

PRESENTATION

On

WORKING INSTRUCTIONS

For

LEVEL CROSSING GATES

By -

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POLICY INSTRUCTIONS

*OPERATIONAL
VIEW POINT*

Board's letter No. 83/WI/LX/16 dt. 26/03/83

- Permitted 'B' & C' class level crossings to be normally kept open to road traffic
- Such LC Gates decided at DRMs level and approved by CE and CTSS #
 - Applicable for LC Gates with heavy traffic.
 - Such Gates to be notified if they fulfill the following conditions:

*CTSS worked under COPS (COM) during that period*

7 Essential Conditions

- LC Gate not on sub-urban Section
- Not allowed on Automatic Section (or APB)
- LC Gate with Lifting Barriers
- Telephonic Commn. & Pvt. No. exchanged
- Track at LC straight on either side with clear view of train
- When Gate open Red Flag displayed
- Provided Whistle Boards

***Feasibility of Exchange of Pvt. No.
Not a Condition***

Bd's letter No. 83/WI/LX/16(2) dt. 24/10/85

- This Letter further provides for LC Gates Open to Road Traffic :
- **3 Additional Safe Guards Provided**
 - I Rumble Strips on Approaches
 - II Clear Visibility in Specified Zone
 - III Job Analysis of Gateman

- *Job Analysis of ASMs work-load*

- *Feasibility of of Pvt. No.*

Still not one of the Conditions

Vide Bds letter 2000/Safety(A&R)/19/39 Pt. dt 1.10.09 - feasibility of ASM to exchange Pvt No. included to make a LC Gate with its normal position 'open to road'

Inter-Locking of L C Gates

Comprehensive Instns on Inter-Locking issued vide Bds Letter no 77/W3/SG/LX/2 dt 16.3.1979

- For 'Spl' & 'A' Class LC's, both within & outside Stn Limits - LC Gates should be Inter-Locked
- For 'B' & 'C' Class LC's -- shall be kept normally closed to road –
 - Within Stn Limits – Interlocked when in
 - i) Suburban section, & in
 - ii) Non-Sub section – Where Gates are operated by Cabin Staff and are to be *Interlocked with Stn Signals*

What happens when Station is Panel Interlocked ?

- Outside Stn Limits – Interlocked in Suburban sections

Bd's Letter No. 2002/SIG/PI/1 dt. 09.7.02 on
PANEL INTERLOCKING

- **Para A 3(i)** The station will be fully Track Circuited in the Station Section
- **Para A 3(vi)** *No Manned Traffic Gate would be Non-Interlocked in Station Area*
- Vide Bd's Letter No. 2002/SIG/PI/1 dt. 05.5.03, the word "Station Area" was replaced by "Station Section"

- *Above provisions not possible to follow*
- *Not desirable as when train stabled on Loop Line LC Gate will be closed for long period*
- *Plan shifting Gate outside Station Limits*
- *CRS commented adversely when giving clearance of layout of Satlana Station, JU Division, NWR (Consequent to GC)*

Revision of SEM

- Policy on Interlocking (Bd.'s letter 16.3.79) revised letter 2010/SIG/LX/2 dt. 11.10.2010
- Within station limits
 - Spl. to B2 class interlocked with station signals.
 - C class (manned) > 3000 Cat I and > 2500 Cat. II be interlocked with station signals if operated from cabin, in sub-urban section all such gates interlocked
- Outside station limits
 - Spl. to B2 class interlocked
 - C class (manned) > 3000 Cat I and > 2500 Cat. II be interlocked with gate signal in Automatic Territory only

Location of Gates – Station Limits

- *Bd's Letter 96/CE-I/LX/AC/6 dt.31.5.96*
- **LC Gate within Station Limits – not desirable**
- **Efforts be made to shift existing LCs to outside Station Limits. --- *In case, not possible***
 - Interlock Gate, or
 - Operate Gate from Cabin
- ***Bd's Letter No. 2000/Sig/LX/Pt. dt 5.5.2003***
- CE dte letter dt 31.5.96 not mandatory- efforts only to be made to shift LC Gates
- Mandatory req of I/Locking LC Gates laid down in Bds letter dt 16.3.1979. Necessity of I,/Locking LC Gates will be governed by these Instns

TRAFFIC & ENGG LC GATES

- **Para 909 of IRPWM defines:-**
 - **TRAFFIC GATE**
 - Located between outer-most Stop Signals
 - Manning and Operation with Optg Deptt
 - LC Gate & structures maintained by Engg Deptt
 - **ENGINEERING GATE**
 - Located beyond outer-most Stop Signals
 - Manning and Operation with Engg Deptt

Relevant words are outer-most STOP SIGNALS

- **Provision in G&SR**

- SR of some of the Zonal Railways define “Traffic / Engg” Gates
- Northern Railways **SR 16.03/1** defines:
 - **Traffic Gates** between *outer-most* Signals
- Need to follow a uniform policy given in IRPWM

Classification of Manned LC Gates

**Bd's letter No. 2001/CE-I/LX/AC/01 (data)
dt. 25-09-2002**

Class and Criteria of LC Gates defined

Spl	TVUs > 50,000
A	TVUs > 30,000 , or Line Cap Utl > 80% on S/Line & Rd Veh > 1,000
B	TVUs > 20,000 , Rd Veh > 1,000
C	To be decided <i>Above Priority even for LC Gates Sanctioned for Manning</i>

Norms for LC Gates – “Normal Position Open to Road Traffic”

- To be decided on quantum of Road / Rail traffic
 - New Class of LC Gates , **B-1**
 - TVUs > 25,000
- Spl, A & B-1 Class LC Gates to be kept – Interlocked/Signalled & normally open to road

Norms for LC Gates – “Normal Position Closed to Road Traffic”

- To be decided on quantum of Road / Rail traffic

Normal Position of “B” Class of LC Gates with TVUs < 25,000 - To be kept closed to Road

Bd's letter No. 2003/CE-I/LX/59 dt. 11-06-03
on
Manning of Level Crossings

- **Criteria and priority for Manning LC Gates**

Category	Visibility	TVUs
Cat - I	Clear	> 6000 and Rd Veh > 180
Cat - II	Restd	➤6000 and Rd Veh > 120 No manning if Motor Vehicles do not ply regularly
Cat - III	Restd	➤3000 & < 6000

Census of LC Gates

- Multi-Disciplinary Team of CE, S&T, Tfc
- Once every 3 years
- 7 days census
- Figures of census –
- No. of Trains x No. of Road Vehicle Units
- TVU “1000” represent as TVU (20 x 50)

Census not practically possible

Manning of LC Gates

Proposals for Manning - process with CSO

- Safety Deptt now Multi-Disciplinary
- *ASMs' work load relevant – Telephone connection with Gate*
- *Manned Gates affect “Line Capacity”*
- *Hence Proposals for Manning - process through COMs*
- *De-Manning LC Gates – TVUs < 80% of Criteria for Manning - Concept of De-Manning introduced –*
 - **First time ever**

Implication of Normal Position of LC Gates to Open to Road Traffic

- 2 Aspects relevant to consider before changing the normal position of LC Gates from “Closed” to “Open” to Road Traffic
 - Additional burden on ASM in exchange of Pvt No. with LC Gates Open to Road Traffic
 - “Right of Way” transferred from Rlys to Rd

- ***Burden on ASM***

On heavily populated urban areas, one station may have 4 - 5 LC Gates connected. Difficult to exchange Pvt Nos.

- Number of times Pvt No. exchange required is more when LC Gate - “Open to Road Traffic”
- Higher responsibility and burden on ASM when LC Gate - “Open to Road Traffic”
- Keeping LC Gate “Closed to Road Traffic” not practical

- ***Right of Way***

- Change of normal position from “Closed” to “Open” to Road Traffic – a step towards handing over the Right of Way from Railways to Road

- **TVUs are not Correct indication of quantum of Road / Rail Traffic**
 - TVUs calculated by multiplying Train and Road vehicle units.
 - 2 vastly varying scenarios as under:
 - *Very large number of trains on the section and lesser No. of Road vehicles*
 - *Very few number of trains on the section and very high No. of Road vehicles*

- *Where trains are very many and road traffic is less – Desirable to keep LC Gate “Closed to Road Traffic”*
- *Where trains are less and road traffic is high the Sectional Capacity will be poor / low. Block Sections will be long, speeds for trains will be low and closure timing of LC Gates will be high – Desirable to keep LC Gate “Open to Road Traffic”*

Provisions of IR P Way Manual

- **Para 907 (2) (b) – LC Gates Non-Int:**
 - Normally Kept **Closed to Road Traffic**
 - **Rly Admn** through **Spl Instructions** permit Normal Position – **Open to Road Traffic**
- **Rly Admn** means General Manager
- **Special Instructions** issued by COM
- Advance Correction Slip IRPWM No 100 dt 21.6.05 - All proposals for Manning process with CSO's

- **Para 907 (2) (d)** – LC Gates with “Heavy Seasonal Traffic”
 - Rly Admn permit Gates – “Open to Rd Traffic”
 - By issue of **Special Instructions**
- **Para 904** Annex – 9/1 - LC Gates, Normal Position – “Open to Road Traffic”
 - 7 Essential conditions Circular dt 26-02-83
 - IRPWM (A/Slips upto 18-6-99) Annex. 9/1 – Above decision by DRM, approved by CE and CTSS
 - Revised in later Circulars ; Approved by CE & CSO
 - Rly Bd proposed to modify through an A/Slip ; Approval of CE and COM. **A/SLIP issued**

All clearances for keeping LC Gates “Open to Road Traffic” by or on behalf of COM

Rly BD Circular No. 2006/CE-I/LX/WP dt 10/06/08

- Criteria for Manning has been revised as under:

Present Criteria	Revised Criteria
Category I: Vusibility – Clear TVUs > 6000 & Rd Veh > 180	Category I: All LCs including Restd. Visibility * cases where TVU is > 6000
Category II: Vusibility – Restd. TVUs > 6000 & Rd Veh > 120	
Category III: Vusibility – Restd. TVUs between 3000 - 6000	Category II: Restd. Visibility * LCs where TVU is between 3000 - 6000
* LCs having visibility < 800 meters for road users / train driver shall be considered as of Restd. Visibility	

Revised Criteria For Manning

Revised vide letter 2006.CE-I/LX/WP dt. 12.04.10

Present Criteria	Revised Criteria
<p>Category I: All LCs including Restd. Visibility * cases where TVU is > 6000</p>	<p>Category I: All LCs where TVU is > 3000</p>
<p>Category II: Restd. Visibility * LCs where TVU is between 3000 - 6000</p>	<p>Category II: Where. Visibility for Road user is < 800 mtrs. And TVU is >2500</p>
<ul style="list-style-type: none"> •Manning of LCs TVU is < 3000 be done if the State Govt./District Authority permit to close any UMLC located in the vicinity of such UMLCs or in spl. case involving safety with specific approval of GM. •All UMLCs on Rajdhani and Shatabdi should be manned. •Reduce No. of LCs by constructing diversion road to adjoining ROB/RUB/Road Under Bridge-letter No. 95/CE-I/LX/10 dt.15.2.95. 	

Provisions Under General Rules

- **GR 16.03 Road Traffic –**
 - Rly Admn issue **Special Instructions** permit LC Gates - normally Open to Road Traffic
 - Prescribe conditions – Gates to be Closed for passage of train
 - All such **Special Instructions** be deemed to be General Rules
- **In only one item COMs have the power to frame General Rules (Sec 47 Rly Act)**

Gate Working Instructions

- Consequent to a Gate Accident on SR, CRS's Recommendation (accepted by CCRS) – Rly Bd To Frame Uniform Instns for Operation of LC Gates
- Working Instns Uniform for all Rlys Circulated by Rly Bd- Letter no. 2000/Safety(A&R)/19/39 dt 8.5.2002
- Different types of LC Gates covered
 - A no. of Rlys represented against these Instns, and continued to follow their own systems
 - Main Issues were for LC Gates closed to Road
 - ASM not to advise Pvt No. every time to G/man before dispatching a Train in B/Section
 - Gateman could not open the Gate after passage of Train w/o exchange of P/No. with ASM

Gate Working Instructions

- For non-interlocked L/C gate with normal position “open to road Tfc. (Annex. IV para. 2(a) item no.V. and 2(b) item no.VI in above Circular dt 8.5.2002
- *Gate once closed must on no account be opened unless this is authorized by Station Master/ Switchman/Cabin man under exchange of Pvt. No.*
- *This was represented against by many Rlys*

Rly Bd clarified vide letter no. 2000/safety(A&R)19/39 dt. 4.11.03 - Gate once closed cannot be opened by Gateman (after passage of train) as there may be change in planning of train movement. etc

Revision Suggested :- modified & added

- **There is no need to get permission from ASM once train has passed the L/C gate & no Other train has been advised by ASM to Gateman**

Working Instructions of LC Gate

- REVISION Issued vide Bd's letter No. 2000/Safety (A&R)19/39 dt. 18-8-08 by Safety Dte.
- Clarification issued for **Single Line** as under : -
- LC Gates “Closed to Road Traffic; Gate can be opened ;
 - After Complete Passage of Train
 - Gateman has exchanged Pvt. No. with ASM and Obtained Permission
- LC Gates “Open to Road Traffic” ;Gate can be opened;
 - After Complete Passage of Train
 - No other train advised by ASM to be in relevant Block Section

Review of Working Instns

References recd from Rlys on Circular 8.5.2002

- Review of Working Instns done and fresh Instns issued vide Bds Letter dt 1.10.08 –
 - Rlys authorised to follow either Bds Instns of 8.5.2002, or C Rlys pattern of working, i.e.
 - G/man was authorised to open the Gate in case no P/No. exchanged earlier for a Train
 - However, ASM before despatching a train had to exchange P/No. with G/Man
- G/Man can Open Gate on D/ Line

Instructions dt 18.8.2008 for Single Line extended also for Double Line vide letter dt 15.12.2009.

Review – Working Instructions

- **Zonal Rlys empowered to Frame Gate Wkg Instns based on local conditions for all type of Manned LC Gates vide Bds letter no. 2000/Safety(A&R)/19/39 Pt dt 24.09.2010**
- **Transactions – exchange of P/Nos. between ASM & G/Man to be as less as possible**
- **LC Gates normally closed to Road – ASM can assume that LC Gate is closed; hence can despatch a Train w/o every time exchanging P/No. with G/man**
- **Opening of Gate to facilitate passage or Road Tfc, around every 20 Mins- Gate once opened after passage of Train should be possible to close again if Road Traffic build up & waiting is less**

Provision to be in SWR & Gate Wkg Instns

- **Gate Wkg Instns to be made on Zonal Rlys by COM's in consultation with CE/PCE**

Amendment Slip No- 123

- **INTERLOCKED L/C GATE DEFECTIVE**
 - Train Stops 3 times :-
 - For Caution Order at Station
 - At Gate Signal (One min by Day ----)
 - Short of level Crossing.
 - Vide Amendment Slip to GR “Train No Longer required to Stop Short of Level Crossing”.
- **Appendix “A” to G&SR of N.R**
 - Provided earlier “Caution Order to be Issued by Station Master to Notify a Defective Gate Signal”.
 - Item 4 Amendment Slip –123 Provides “Caution Order to be Issued by Station Master to Notify a Defective Gate Signal in OFF Position and In Case of No Light at Colour Light Gate Signal”.

CHANGE IN AUTHORIZATION

- Only one subject in G&SR, provides Powers of GR to the Authorised officer.
- Para 16.03 Level crossing
- All Instruction on L-xing gate received from Engg. Deptt. Or S&T Deptt - Rly Bd. Very few from Safety or TT Dte.

REVISED AMENDMENT SLIP NO. 119 & 122 N RLY

- SR – 16.03/1 AND 16.03/3 SPECIAL INSTRUCTIONS FOR WORKING LEVEL CROSSING GATES – PREPARED BY ENGINEERING BRANCH WITH PRIOR APPROVAL OF SR.DOM AND SR.DSTE
- DRM SHOULD RECOMMEND TO KEEP L-XING OPEN TO ROAD TRAFFIC – APPROVAL OF PCE & COM
- REPLACE WORDS CSO WITH COM AND SR.DSO WITH SR.DOM WHEREVER APPEARING IN THE G&SR BOOK
- POWER TO ISSUE WKG RULE & INSTRUCTION TO SR. DOMs.
- REPLACED DRM WITH SR.DOM IN S.R.G 2(a), S.R.G 2 (F) AND SR 4.19/1(iv)

Working Instructions of LC Gate

- **Safety Dte deals with the subject of Operational Rules ; Interaction with COM's & Sr DOM's ; very less --- WHY ?**
- **Check from SWR's -- When can an Engineering Non-Int Gate be opened after passage of the train ?**
 - Policy vague / silent earlier; SWR, & Gate Wkg Instructions mostly on earlier system / pattern
 - Rly Bd clarified vide letter dt. 04-11-2003 that the LC Gate can be opened only after train has reached B/Station ahead.
 - CRS and Zonal Rlys protested against this policy
- **Now clarified by Rly Bd -- Issue Amendments to SWR's & Gate Wkg Instns**

ACTION PLAN ON LEVEL CROSSINGS

- **ELIMINATE UNMANNED LEVEL CROSSINGS**
 - **LOW TVU's**
- **MERGER OF LC GATES**
- **SHIFT LC GATES BEYOND YARDS**
- **DEMANNING OF MANNED LC GATES**
 - **80% OF YARD STICK FOR MANNING**
- **LIMITED HEIGHT SUB-WAYS; PROPOSE WORKS OF RAISING OF TRACK**
- **PRIORITY COMPLETION OF ROB's / RUB's**
- **PRIORITY INTERLOCKING LC GATE**

- INDEPENDANT TF CONNECTION - LC GATE WITH ASM/SM
- SELECTIVE CALLING FACILITY
- LC BARRIER CLOSING TIME TO BE REDUCED
 - SHIFT GATE BEYOND SIGNAL OVER LAP
 - SHIFT GATE BEYOND BLOCK OVER LAP
- NORMAL POSITION OF GATE CHANGE FROM “CLOSED” TO “OPEN” TO ROAD TRAFFIC
- PERMIT OPENING OF GATE AFTER PASSAGE OF TRAIN – BD’s LETTER 18/8/08 & 15/12/2009