

NE Rly HQ
Gorakhpur.
W/29/O/A/
Pt.I/1
April 18, 1990.

Bridge Circular No. 4R(1990)
Circular revised on 18/4/1990

- The Divl. Railway Manager(Engg.),
SPJ, SEE, BSB, LJM, IZN.
- The Chief Workshop Manager(Bridges),
Gorakhpur.

Sub:- Bridge Inspection Schedule.

Consequent to the acceptance of recommendations of the Bridge Sub-Committee by the Board, there will be four types of inspection schedule for bridges as mentioned below :

1. Routine Inspection:

Permanent Way staff on their normal schedule of inspections of track will inspect track over bridges alongwith cursory inspection of bridge structure. This will be called 'routine inspection'.

2. Normal Inspection:

- .1 Aim of the normal inspection will be to take notice of deterioration in condition or development of defects, such as, new cracks or worsening of old cracks; falling or displaced masonry; girders displaced from bearing ; walls out of plumb or any other defect which might cause risk to the safety of the bridges.
- .2 Periodicity of such inspection will be as laid down in Para 1001 to 1004 of IRW&W Manual as under:

Inspecting official	Type of bridge	Frequency of inspection.
PWI	Bridges carrying track.	Once in a year before monsoon.
BRI	(a) Steel work of all girder spans in track above 12.2m including road and foot-over-bridges.	Once in 5 years by rotation.
	(b) Overstressed bridges.	At least once in a year.
AEN	All the bridges	Once in a year after monsoon
DENS/ Sr.DENS	All the important bridges and bridges referred by their AEN.	Once in a year.

3.

Detailed inspection of old bridges:

- .1 This inspection will be done by XEN/Br. Open Line under CWM/Br. for categories 01, 03 & 04. The arch bridges in category 02 will be inspected by Sectional Sr.DENS/DENS. Special bridge books will be opened for categories 01 to 04 as mentioned in para 3.2 below.
- .2 This will include detailed examination of the structure, taking into account the special features. An assessment of the defects will be made and backed up by dated photographs where necessary. Interval of such inspection will be indicated below :-

Periodicity of Inspection of old bridges:

Cate-gory	Type of bridges	Schedule of detailed inspection.
01	C.I. screw piles.	Once in 4 years by rotation covering 25% each year.
02	Arch bridges.	"
03	Bridge structures constructed prior to 1925 particularly with tall piers, i.e. more than 6.00m in height.	"
04	Over-stressed bridges.	Once a year.

- 3 Detailed inspection of old bridges will be carried out by the nominated officer on the Bridge registers and their observations will be recorded in red ink with date. Extract of these observations which indicate any defect/distress will be communicated to Divisional HQ & to Dy.CE/FCW.

4. Inspection of distressed bridges:

- 1 Distressed bridges are classified in two categories as per Circular No.2R dated 18/4/90.

<u>Code</u> D1	<u>Category</u> <u>No.I</u>	: Those requiring rehabilitation immediately, say within a year's time.
D2	<u>Category</u> <u>No.II</u>	: Those required to be kept under observation and to be rehabilitated on a programmed basis.

- 2 Level and periodicity of such inspection will be as below:

Code	Category	Inspection	
		Level	Frequency
D1	I	Sectional PWI	Once in a month during trolly inspection.
		Sectional AEN	Once in two months during trolly inspection.
		Sectional Sr.DEN/DEN	Once in 3 months.
D2	II	Sectional PWI	Once in 3 months during trolly inspection.
		Sectional AEN	Once in 6 months during trolly inspection.
		Sectional Sr.DEN/DEN	Once a year
		Territorial CE	50% of bridges once a year.

- 3 CBE will also inspect 20% of D2 category bridges every year, specially those to be included in FWP.
- 4 Where distress is in steel girders, inspection shall also be done by XEN/Bridges/Gorakhpur.
- 5 Cases referred by Sr.DENs/DENs shall also be inspected by Territorial CEs.

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4. The inspection of categories D1 & D2 as laid down above will be recorded on separate Bridge Registers to be opened & maintained by Sectional AENs. Sectional Sr.DENs/DENs will record their dated observations on these registers. These registers will be named as 'Distressed Bridge Registers'.

5. Special inspection:

1. Special inspection shall be carried out on the slightest observation of distress such as flattening of arches, loss of camber etc. by any inspecting officer/official, as a result of deterioration or change in loading resulting in additional stresses. Re-assessment of strength of structure will be done for revised loadings & introduction of multiple engine operations etc.
2. Special testing and structural analysis, if considered necessary by CBE, shall also be done and kept on record.
3. Such inspection shall be carried out for a bridge so identified by an officer from HQ nominated by CBE.

6. This circular supersedes Bridge Circular No. 4 of 1989.

Amant
(RN Goil)
Chief Engineer

Distribution:

- CE(Con)/GKP for information.
- CBE, CGE, CE/East, CE/West for information.
- Dy.CE(Br.)/HQ, Dy.CE/FCW, Dy.CE/T-1, Dy.CE/Pl. & Dy.CE(Stores)/GKP for information.

S/c for case no. W/29/O/W-1