'C' Class	'D' Class	
1	2	3	4	5	6	7	8
15	Old Standards--						
	Level length and gradients-	Same as rest of the road outside Railway Boundary	4 metres wider than metalling.	3 metres wider than metalling.	2 metres wider than metalling.	3m.	
	(a) Between gates...						
	(b) Outside gates ...						
	Level upto ...	Level	Level	Level	Level	Level	
16	Not steeper than Old Standards -	Class I roads- 15 metres beyond.	Class II roads- 8 metres beyond.	Class III roads- 8 metres beyond.	Class IV roads- 8 metres beyond.		Vertical curves should be provided at change of grades within Railway Boundary according to Indian Road Congress Standard, beyond the level portion.
	Level for ...	1 in 40 beyond ...	1 in 30 beyond....	1 in 20 beyond....	1 in 15 beyond....		
		8 metres beyond.	6 metres beyond.	6 metres beyond.	6 metres beyond.		
		1 in 40 beyond.	1 in 30 beyond.	1 in 30 beyond.	1 in 20 beyond.	1 in 10 beyond.	
	Not steeper than						
16	Minimum radius of centre line of road on curved approaches.	(i) In the case of Level crossings situated on National or State Highways, the following minimum radius may be adopted :- Plain or rolling country... 250 metres, Hilly country 90 metres.					
		(ii) In difficult terrain, the radius may be reduced with the concurrence of road authority.					
		(iii) The aim should be to provide the greatest possible radius.					
		(iv) In the case of other roads the best possible radius, having regard to safety of Road traffic may be adopted.					
	Old Standards -	60 M. (200 ft)	45 M. (150 ft.)	30 M. (100 ft.)	21 M. (70 ft.)	8 M. (25 ft.)	

Item	Details	Dimensions and details for Various classes of crossings					Remarks
		Special	'A' Class	'B' Class	'C' Class	'D' Class	
1	2	3	4	5	6	7	8
17	Minimum and desirable straight of Road outside the gate.	Depending on the class of road over which the level crossing is situated following minimum and desirable length may be adopted:-					At unmanned level crossings sight triangle may be demarcated in the four corners on the basis of speeds of trains and the road vehicles, clear of any obstruction to sight.
(i)	Desirable	Class I – 30 M.	Class II – 22.5 M	Class III – 15 M.	3 M.	Nil	
(ii)	Minimum	15 M.	9 M.	4.5 M.			
	Old Standards –	12 M.	9 M.	6 M.			
18	Minimum sight distance of level crossing gate from road in the vicinity of level crossing	Depending on the class of road over which the level crossing is situated the following sight distances may be adopted :-					
	(i) Plain or rolling country.	Class I – 120 M.	Class II – 60 to 90 M.	Class III – 40 M.			1) Road signs conforming to the standards prescribed must be erected by the Road Authority in advance of the level crossing at the specified distances. 2) 'Stop' boards bearing the prescribed legend to be provided on the road on either side at suitable points within the Railway Boundary at the approaches to all unmanned level crossings. 3) Gate posts should be provided invariably. Even in cases where no gates are provided posts should be painted white. Gates should be painted white with a red disc not less than 600 mm. dia, in the centre of gate.
	(ii) Hilly country ...	60 M.	40 to 50 M.	30 M.			
19	Warning to road traffic of proximity of level crossing–	The distance of road sign posts from level crossing :-					
	(a) Plain country...	Class I – 120 M.	Class II – 60 to 90 M.	Class III – 40 M.			
	(b) Hilly country ...	60 M.	40 to 50 M.	30 M.			

GENERAL

Sl. No.	Items No	Reference
1	Minimum visibility at a level crossing for road users / train driver shall be 600 m.	IRPWM
2	The gateman should have medical fitness for A3 class.	IRPWM
3	The frequency of OH of LCs laid with PSC sleepers must be at least once in 2 years and laid without PSC sleepers must be once in every year.	IRPWM
4	A Speed Restriction of 30 Kmph should be imposed on LC gate location with arrangements for passage of road traffic when the check rails of LC are removed for track works.	IRPWM
5	At all level crossings the gate posts shall be fixed square to the road.	IRPWM
6	Height gauges should be located at a minimum distance of 8m from gate posts (In exceptional circumstance with permission of CE 8m from centre line of track).	IRPWM
7	Road surface up to the height gauges may be at the same level as the road surface inside the gate posts.	IRPWM
8	Rail joints should be avoided in check rails and on the running rails, within the level crossings and 3 m on either side.	IRPWM
9	LC should not fall within the breathing length of LWR, as per the provisions contained in LWR manual.	IRPWM
10	Visibility of level crossing is assessed from a distance of 5m from the centre line of the nearest track.	IRPWM
11	Every level crossing should be inspected by AEN once in 6 months and by PWI once in a month.	IRPWM
12	No gate man shall change his hours of duty without the order of the PWI.	IRPWM
13	If any unmanned level crossing gets involved in more than 3 accidents in 3 years, it should be manned immediately irrespective of the category to which it belongs.	IRPWM
14	Minimum & maximum clearance of check rails at level crossing (BG) is 51 mm & 57mm respectively.	SOD Ch.- I, Item No. - 5
15	Minimum depth of space for wheel flange from the rail level BG is 38 mm.	SOD Ch.- I, Item No.- 6
16	Separate rail posts (independent of gate posts) should be provided near the gate to fix the safety chains during emergency.	IRPWM

Sl. No.	Items No	Reference
17	Whistle boards should be provided at the approaches to all unmanned 'C' class level crossings and manned level crossings, where the view is not clear on either side for a distance of 600 m and those which have normal position open to road traffic, without interlocking and protected by signals.	IRPWM
18	Indicator posts should be provided with one dot and three dots at 600 m and 1200 m distances respectively to indicate the number of detonators to be laced in case of obstruction at the BG LC.	IRPWM
19	The vertical clearance of height gauge should be 4.67 m from road level.	IRPWM Para 9.1(4) & Relevant RDSO drawing
20	The road surface between the gate and up to 8 m beyond gate should be level for Class-II & III roads and 15 m for Class-I roads.	IRPWM
21	Height of the boom from road level should not be less than 80 cm and should not be more than 1 m.	IRSEM
22	At all important LC gates where electric power supply is available flashing lights to give indication to the road users about lowering or raising of lifting barriers should be provided.	IRPWM
23	Level Crossing accidents falling under categories C 1 to C4 will be termed as consequential train accidents.	Accident Manual Para 2.05, 1(a)
24	The distance of W/L board for unmanned LC's on single line section where visibility is clear should be 600m.	IRPWM

CHAPTER – IX

Provisions of different Acts relevant to Railway Level Crossings

MOTOR VEHICLES ACT, 1988

131. Duty of the driver to take certain precautions at un guarded railway level crossings.–

Every driver of a motor vehicle at the approach of any unguarded railway level crossing shall cause the vehicle to stop and the driver of the vehicle shall cause the conductor or cleaner or attendant or any other person in the vehicle to walk up to the level crossing and ensure that no train or trolley is approaching from either side and then pilot the motor vehicle across such level crossing, and where no conductor or cleaner or attendant or any other person is available in the vehicle, the driver of the vehicle shall get down from the vehicle himself to ensure that no train or trolley is approaching from either side before the railway track is crossed.

RAILWAY ACT, 1989

146. Obstructing railway servant in his duties.–

If any person wilfully obstructs or prevents any railway servant in the discharge of his duties, he shall be punishable with imprisonment for a term which may extend to six months, or with fine which may extend to one thousand rupees, or with both,

151. Damage to or destruction of certain Railway properties.–

- (1) If any person, with intent to cause, or knowing that he is likely to cause damage or destruction to any property of a railway referred to in sub-section (2), causes by fire, explosive substance or otherwise, damage to such property or destruction of such property, he shall be punishable with imprisonment for a term which may extend to five years, or with fine, or with both.
- (2) The properties of a railway referred to in sub-section (1) are railway track, bridges, station buildings and installations, carriages or wagons, locomotives, signaling, telecommunications, electric traction and block equipments and such other properties as the Central Government being of the opinion that damage thereto or destruction thereof is likely to endanger the operation of a railway, may, by notification, specify.

160. Opening or breaking a level crossing gate.–

- (1) If any person, other than a railway servant or a person authorized in this behalf, opens any gate or chain or barrier set up on either side of a level crossing which is closed to road traffic, he shall be punishable with imprisonment for a term which may extend to three years.
- (2) If any person breaks any gate or chain or barrier set up on either side of a level crossing which is closed to road traffic, he shall be punishable with imprisonment for a term which may extend to five years.

161. Negligently crossing unmanned level crossing.–

If any person driving or leading a vehicle is negligent in crossing an unmanned level crossing, he shall be punishable with imprisonment which may extend to one year.

Explanation — For the purposes of this section, “negligence” in relation to any person driving or leading a vehicle in crossing an unmanned level crossing means the crossing of such level crossing by such person,

- (a) without stopping or caring to stop the vehicle near such level crossing to observe whether any approaching rolling stock is in sight, or
- (b) even while an approaching rolling stock is in sight.

176. Obstructing level crossing.–

If any railway servant unnecessarily,—

- (a) allows any rolling stock to stand across a place where the railway crosses a public road on the level; or
- (b) keeps a level crossing closed against the public, he shall be punishable with fine which may extend to one hundred rupees.

CHAPTER – X

Checklist for Inspections

Unmanned Level Crossing

- | | | |
|---|---|-------|
| 1. Level crossing No. & km. | : | |
| 2. Whether 'W/L' board provided on both sides | : | |
| 3. Whether check rails have been provided | : | |
| 4. Whether road sign boards are provided at proper location and painted with fluorescent paint | : | |
| 5. Whether speed breakers are provided | : | |
| 6. Whether height gauges are provided at proper location (in electrified sections only) | : | |
| 7. Whether the road surface is found good / bad / satisfactory | : | |
| 8. Whether channel for wheel flange is kept clean with proper gap. | : | |
| 9. Whether the stop board is visible from 800 meters | : | |
| 10. Whether the warning boards have been provided at proper location | : | |
| 11. Whether the 'stop' board of size (675mm x 525mm) are provided at 5 meters from centre line of track | : | |
| 12. Whether train crew whistling as per G&SR. | : | |
| 13. Ambush checks :- whether road users are following the instructions; | | |
| i) Stop / start sign board | : | |
| ii) Driver / conductor getting down | : | |
| iii) Looking out in either direction for approach of any train | : | |
| iv) Passing the level crossing cautiously | : | |
| v) Not taking the risk of crossing the level crossing in the face of an approaching train | : | |
| 14. Check the traffic census figure | : | |
| 15. Any suggestion | : | |

Manned Level Crossing Gates

Items of UMLCs are also to be seen in addition to the followings :

1. Knowledge of Gateman, Refresher Course Training, Duty Roster, Catechism chart.
2. Safety equipments.
3. Stop disc, Carex Reflector, Working of catches & stops.
4. Road Surface, Speed breakers, Rumble strips, Approach slopes.
5. LC Indication Boards.
6. Safety chain and Padlock.
7. Location for fixing banner flag.
8. LC Register, Inspection schedule & its carrying out.

9. Gauge, Cross level & clearance between Running & Check rail, Fittings, Track drainage.
10. Gate working instruction in vernacular language.
11. Indication Board for placement of detonator, Track Protection Diagram.
12. Height Gauge, last overhauling date.
13. Water, Electricity at LC.
14. Examination light, Flood light.

WHAT TO LOOK FOR :

1. Whether staffs on duty are as per roster, alert and with proper uniform ?
2. Whether safety equipment as per list are available and are in working order ?
3. Whether gate lamps are clean and properly focused onto road ?
4. Whether approach road is properly fenced on either side ?
5. Whether the visibility of the gate is clear for both road users and trains ?
6. Whether channels between guard and stock rail are clean ?
7. Whether speed breakers and road signs are provided at prescribed distance at both sides?
8. Whether board of motor vehicle act provided ?
9. Whether stand by chain and stop boards are available ?
10. Whether whistle boards are provided at prescribed distance where necessary ?
11. Whether the lifting barrier is painted correctly with a "stop" circular board fixed in middle of it ?
12. Whether latest census particulars are available ?
13. Whether copy of gate-working rules is available in English, Hindi and in vernacular language ?
14. Whether the following are available in the gate lodge ?
 - a) Safety posters.
 - b) Duty roster.
 - c) Diagram showing placement of fog signals.
 - d) Catechism for gateman, competency certificate and bio-data of gateman.
 - e) Provision of carex reflectors at manned level crossing gates.
 - f) Availability of emergency chain/barrier of adequate length with locking arrangements.
 - g) Availability of pipes in centre of track at 5m on either side of level crossing for exhibiting danger signals.
15. Whether gate telephone is in working order ?
16. Whether road surface, width and depth of channel between stock and check rail are as per prescribed standard ?
17. Whether the conditions of lifting barriers and its locking, reflectors, gate leaves and warning bell are good ?
18. Whether height gauges are provided on either sides (OHE section) ?
19. Whether overhauling date is clearly painted on gate post ?
20. Whether the gate working instructions are revised as per latest G & SRs ?
21. Whether private numbers are correctly exchanged between the gateman and the Cabinman, SM, where required ?
22. Whether level crossing inspection book and complaint book, are available ?
23. Whether SM / PWI / SI (in case of interlocked gates) inspect the gate periodically ?

24. Whether irregularities noticed in inspections are get noted and rectified promptly ?
25. The knowledge of gateman in regard to the following may be tested to find out if these are satisfactory or not.
- a) The correct method of opening the barrier and the manner of locking the gate.
 - b) The protection of line in case of an obstruction on the gate,
 - c) The action to be taken when any thing unusual or dangerous condition is noticed on the train.
 - d) The use of hand signal flag/lamp.
 - e) The use of detonators.
 - f) The action to be taken in case of defective gate signal.
 - g) The regulation of traffic in case of failure of means of communication between the gate and station / cabin.
 - h) Action to be taken in case of train parting.

S & T Check

Inspection of Manned LC Gate :

1. All relays, batteries, etc. for operation of gate and gate signals shall be kept in proper sealed and locked condition.
2. Ensure positive boom locking.
3. Audible warning by a bell / buzzer of approved type is in working order.
4. Clearance between the road surface level and the boom shall be 0.8 to 1 metre.
5. Lifting barrier shall be such that it shall be possible to stop or reverse its movement at any point during operation without damage.

Mechanical Interlocked Level Crossing gate :

1. It shall be ensured that while closing the gate, warning bell rings and 'lamp bracket also gets turned to give required indication to road users.
2. It shall be ensured that boom locking is effective and it is not possible to lift the boom by more than 10 degree from closed position.
3. It shall be possible to extract the key from the winch only when the gate is fully closed.
4. Effectiveness of boom lever locking.

Motor operated level crossing gate :

1. At the centre of the boom, a red light should be lit for road traffic when gate is closed.
2. Proper operation of lifting barrier by a hand crank shall be checked.
3. The barrier shall remain in the last assumed position in case of failure of power supply.
4. Check road signals for correspondence indication.
5. Check emergency key is kept in a sealed box.
6. By putting emergency switch to normal, signal that taken 'OFF' shall assume 'ON' position.
7. In motor operated LC gate, boom pedestal shall be provided on RHS of direction of road traffic i.e. booms are opening / closing diagonally / Scissor type.

CHAPTER – XI

About Level Crossings

CE's Circular No. 145 (Rev-1)

Sub : Visibility requirement along the track for road users at unmanned LCs.

Ref. : CE's Circular No.: 145 issued vide letter No.: TC/LC/POLY/4379, dt. 31-7-98.

Vide CE's Circular under reference (CE's Circular No: 145), all concerned have been directed to put speed restriction at the unmanned LCs where visibility for the road user is less than 600 mt.

As per the practice being followed by the Divisions, imposition of speed restriction at the unmanned level crossings has been done as per Annexure 8/3 of Para 807 & 808 of IRPWM, but the Speed Restriction Board has been placed at 30m before the unmanned LC. This is not enough as required re-action time of 21 seconds is not available to Road user after seeing the incoming train.

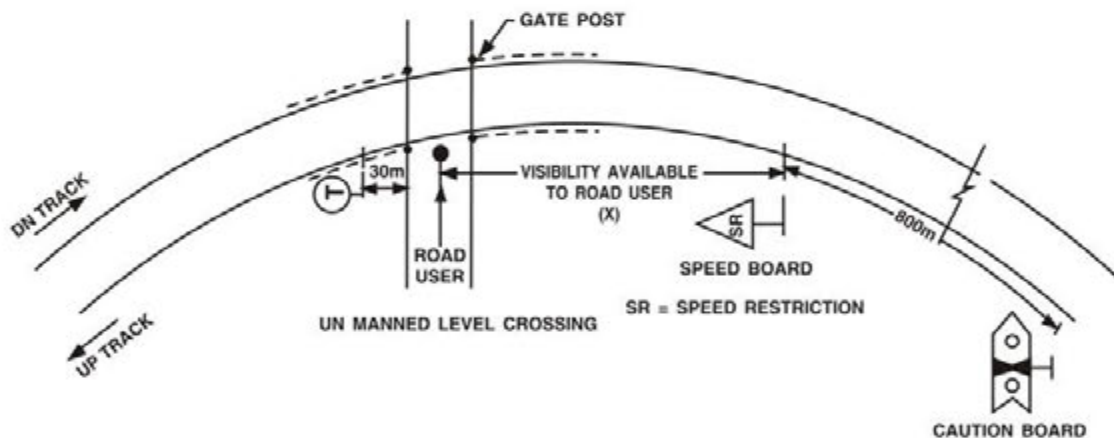
Therefore, in order to enhance safety at U/M LCs, it is desirable that the speed board should be placed at the distance from U/M LC equal to length of restricted visibility so that Reaction time of at least 21 seconds is available to the road user for crossing U/M level crossing safely after seeing the incoming train. However, the caution board shall be fixed at specified distance (800 mt for BG) before the speed board as per Annexure 8/3 of Para 807 & 808 of IRPWM. A sketch for implantation of Engineering boards is shown in Annexure-I.

The Speed Restriction specified in CE's Circular No: 145 for poor visibility at an U/M LC shall stand applicable.

This has the approval of PCE.

[Ref. : TC/LC/Poly/Pt-6/126, dated: 08-4-2013]

ANNEXURE - I



X = AT A DISTANCE FROM UNMANNED LEVEL CROSSING EQUAL TO LENGTH OF RESTRICTED VISIBILITY SO THAT REACTION TIME OF AT LEAST 21 SECs IS AVAILABLE TO THE ROAD USER FOR CROSSING UNMANNED LEVEL CROSSING.

**SKETCH FOR IMPLANTATION OF ENGINEERING BOARDS
AT U/M LEVEL CROSSINGS FOR SPEED RESTRICTION DUE TO POOR VISIBILITY**

[REF:- CE CIRCULAR NO. 145 (REV-I)]

SOUTH EASTERN RAILWAY

Office of the G.M.(Engg.),
Garden Reach, Kolkata- 43

CE's Circular No. 254

Sub: Provision of Road Sign Boards at approaches of all unmanned and manned level crossings.

Level crossings have been the prime source of recurring accidents and these accidents are caused mostly because of the negligence on the part of the road users. So, it is essential that suitable safety measures such as road sign boards, speed breaker/rumble strips etc., at the approaches of the level crossings are provided to forewarn the road users of the potential hazard ahead.

It may be pursued with all the State Governments/Road Authorities to ensure that the compliment of rumble strips and warning/speed limit signs are constructed/erected as per Annexures IV, V and VI at unmanned level crossings and Annexures IX, X and XI at manned level crossing gates and maintained properly so that they do not lose their effectiveness over time. However till such time the rumble strips are provided, it is mandatory on the part of Railway to provide speed breakers as per standard design of the speed breaker alongwith requisite 'Stop' and warning boards as per Annexures I & II at all unmanned level crossings and requisite warning boards as per Annexures II, VII & VIII at all manned level crossings. For clear visibility in the night, all 'Stop' and warning sign boards including that for speed breaker/rumble strips, shall preferably be provided with luminous paint / reflective strips.

It may be ensured that all mandatory road signs are provided for the benefit of road users at all manned / unmanned level crossings as per the Motor Vehicle Act and as per IRPWM.

(a) Details of road sign boards to be provided at unmanned level crossings :

The details of road sign boards that are to be provided for road users on both the approaches of unmanned LCs, are as follows :

- (i) 'Stop' board as detailed in Para 916 (2) of IRPWM on a suitable post bearing the indication of an engine and the legend 'Stop, look out for trains before crossing' in English, Hindi and regional language, i.e., all the three languages, are to be provided at each of the approaches of all unmanned level crossings. This 'Stop' Board as per Annexure-I, shall be provided at 5m from the centre of the nearest track within Railway boundary and is to be provided by the Railway Authorities.
- (ii) Standard warning sign board for speed breaker as detailed in Annexure-9/7 to Para 918(2) of IRPWM (Copy enclosed at Annexure-II) should be provided at each of the approaches of unmanned LCs at distances as indicated in item 19 of Annexure-9/1 to Para 904 of IRPWM for various classes of roads (Copy enclosed at Annexure-III) and is to be provided by the Railway Authorities till such time the State Government / Road Authorities provide the compliment of rumble strips and requisite warning sign board.
- (iii) Two boards as detailed in C 34 & C 35 of Motor Vehicle Act should be provided at each of the approaches of unmanned LC at distances of 200m and 50-100m respectively as per drawings enclosed in Annexure-IV and Annexure-V and are to be provided by the State Government / Road Authorities.
- (iv) One board as detailed in Annexure-VI is to be provided at each of the approaches of the unmanned level crossing at suitable locations outside the Railway boundary. These are to be provided by the State Government / Road Authorities.

(b) Details of road sign boards to be provided at manned level crossings :

The details of road sign boards that are to be provided for road users on both the approaches of manned LCs, are as follows :

- (i) Two boards depicting the relevant Sections 146 and 160 of Indian Railway Act, in trilingual format, as per Official Language Act, as detailed in Annexure-VII and VIII are to be displayed on each of the approaches of all Engineering as well as Traffic manned level crossing gates. They are to be provided by the Railway.
- (ii) Standard warning sign board for speed breaker as detailed in Annexure-9/7 to Para 918(2) of IRPWM (Copy enclosed at Annexure-II) should be provided at each of the approaches of manned LCs at distances as indicated in item 19 of Annexure-9/1 to Para 904 of IRPWM for various classes of roads (Copy enclosed at Annexure-III) and is to be provided by the Railway Authorities till such time the State Government/ Road Authorities provide the compliment of rumble strips and requisite warning sign board.
- (iii) Two boards as detailed in C 36 & C 37 of Motor Vehicle Act should be provided at each of the approaches of manned LC at distances of 200m and 50-100m respectively as per drawings enclosed in Annexure-IX and Annexure-X and are to be provided by the State Government / Road Authorities.
- (iv) One board as detailed in Annexure-XI is to be provided at each of the approaches of the manned level crossing at suitable locations outside the Railway boundary. These are to be provided by the State Government / Road Authorities.

It may be understood here that in addition to providing a 'Stop' road sign board and speed breaker warning board within Railway boundary as per IRPWM, it is also necessary to provide boards as per Motor Vehicle Act on approaches of all level crossing gates. It is to be ensured that all types of boards which are required depending upon the type of level crossing (unmanned or manned) are available at the approaches of all the level crossings. The matter is required to be pursued vigorously with the State Government/local Road Authorities for road signs to be provided by them at the level crossing as per Motor Vehicle Act.

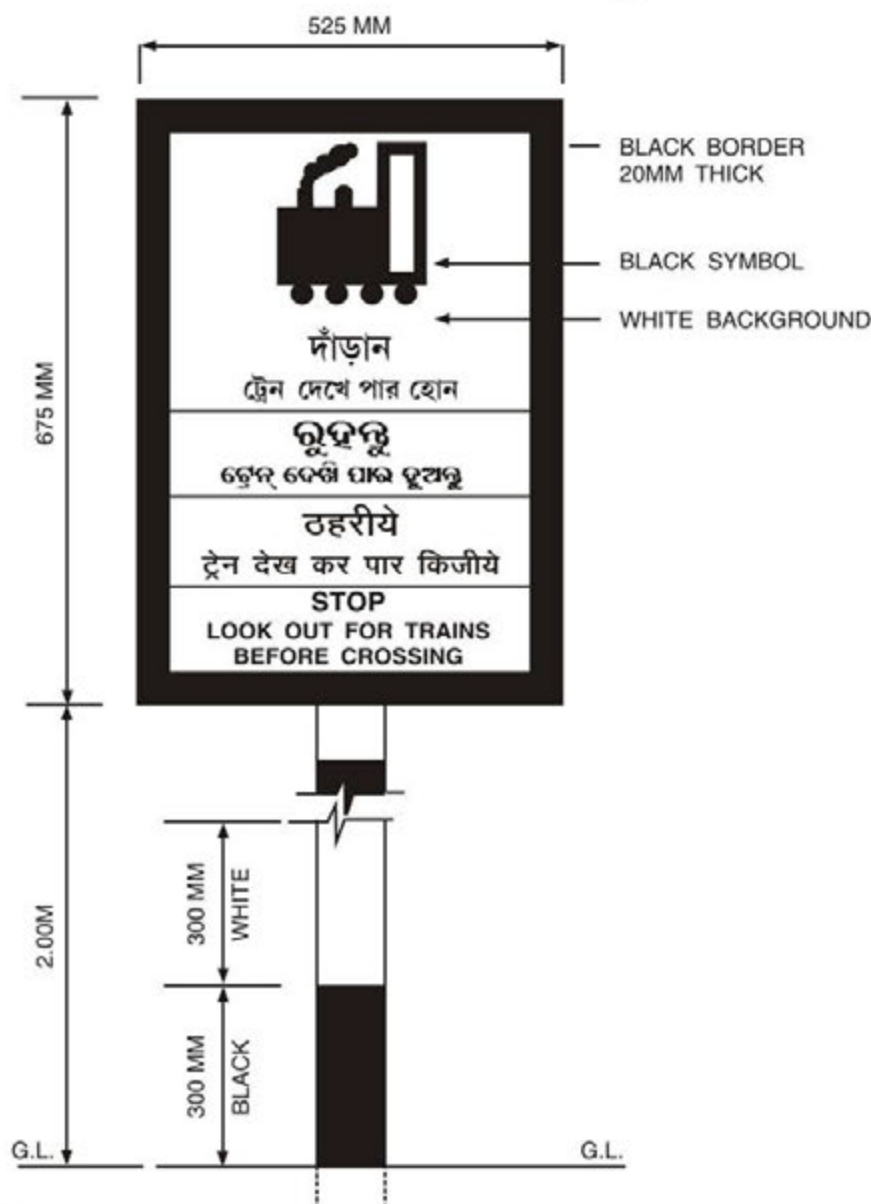
Verification of existence of all the boards including those required as per Motor vehicle Act, should be done at AEN level and a drive for provision of these Boards should be launched in the Divisions.

Ref. : Chief Track Engineer's letter No.TC/LC/SAFETY/Pl.5/ Date : July, 2005

ANNEXURE - I

STOP BOARD FOR ROAD USERS AT 'C' CLASS UNMANNED GATES

REF : IRPWM PARA 916 (2)



NOTE :-

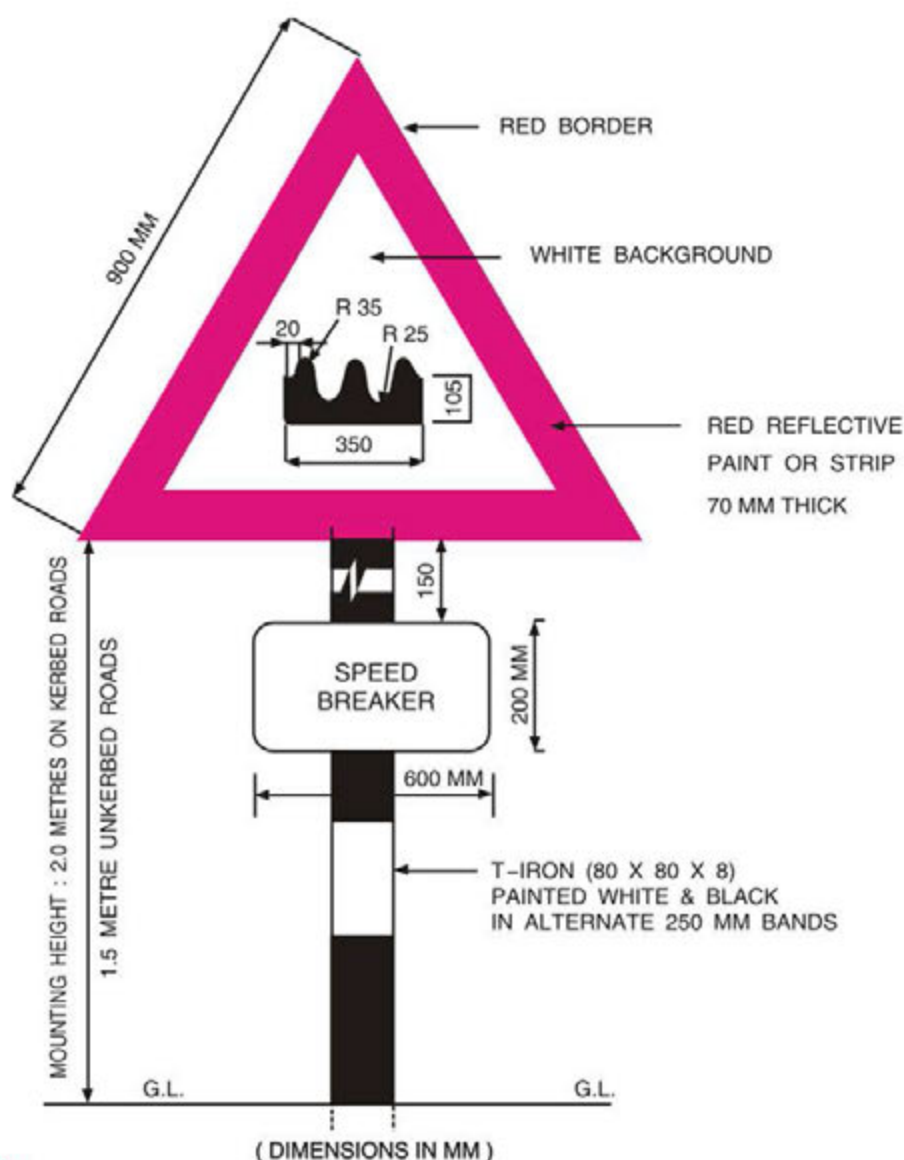
- THESE BOARDS ARE TO BE PROVIDED ON BOTH THE ROAD APPROACHES (ANY ONE OF THE BENGALI AND ORIYA WILL BE WRITTEN AS PER THE LOCATION OF THE L.C.) TO ALL UNMANNED LEVEL CROSSINGS AT 5M FROM CENTRE LINE OF NEAREST TRACK.
- PAINT USED SHALL PREFERABLY BE OF LUMINOUS VARIETY.
- THESE BOARDS ARE TO BE PROVIDED BY THE RAILWAY.

N.B.- THE MATTERS ON THE BOARD SHALL BE WRITTEN IN ENGLISH, HINDI AND VERNACULAR LANGUAGE (ORIYA OR BENGALI) OF THE AREA IN WHICH THE LEVEL CROSSING IS SITUATED.

ANNEXURE - II

**WARNING SIGN TO BE PROVIDED ON
ROAD APPROACHES OF ALL MANNED
AND UNMANNED LEVEL CROSSINGS**

**REF : IRPWM ANNEXURE-9/7 PARA 918(2) AND
C32 OF MOTOR VEHICLE ACT**

**NOTE :-**

- (i) LOCATION - TO BE SO PLACED ON ROAD FORMATION THAT NO PART OF THE SIGN INFRINGES THE VEHICLES.
- (ii) THESE BOARDS ARE TO BE LOCATED AT DISTANCES MENTIONED IN ITEM 19 ANNEXURE-9/1 PARA 904 OF IRPWM.
- (iii) IF THESE BOARDS ARE NOT PROVIDED BY ROAD AUTHORITIES, RAILWAY SHALL PROVIDE THESE.

ANNEXURE - III

ITEM 19 OF ANNEXURE - 9/1 TO PARA 904 OF IRPWM

Item	Details	Dimensions and details for various classes of crossings					Remarks
		Special	'A' Class	'B' Class	'C' Class	'D' Class	
1	2	3	4	5	6	7	8
19	Warning to road traffic of proximity of Level Crossing	The distance of road sign posts from level crossings :-					<p>(1) Road signs conforming to the standards prescribed must be erected by the Road Authority in advance of the level crossing at the specified distances.</p> <p>(2) 'Stop' boards bearing the prescribed legend to be provided on the road on either side at suitable points within the Railway Boundary at the approaches to all unmanned level crossings.</p> <p>(3) Gate posts should be provided invariably. Even in cases where no gates are provided posts should be painted white. Gates should be painted white with a red disc not less than 600 mm. dia. in the centre of gate.</p>
	(a) Plain country	Class I - 120 M	Class II - 60 to 90M	Class II - 40 M			
	(b) Hilly country	60 M	40 to 50M	30 M			

**WARNING SIGN TO BE PROVIDED ON
ROAD APPROACHES OF ALL UNMANNED
LEVEL CROSSINGS**

RED BORDER
NORMAL SIZE 70 MM
(SMALL SIZE 45 MM)

WHITE BACKGROUND

BLACK SYMBOL

NORMAL SIZE 900 MM
SMALL SIZE 600 MM

300 MM

WHITE BACKGROUND

80 MM RED STRIPS

30°

30°

80 MM RED STRIPS

900 MM

610 MM

380 MM

G.L.

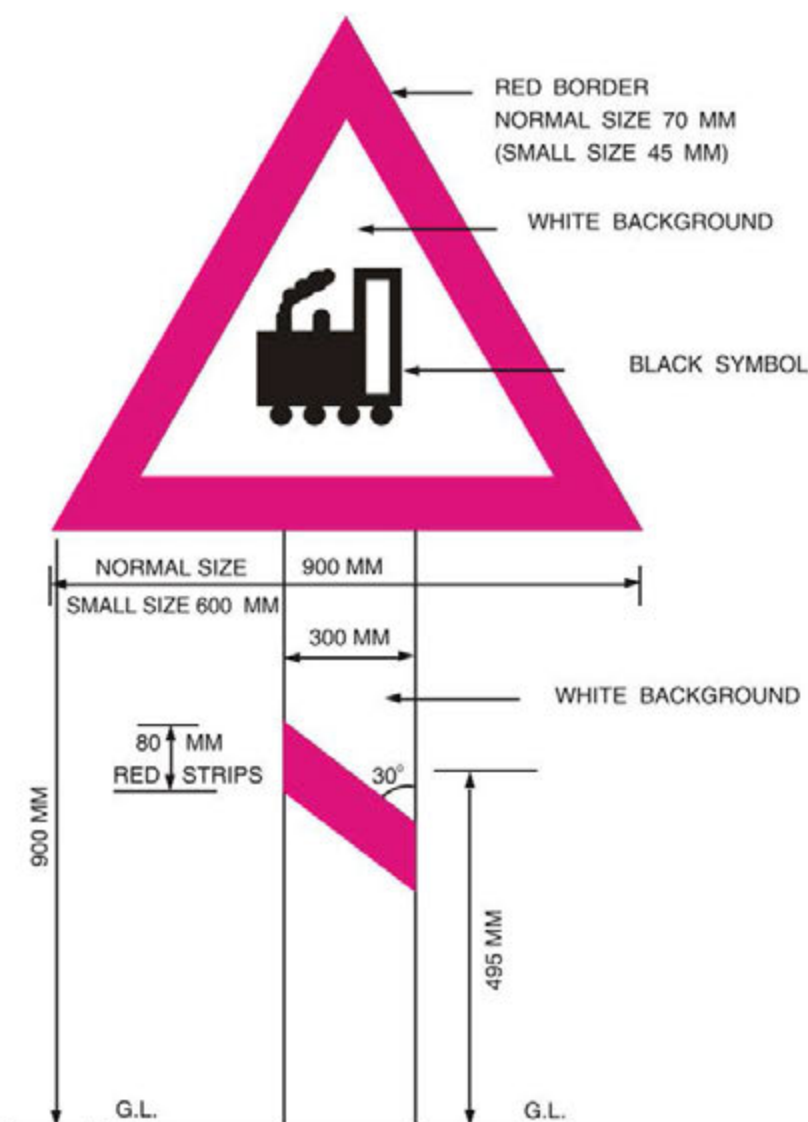
G.L.

- i) THESE BOARDS ARE TO BE PROVIDED ON BOTH THE ROAD APPROACHES TO ALL UNMANNED LEVEL CROSSINGS AT 200 M FROM THE LEVEL CROSSING.
- ii) PAINT USED SHALL PREFERABLY BE OF LUMINOUS VARIETY.
- iii) THESE BOARDS ARE TO BE PROVIDED BY THE ROAD AUTHORITIES.

ANNEXURE - V

WARNING SIGN TO BE PROVIDED ON ROAD APPROACHES OF ALL UNMANNED LEVEL CROSSINGS

REF : NO. C 35 OF MOTOR VEHICLE ACT

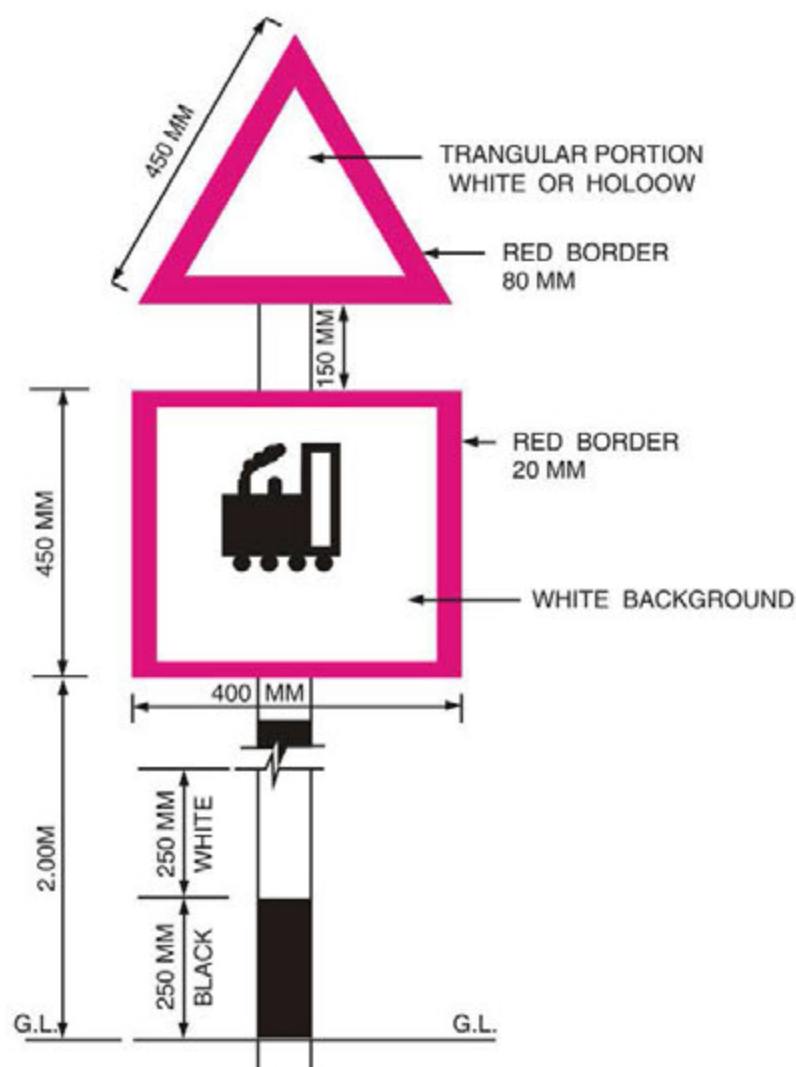


NOTE :-

- THESE BOARDS ARE TO BE PROVIDED ON BOTH THE ROAD APPROACHES TO ALL UNMANNED LEVEL CROSSINGS AT 50 - 100 M FROM LEVEL CROSSING. IN HILLY TERRAIN DISTANCE MAY BE REDUCED TO 30 - 60 M.
- PAINT USED SHALL PREFERABLY BE OF LUMINOUS VARIETY.
- THESE BOARDS ARE TO BE PROVIDED BY THE ROAD AUTHORITIES.

ANNEXURE - VI

WARNING SIGN TO BE PROVIDED ON ROAD APPROACHES OF ALL UNMANNED LEVEL CROSSINGS

**NOTE :-**

- i) THESE BOARDS ARE TO BE PROVIDED ON BOTH THE ROAD APPROACHES TO ALL UNMANNED LEVEL CROSSINGS AT SUITABLE POINTS OUTSIDE THE RAILWAY BOUNDARY.
- ii) PAINT USED SHALL PREFERABLY BE OF LUMINOUS VARIETY.
- iii) THESE BOARDS ARE TO BE PROVIDED BY THE ROAD AUTHORITIES.

ଧାରା - ୧୪୬
ଆଇ-୧୪୬
ଧାରା - ୧୪୬
SECTION - 146

(To be displayed at a suitable distance on approaches of either sides of manned LC)

ଯଦି କୌଣସି ବ୍ୟକ୍ତି ଇଚ୍ଛାକୃତଭାବେ କୌଣସି ରେଲ କର୍ମଚାରୀଙ୍କୁ ତାର କର୍ତ୍ତବ୍ୟ ବାଧା ଅଥବା ପ୍ରତିବନ୍ଧକତାର ସୃଷ୍ଟି କରନ୍ତି, ତେବେ ଏହି ବ୍ୟକ୍ତିର ଶାନ୍ତିସ୍ୱରୂପ ହସ୍ତମାସ ପର୍ଯ୍ୟନ୍ତ ଜେଲ ବା ଏକ ହଜାର ଟାଙ୍କା ଜରିମାନା ବା ଜେଲ ଓ ଜରିମାନା ଉଭୟ ଇଚ୍ଛାକୃତ ଭାବେ ହୋଇପାରେ। (*)

ଯଦି କୌଣସି ବ୍ୟକ୍ତି କୌଣସି ରେଲ କର୍ମଚାରୀଙ୍କୁ ତାର କର୍ତ୍ତବ୍ୟ ସମ୍ପାଦନରେ ବାଧା ଦିଏ ଅଥବା ପ୍ରତିବନ୍ଧକତା କରେ, ତେବେ ତାଙ୍କୁ ଦଶ ପ୍ରାୟ ୬ ମାସ ପର୍ଯ୍ୟନ୍ତ ଜେଲ ବା ଏକ ହଜାର ଟାଙ୍କା ଜରିମାନା ବା ଜେଲ ଓ ଜରିମାନା ଉଭୟ ଇଚ୍ଛାକୃତ ଭାବେ ହୋଇପାରେ। (**)

यदि कोई व्यक्ति जानबूझकर किसी रेल कर्मचारी को, उसकी सेवाओं के निष्पादन में रुकावट डालता है अथवा बाधा खड़ी करता है, तो उसे दंडस्वरूप 6 महीने तक की जेल हो सकती है अथवा एक हजार तक जुर्माना हो सकता है अथवा जेल और जुर्माना दोनों हो सकते हैं।

IF ANY PERSON WILFULLY OBSTRUCTS OR PREVENTS ANY RAILWAY SERVANT IN THE DISCHARGE OF HIS DUTIES, HE SHALL BE PUNISHABLE WITH IMPRISONMENT FOR A TERM WHICH MAY EXTEND TO SIX MONTHS, OR WITH FINE WHICH MAY EXTEND TO ONE THOUSAND RUPEES, OR WITH BOTH.

NB. - EITHER THE MATTERS MARKED (*) OR () SHALL BE MENTIONED AS PER THE LOCALITY OF THE LEVEL CROSSING.**

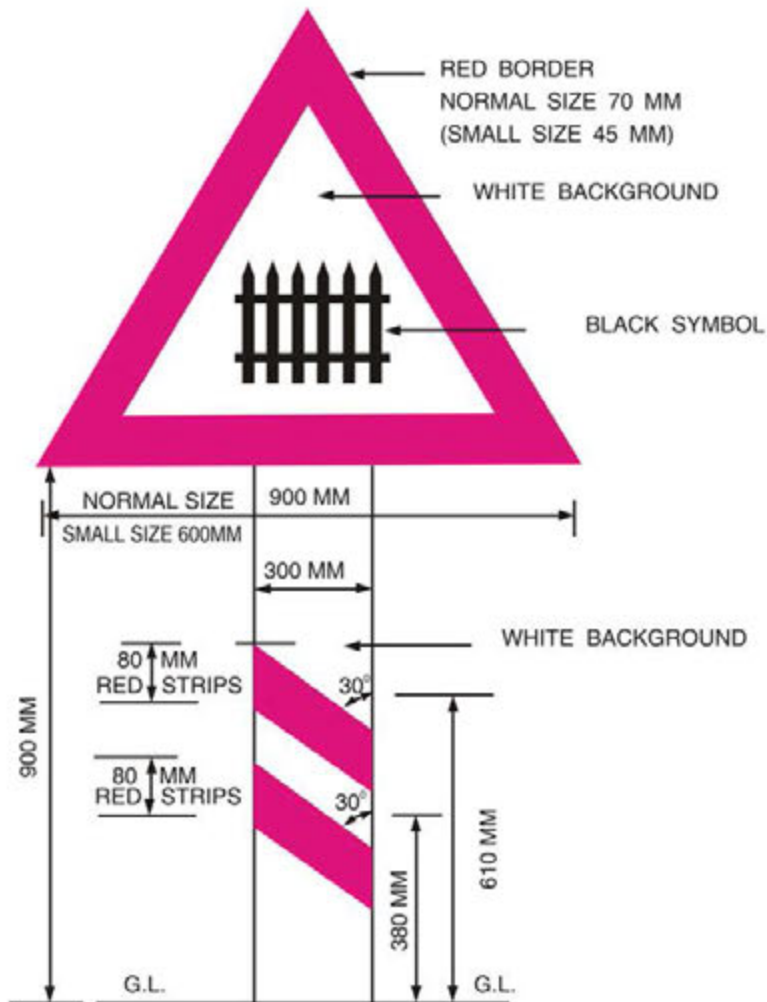
ଧାରା - ୧୬୦
ପାରା-୧୬୦
ଧାରା - ୧୬୦
SECTION - 160

(To be displayed at a suitable distance on approaches of either sides of manned LC)

- ୧) ରେଳକର୍ମଚାରୀ ଅଥବା ତାହାର ଦ୍ଵାରା ମନୋନୀତ କୌଣସି ବ୍ୟକ୍ତି ଯଦି, ସଡ଼କ ଯାତାୟାତର ଜନ୍ମ ବନ୍ଧୁ ଲେଭେଲ କ୍ରସିଂଗର ଦୁଇ ଦିକେର ଗେଟ ବା ଗେଟ ସଂଲଗ୍ନ ଚେନ ଅଥବା ଗେଟ ଫାଟକ ଖୋଲେ, ତେବେ ଏ ବ୍ୟକ୍ତିର ଶାସ୍ତିସ୍ଵରୂପ ତିନି ବର୍ଷର ପର୍ଯ୍ୟନ୍ତ ଜେଲ ହିସାବରେ ହେବ । (*)
- ୨) ଯଦି କୌଣସି ବ୍ୟକ୍ତି, ସଡ଼କ ଯାତାୟାତର ଜନ୍ମ ବନ୍ଧୁ ଲେଭେଲ କ୍ରସିଂଗର ଦୁଇ ଦିକେର ଗେଟ ବା ଗେଟ ସଂଲଗ୍ନ ଚେନ ଅଥବା ଫାଟକ ଭାଙ୍ଗେ, ତେବେ ଏ ବ୍ୟକ୍ତିର ଶାସ୍ତିସ୍ଵରୂପ ପାଞ୍ଚ ବର୍ଷର ପର୍ଯ୍ୟନ୍ତ ଜେଲ ହିସାବରେ ହେବ । (*)
- ୩) ରେଳ କର୍ମଚାରୀ ଅଥବା ତାହାର ଦ୍ଵାରା ପ୍ରାଧିକୃତ କୌଣସି ବ୍ୟକ୍ତି ଯଦି, ଯଦି ଅନ୍ୟ କୌଣସି ବ୍ୟକ୍ତି, ସଡ଼କ ଯାତାୟାତ ପାଇଁ ବନ୍ଦ ଥିବା ଲେଭେଲ କ୍ରସିଂଗର ଉଭୟ ପାର୍ଶ୍ଵସ୍ଥିତ କୌଣସି ଫାଟକ ଅଥବା ଚେନ ଅଥବା ଅବରୋଧକୁ ଖୋଲିଦିଏ, ତେବେ ତାହାକୁ ୩ ବର୍ଷ ପର୍ଯ୍ୟନ୍ତ ଜେଲ ଦଣ୍ଡ ହୋଇପାରେ । (**)
- ୪) ଯଦି କୌଣସି ବ୍ୟକ୍ତି, ସଡ଼କ ଯାତାୟାତ ପାଇଁ ବନ୍ଦ ଥିବା ଲେଭେଲ କ୍ରସିଂଗର ଉଭୟ ପାର୍ଶ୍ଵସ୍ଥିତ କୌଣସି ଫାଟକ ଅଥବା ଚେନ ଅଥବା ଅବରୋଧକୁ ଖୋଲିଦିଏ, ତେବେ ତାହାକୁ ୫ ବର୍ଷ ପର୍ଯ୍ୟନ୍ତ ଜେଲ ଦଣ୍ଡ ହୋଇପାରେ । (**)
- ୫) ରେଲ୍ୱେ କର୍ମଚାରୀ ଅଥବା ତାହାର ଦ୍ଵାରା ପ୍ରାଧିକୃତ କୌଣସି ବ୍ୟକ୍ତି ଯଦି, ଯଦି ଅନ୍ୟ ବ୍ୟକ୍ତି ଯଦି, ସଡ଼କ ଯାତାୟାତ କ୍ଷେତ୍ରରେ ବନ୍ଦ ସମ୍ପାଦନା କ୍ଷେତ୍ରରେ ଥିବା ଫାଟକ ଖୋଲିଦିଏ, ତେବେ ତାହାକୁ ତିନି ବର୍ଷର ପର୍ଯ୍ୟନ୍ତ ଜେଲ ଦଣ୍ଡ ହୋଇପାରେ ।
- ୬) ଯଦି କୌଣସି ବ୍ୟକ୍ତି, ସଡ଼କ ଯାତାୟାତ କ୍ଷେତ୍ରରେ ବନ୍ଦ ସମ୍ପାଦନା କ୍ଷେତ୍ରରେ ଥିବା ଫାଟକ ଖୋଲିଦିଏ, ତେବେ ତାହାକୁ ପାଞ୍ଚ ବର୍ଷର ପର୍ଯ୍ୟନ୍ତ ଜେଲ ଦଣ୍ଡ ହୋଇପାରେ ।
- 1) IF ANY PERSON, OTHER THAN A RAILWAY SERVANT OR A PERSON AUTHORISED IN HIS BEHALF, OPENS ANY GATE OR CHAIN OR BARRIER SET UP ON EITHER SIDE OF A LEVEL CROSSING WHICH IS CLOSED TO ROAD TRAFFIC, HE SHALL BE PUNISHABLE WITH IMPRISONMENT FOR A TERM WHICH MAY EXTEND TO THREE YEARS.
- 2) IF ANY PERSON BREAKS ANY GATE OR CHAIN OR BARRIER SET UP ON EITHER SIDE OF A LEVEL CROSSING WHICH IS CLOSED TO ROAD TRAFFIC, HE SHALL BE PUNISHABLE WITH IMPRISONMENT FOR A TERM WHICH MAY EXTEND TO FIVE YEARS.

NB. - EITHER THE MATTERS MARKED (*) OR () SHALL BE MENTIONED
AS PER THE LOCALITY OF THE LEVEL CROSSING.**

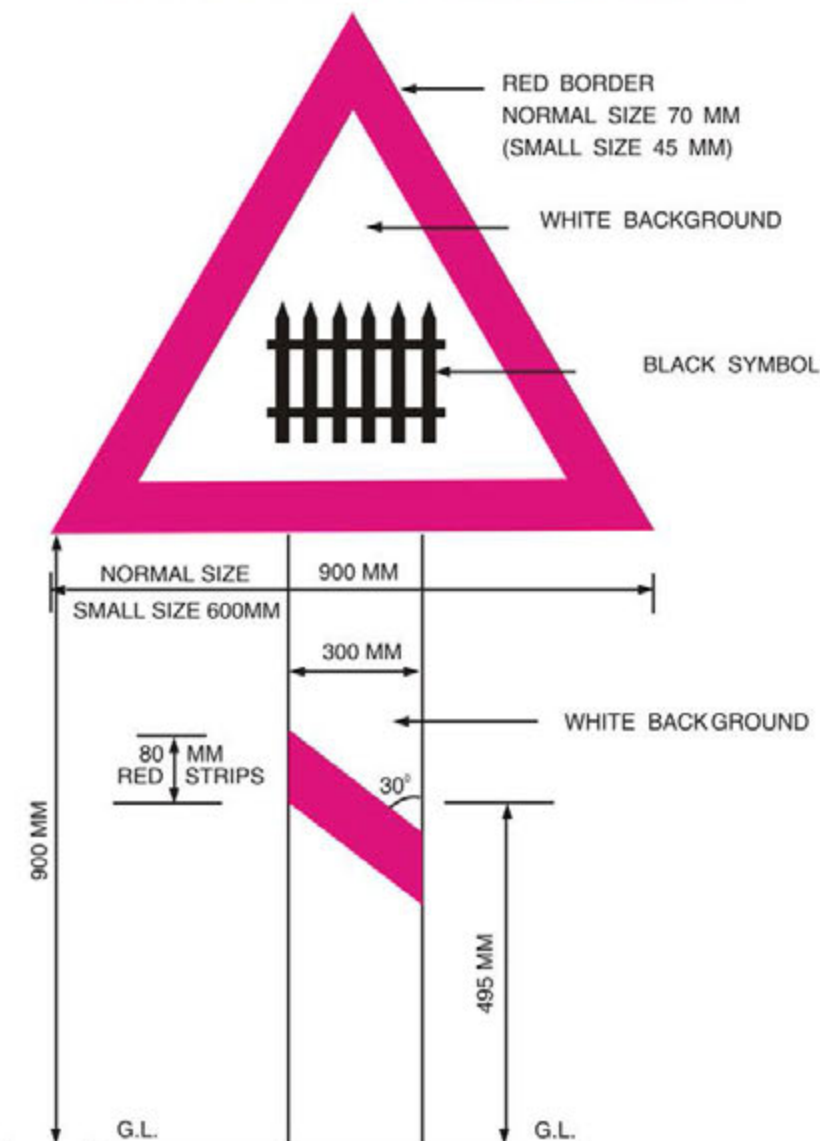
**WARNING SIGN TO BE PROVIDED ON
ROAD APPROACHES OF ALL MANNED
LEVEL CROSSINGS
NO. C 36 OF MOTOR VEHICLE ACT**

**NOTE :-**

- iv) THESE BOARDS ARE TO BE PROVIDED ON BOTH THE ROAD APPROACHES TO ALL MANNED LEVEL CROSSINGS AT 200 M FROM LEVEL CROSSING.
- v) PAINT USED SHALL PREFERABLY BE OF LUMINOUS VARIETY.
- vi) THESE BOARDS ARE TO BE PROVIDED BY THE ROAD AUTHORITIES.

ANNEXURE - X

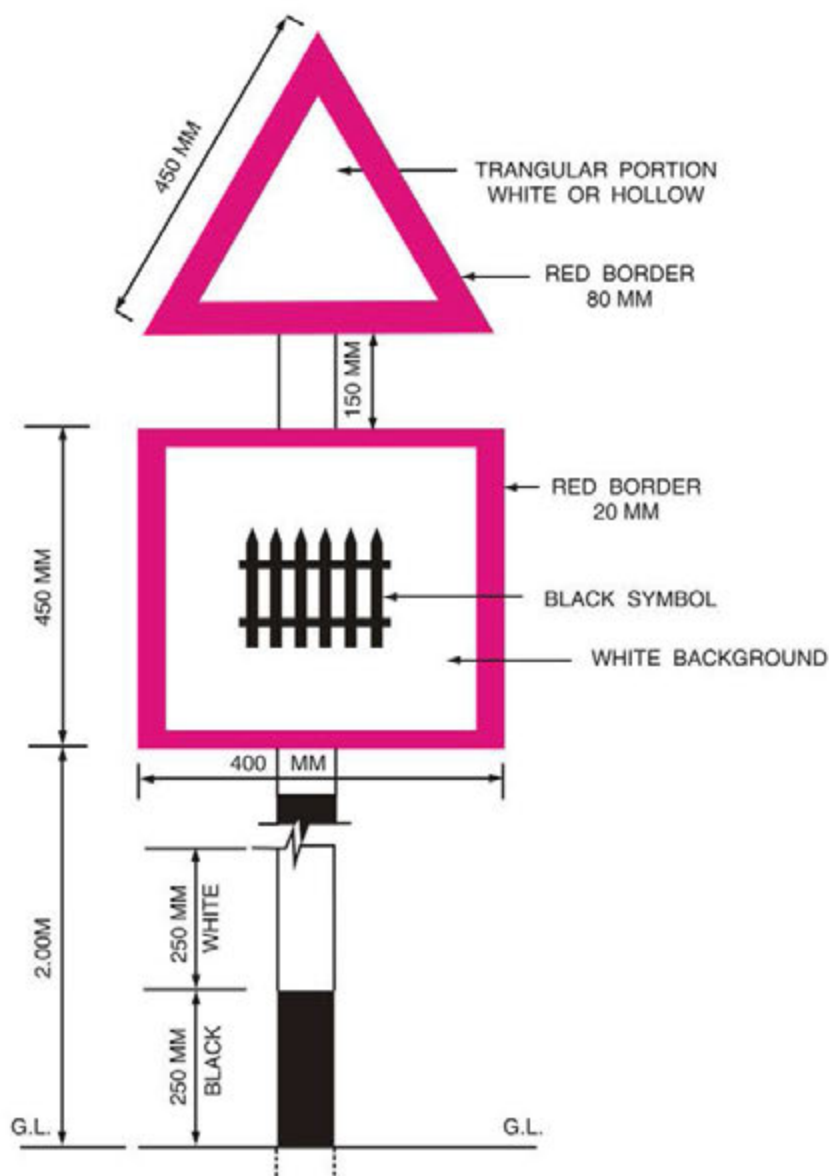
**WARNING SIGN TO BE PROVIDED ON
ROAD APPROACHES OF ALL MANNED
LEVEL CROSSINGS
REF : C 37 OF MOTOR VEHICLE ACT**



NOTE:-

- i) THESE BOARDS ARE TO BE PROVIDED ON BOTH THE ROAD APPROACHES TO ALL MANNED LEVEL CROSSINGS AT 50 - 100 M FROM LEVEL CROSSING. IN HILLY TERRA IN DISTANCE MAY BE REDUCED TO 30 - 60 M.
- ii) PAINT USED SHALL PREFERABLY BE OF LUMINOUS VARIETY.
- iii) THESE BOARDS ARE TO BE PROVIDED BY THE ROAD AUTHORITIES.

**WARNING SIGN TO BE PROVIDED ON
ROAD APPROACHES OF ALL MANNED
LEVEL CROSSINGS**



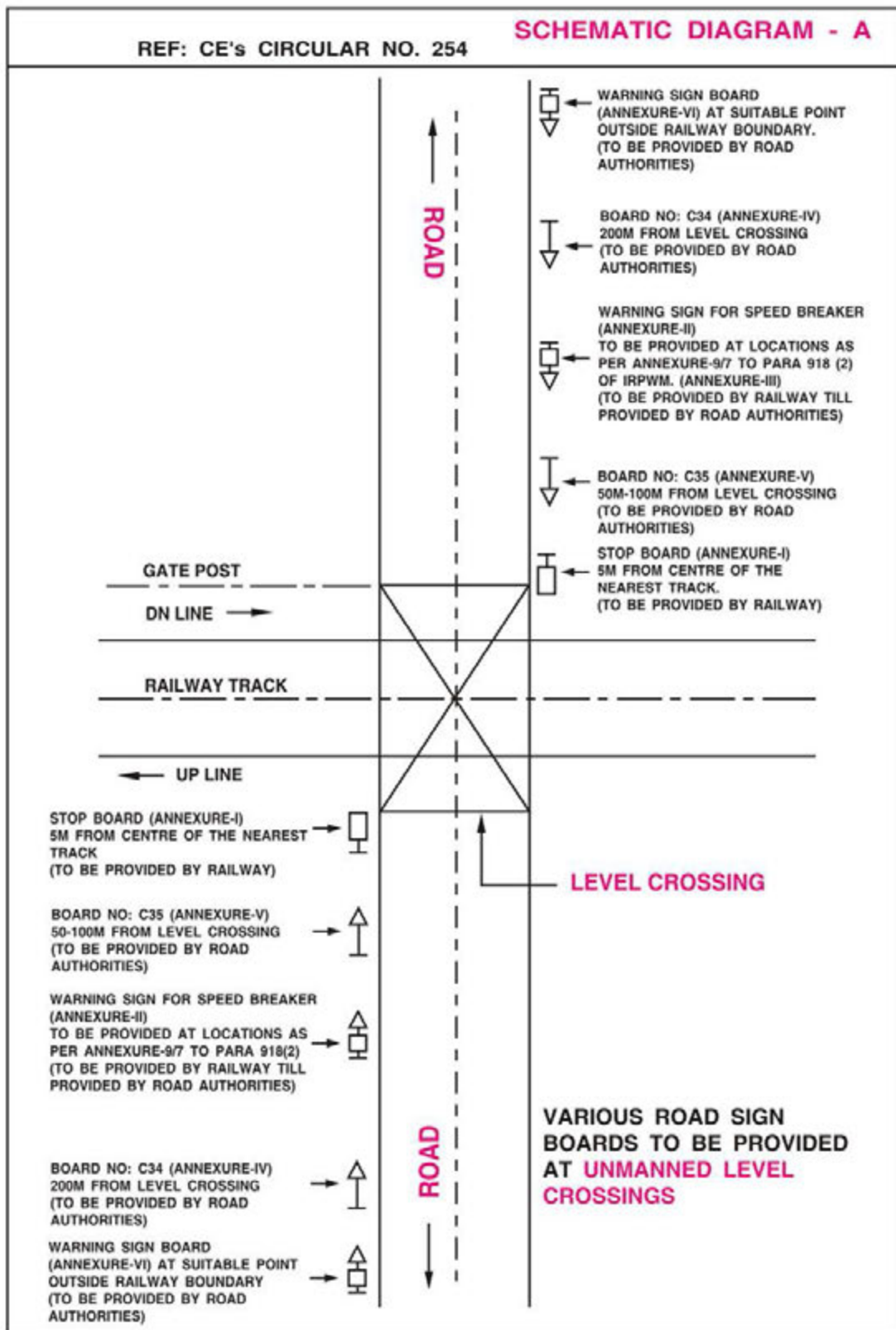
NOTE :-

- i) THESE BOARDS ARE TO BE PROVIDED ON BOTH THE ROAD APPROACHES TO ALL MANNED LEVEL CROSSINGS AT SUITABLE POINTS OUTSIDE THE RAILWAY BOUNDARY.
- ii) PAINT USED SHALL PREFERABLY BE OF LUMINOUS VARIETY.
- iii) THESE BOARDS ARE TO BE PROVIDED BY THE ROAD AUTHORITIES.

ANNEXURE - XII

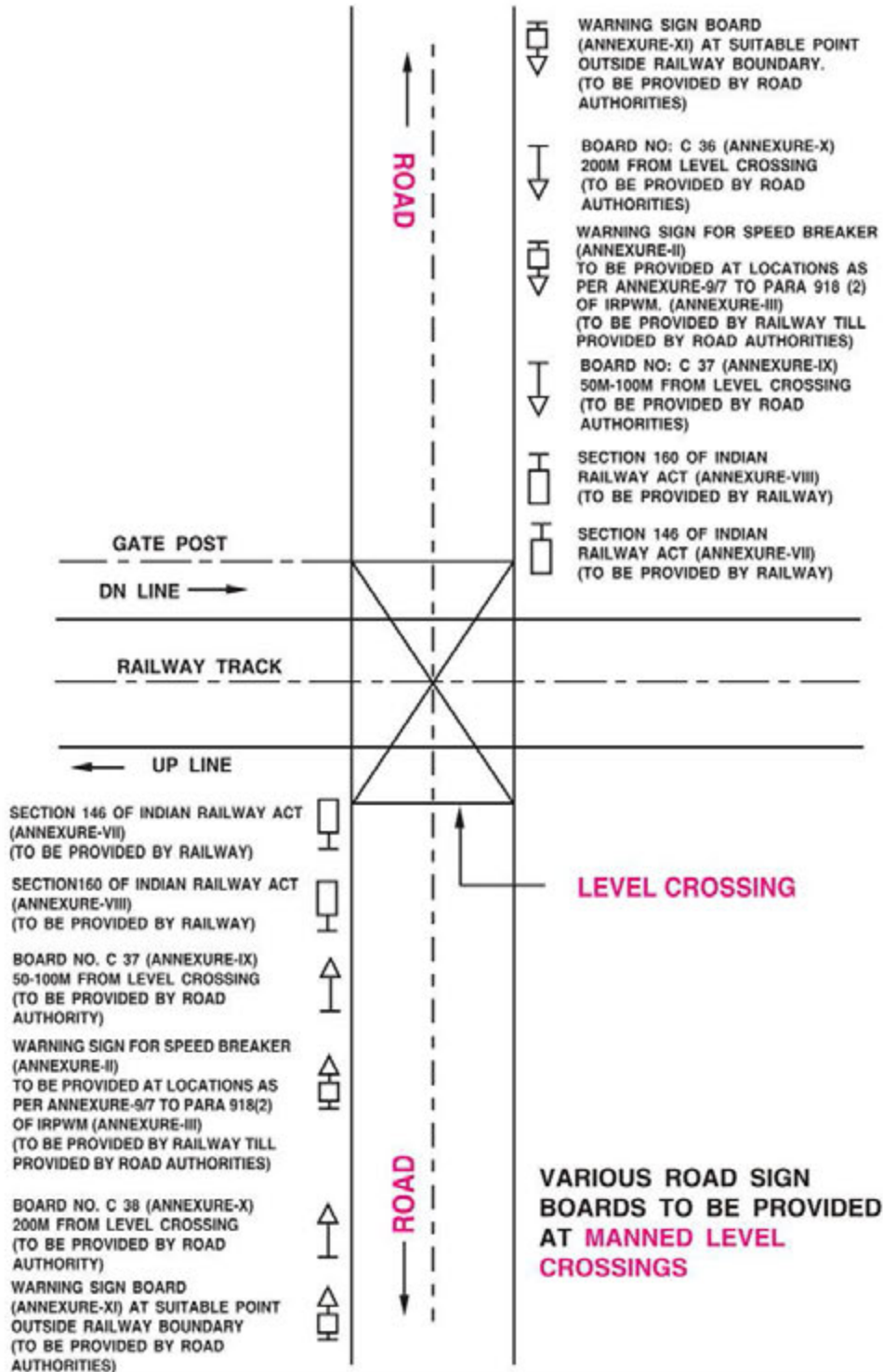
REF: CE's CIRCULAR NO. 254

SCHEMATIC DIAGRAM - A

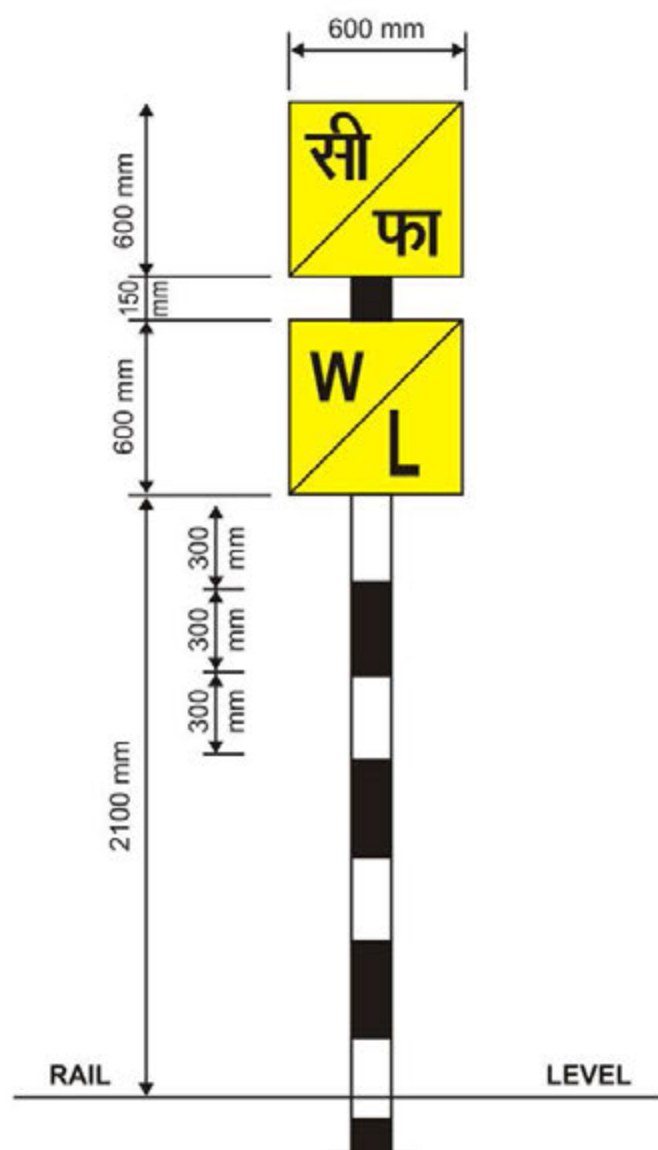


SCHEMATIC DIAGRAM - B

REF: CE's CIRCULAR NO. 254

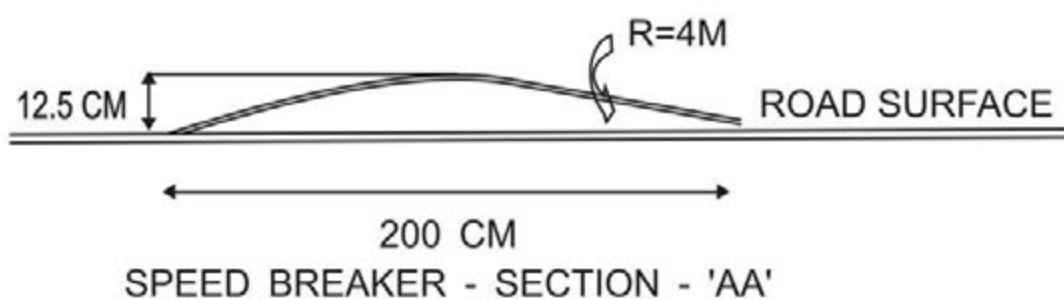
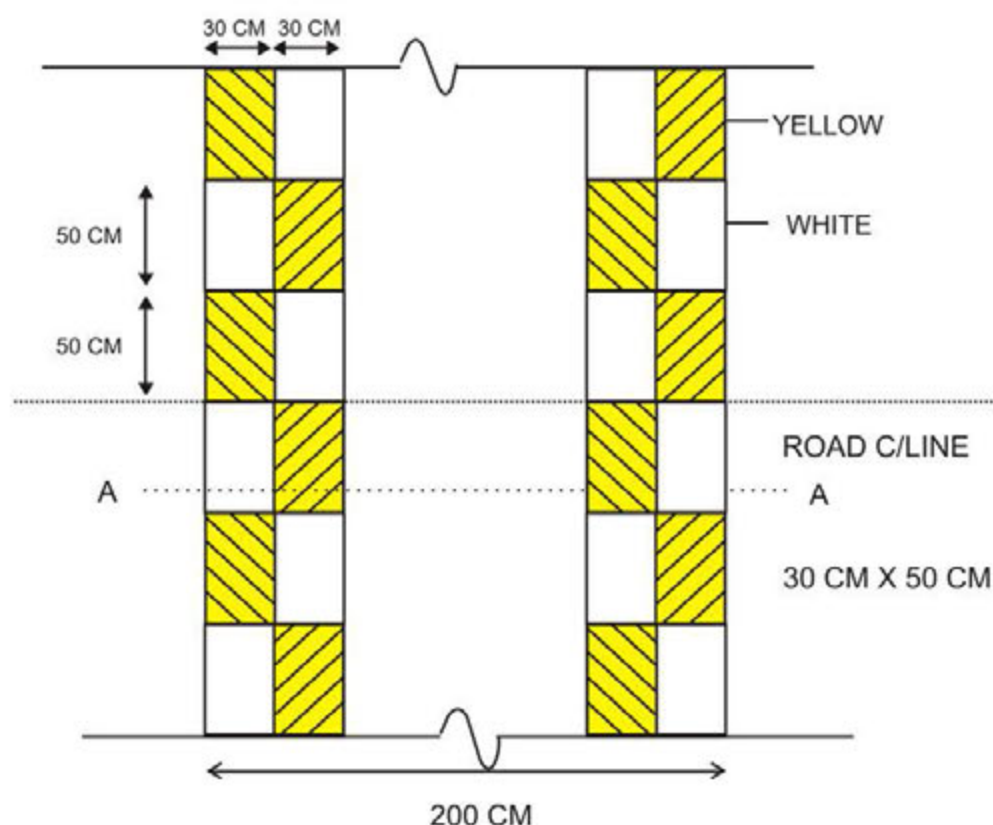


DETAILS OF WHISTLE BOARD ON THE APPROACH OF A LEVEL CROSSING



IRPWM
ANNEXURE - 9/5 PARA 916 (1)

SPEED BREAKER DESIGN



IRPWM
ANNEXURE -9/6 PARA 918 (1)

NOTE:-

THE HUMPS SHOULD EXTEND TO THE FULL ROADWAY WIDTH. APPROPRIATE BASE COURSE MATERIAL SHOULD BE EXTENDED OVER THE SHOULDERS FOR PLACING THE HUMPS OVER THESE.

CHAPTER – XII

Actions for improving safety at manned level crossings :

- (i) Ensuring that the GWR is correctly framed and there is no ambiguity between the GWR and SWR.
- (ii) Ensuring that banner flags are placed across the track when the gates are in open condition (in case of non-interlocked gates). Even automatic banner flag arrangements have been commissioned at some important gates.
- (iii) Providing Voice recording communication arrangement between the SM and Gateman.
- (iv) Ensuring that the gate lodge is so located that proper visibility for the gateman is available towards road traffic as well as the rail traffic.
- (v) Conducting special counseling session for SMs and GKs to ensure that they understand each other properly.
- (vi) Assessing the commercial load of SMs and wherever it is excessive, proposals are to be processed to off- load these commercial duties in order to give adequate time for operational duties.
- (vii) Conducting Special safety drives to check the whistling habit of LPs and motormen on approaches of level crossings.

Public Awareness activities for Prevention of LC accidents :

- ✦ Broadcasting advertisements in local news channels, Cable network, FM radio and Cinema Halls.
- ✦ Publishing display advertisements in national and local news papers.
- ✦ Conducting Road shows & Puppet shows.
- ✦ Displaying banners near level crossings and market places.
- ✦ Distributing hand bills, pamphlets.
- ✦ Conducting counseling sessions for road users in co-ordination with transport authorities.
- ✦ Conducting SMS campaigns.
- ✦ Interaction with press.
- ✦ Organising sports tournaments, walkathon etc. with motto of "Safety at Level crossings".
- ✦ Taking assistance from local administration and NGOs to make the campaign reach schools and colleges.

DISCLAIMER

Utmost care has been taken to print letters, instructions, rules and drawings accurately in this compendium. However, in case of any mis-print or for authenticity, the original source may be referred.

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD**

No.2014/Safety(A&R)/Level Crossing (Pt.)

New Delhi, dated 22.05.2014

The General Managers,
All Indian Railways.

Sub: Deployment of Gate Counselors/Gate Mitra on unmanned level crossings (UMLCs).

Ref: (i) Board's letter No.2009/Safety(A&R)/14/3 dated 02.09.2009
(ii) Central Railway's letter No.SFT/UMLC dated 09.10.2012
(iii) Board's letter No.2013/E&R/8(1)/1/Proceedings dated 08.05.2013
(iv) W.C. Railway's letter No.WCR/HQ/JBP/Safety-337 dated 29.04.2014

The issue of providing Gate Counselors/Gate Mitra on important UMLCs was discussed in GMs conference held on 3rd & 4th April, 2013 vide para 10.4. The minutes of above conference were circulated vide Railway Board's letter dated 08.05.2013 under reference. The said para 10.4 reads as under:-

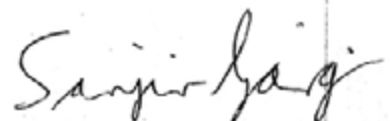
"CRB emphasized the need of spreading awareness in the rural area to reduce the number of accidents at unmanned level crossings (UMLCs). GM/C.Rly. informed that Gate Counselors have been engaged by Central Railway in some divisions to counsel people at the UMLCs. CRB and Adviser Safety desired that the C.Rly. experiment should be emulated by other Railways also."

In compliance of above, WCR has identified vulnerable UMLCs in each division and deployed Gate Counselors/Mitra at those locations. The Gate Counselors/Mitra at present have been deployed on 34 vulnerable UMLCs from 07.00 hrs to 19.00 hrs. The arrangement has been found extremely useful in ensuring safety on vulnerable UMLCs on WC Railway.

Zonal Railways may like to assess the performance and usefulness of deployment of Gate Counselors/Gate Mitra at UMLCs by Central Railway and West Central Railway and devise similar schemes to reduce level crossing accidents at UMLCs till the time they are eliminated by grade separation (ROB/RUB) or by merger/diversion/closures/manning. In this regard reference is also invited to directions of Hon^{ble} MR on 31.08.2009, communicated vide Railway Board's letter dated 02.09.2009 (vide para 5.2), which states as under:

"Manning of level crossing has to be given priority. If staff is not available it may be examined as to whether manning can be done under PPP."

DA/As above.


(Sanjiv Garg)
Adviser/Safety
22-05-14

✓ Copy to: Chief Safety Officers/All Indian Railways.

R.B.
Regd. No. 46
Date 12/8/14
GOVERNMENT OF INDIA (BHARAT SARKAR)
MINISTRY OF RAILWAYS (RAIL MANTRALAYA)
(RAILWAY BOARD)

11/8/14
No. 2014/Safety (A&R)/Level Crossing (Pt.)

New Delhi, dated August 11, 2014.

The General Managers,
All Indian Railways.
CMD, Konkan Railway Corporation Ltd.

Sub.: Elimination of Unmanned Level Crossings on Indian Railways.

1.0 In view of the large number of consequential accidents on unmanned level crossing gates and the resultant casualties which have been giving adverse publicity to the Railways in the media as well as Parliament, there is an urgent need to tackle this problem at the earliest. Presently, the following four options are available for elimination of unmanned level crossings :

- I. **Closure** – Closing unmanned level crossings having NIL/Negligible TVU.
- II. **Merger** – Merger of unmanned level crossing gate to nearby manned or unmanned gates or subway or RUB or ROB by construction of diversion road.
- III. **Provision of Subways/RUBs.**
- IV. **Manning** – The unmanned level crossings which cannot be eliminated by above means, are to be progressively manned based on rail-road traffic volume, visibility conditions, etc.

2.0 It is imperative to take immediate steps for complete elimination of all unmanned level crossings in a short span of time say, in one or two years. Hence, every Zonal Railway is required to examine the traffic pattern on each unmanned level crossing and decide early on one of the above mentioned options for closure of the same. The Zonal Railways need to realise the urgency for closure of the unmanned level crossings since the traditional pace of closure of UMLCs (6502 have been closed in the last 6 years with 8300 still remaining on the BG system), is not adequate and fresh time lines need to be drawn for each of the above four options.

3.0 Meanwhile, every Division should identify those unmanned level crossings where regular movement of school buses takes place and the same should be immediately taken up for manning/closure on priority.

4.0 Also, an analysis of accidents on UMLCs which have taken place in the last three years, should be done in the next fortnight and they should be identified for closure by one of the above means.

5.0 The requirement of extra posts of Gatemen will arise. The efforts made in creation of Gatemen posts in last 5 years may be brought out while sending proposals for posts creation to Board. Needless to emphasise that action at Zonal level for identifying surplus posts be taken before the proposals are sent to Board. A complete Action Plan is to be drawn up by every Zonal Railway in this regard and sent to Board by 31.8.2014.

This letter is issued with the approval of Railway Board (CRB)

Sanjiv Garg
(Sanjiv Garg)
Adviser (Safety),
Railway Board

Copy to Chief Safety Officers, All Zonal Railways.

Addendum & Corrigendum No. 95 to G&SR 2011 published by S.E. Railway.

- a) Add the following as (g) of sl. No. 9(ii) of SR 4.50.01 :
(g) From Repeater Whistle Board (R W/L) up to level crossing
- b) Revised (i) of sl. No. 9 of SR 4.50.01 as under :
9(i) from whistle (W/L) board to Repeater whistle (R W/L) board
- c) Replace the existing SR 4.50.02 with following :

SR 4.50.02 – WHISTLE BOARDS

- a) Whistle boards are provided with a view to prewarn the Loco Pilot about an approaching level crossing and for sounding the whistle/horn (vide serial no. 9(i) and (ii) under SR 4.50.01) to warn the staff who may be working on the line, as well as the gateman and road users at level crossings about the approaching train. The loco pilot shall sound the whistle/horn intermittently up to the site of work from 'W' board. At level crossings, an intermittent whistle from W/L Board to R W/L Board and continuous whistle from R W/L Board up to level crossing shall be sounded.
- b) Types of whistle boards –
There are three types of whistle boards. The board shall consist of a 0.60 m. square board painted in yellow with appropriate letters in black and fixed on a post painted with 0.3 m. high bands of white and black keeping the underside of the board at a height of 2.0 m above rail level. The whistle boards should be bilingual as mentioned in Annexure – 9/15 of IRPWM and erected along the track. The board shall not be illuminated at night.
 - i) Whistle board as per fig (A) with the letter 'W' of size 0.3 m high shall be provided on approaches of curves and cuttings at a point from where visibility of the line ahead is limited to 800 m or less on BG.
 - ii) Whistle boards as per fig (B) with the letters (W/L) of 0.2 m high shall be provided on the approaches of all unmanned and manned level crossings at a distance of 600 metres on either side of the level crossing.

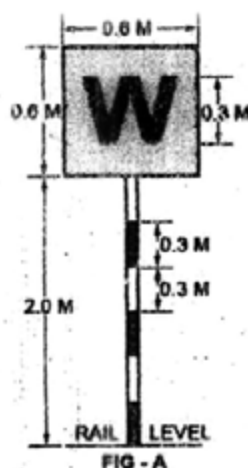


FIG - A
Whistle Board at Curves and Cuttings

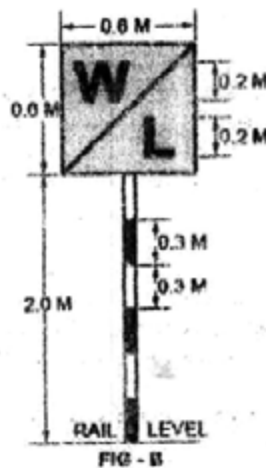


FIG - B
Whistle Board at Level Crossings

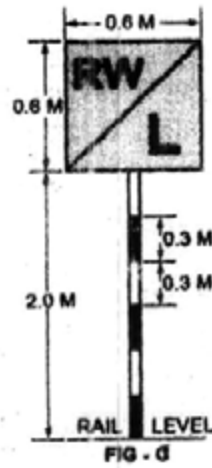


FIG - C
Repeater Whistle Board at Level Crossings

- iii) Repeater whistle Boards as per fig (C) with the letters "R W/L" shall be provided on the approaches of all level crossings at a distance of 250 mtrs. on either side followed by W/L boards.

NOTE : If W/L board of one LC is located near the R W/L board or within the continuous whistling zone of another LC (i.e., within 250 mtrs of LC), then the whistling code of RW/L board should be followed.

Chief Operations Manager

Dated : 13.01.2015.

No. OPS/50/G&SR/A&C/Pt. I

Copy to : Director/Safety/Railway Board for information please.

- 1) DRMs, Sr. DOM/DOM, Sr. DSO/DSO, Sr. DSTE/DSTE, Sr. DEN/DEN, Sr. DEE(OP)/DEE(OP) & Sr. DME/DME – KGP, CKP, ADA & RNC.
- 2) Principal – ZRTI/SHY, ELTC/TATA, STC/KGP
- 3) PCE, CCE, CSTE, CME & CSE-3, E. Ry./GRE.

