

Bridge Circular No.9 of 1990

NE RLY HQ
Gorakhpur.
W/29/O/A/Pt.I/1
Jan.10, 1990.

- The Divl. Railway Manager(Engg.),
N.E. Railway,
IZN, LJN, BSB, SEE, SPJ.
- The Chief Workshop Manager(Bridges),
N.E. Railway,
Gorakhpur Cantt.

Sub:- Assistance to the Bridge Inspectors.

In the meeting with BRIs held on 14th December, 1989, certain points were raised by them requiring the assistance of the division for smooth working.

2. BRIs and their staff should not be diverted to other than bridge works. Sonpur Division has been entrusted the work of BKI/SEE vide GM(P)'s letter No. E/210/5/Bridge Construction/Pt.III(IX) dated 8.12.1989 and therefore, it should be ensured that BRIs are utilised strictly for the bridge works. Copy of the duties and responsibilities as enshrined in the Indian Railway Way & Works Manual is enclosed as Annexure I for the purpose.
3. Division should render necessary assistance in getting painting work done below the seat of the sleepers on girder bridges. P. way staff should, therefore, be deployed with the bridge staff on important bridges.
4. Greasing and painting of the girder bridges upto 12.2m span is the responsibility of the division. Past experience shows that this work is not being done regularly. PWIs' gang should be trained and IOWs should be instructed to get the painting work done regularly.
5. In SPJ Division no suitable accommodation has been provided to the BKI for his stores. The proposal should be included in 1990-91 Works Programme and work done on priority.
6. Residential accommodation should be provided to the BRIs treating them as essential staff on priority basis.
7. In Sonpur Division there is no boundary wall and there are chances of pilferage. The boundary wall should be provided with fencing on top priority.
8. In Varanasi Division the boundary wall is very low. It should be raised by about 1m and then a proper fencing on the top should be provided.

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9. The bridges are the vital structures and need attention. Therefore, standing instructions issued in the various circulars should be followed.

This issues with the approval of Chief Engineer.

DA:- As above.
(with 10 spare copies)

(Signature)
19/1/90
(C.R.Sagar)
Chief Bridge Engineer
for GENERAL MANAGER (ENGG.)

Distribution:

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

EXTRACT OF PARAS OF IRWWM - DUTIES AND RESPONSIBILITIES
OF BRIDGE INSPECTORS

The following obligations are on BRIs as per IRWWM.

Para 403: DUTIES:

A - Essential duties of the Bridge Inspectors are :-

- i) Detailed periodical inspection of steel work of all girders spans over 12.2M(40') clear and of foot and road over bridges.
- ii) Erection of girders for all major bridges including turn table girders.
- iii) Maintenance of steel work of such girders and structures as may be specified.
- iv) Accountal and periodical verification of stores, tools and plant in his charge.

B - The Bridge Inspector shall carry out thorough inspections of steel - work of structures other than bridges as may be required from time to time.

Para 405: Safety of the line and working staff:

- (a) The Bridge Inspector shall ensure that the staff employed under him have a correct knowledge of the rules in which they should be examined periodically and on appointment, promotion.
- (b) He should take every precaution that works under traffic such as repairs and renewals of girders are carried out safely and in accordance with the rules for protection of the lines.

Para 407: Accompanying important inspections:

When the BRI has to accompany a special inspection such as that of the Chief Engineer, Dy. C.E., Regional Engineer, Divisional/District Engineer or the Bridge Engineer, The G.M. or the ACRS, he should be in possession of plans and current files of works to be inspected or likely to be required for discussion.

Para 408: The BRI shall ensure that all the tools and equipments such as compressors, pneumatic tools, derricks and jacks are used carefully and maintained in efficient working order.

Para 409. Special duties:

The BRI shall carry out as and when required, such work as measurement of stress under load, verification of impact and oscillation effects and prepare necessary sketches for girders and all other classes of steel work.

Para 410. Witnessing payments to staff:

- (a) Payment to both permanent/temporary staff on the section will be made by the Pay Clerk in the presence of the BRI who is responsible for correct identification of the payee and to satisfy himself that the correct amount is paid.
- (b) The certificate at the foot of the pay sheet should be filled in by the BRI as payment of each batch of workmen is completed. If a person is not present, "Not Paid" should be immediately written against his name, when subsequently payment is made, the kilometrage (mileage) or place at which he is paid should be entered and separately certified as such on the paysheet.
- (c) If the witnessing official is not available, another Inspector may be authorised to witness payment on the section.

Para 412. Establishment:

- (a) General conditions of railway service and rules relating to the conduct and discipline of railway servants are contained in paras, 142 to 157 and Chapter XVII of the Indian Railway Establishment Code.
- (b) (Medical Examination - The BRI shall ensure that all class IV staff appointed under him, except against temporary vacancies of less than six months duration are sent for medical examination for fitness for service. He should ensure that men in categories A and B specified in Regulation No.3 of Appendix III to the Indian Railway Establishment Code are sent for periodical medical re-examination as laid down in sub-rule 2 thereunder.
- (c) Service Cards (i) Service Cards for class IV staff should be prepared by the BRI on the prescribed form as soon as appointment in permanent vacancies are made and submitted to the Assistant Bridge Engineer/Asstt. Engineer for verification and signature when he next trollies over the section. These should be carefully maintained in the ABE/AENs of BRI's office as may be prescribed. (ii) All increments and promotion should be noted in the service cards and duly attested by ABE/AEN.

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- (d) Promotion to higher grades (i) The BRI should maintain in manuscript form, records of staff working under him in which he shall enter merits and demerits of each and when such entries are justified. (ii). The normal procedure for promotion should be by 'Trade Tests' qualified men will be entitled to promotion by seniority within their own groups.
- (e) Provisions in the payment of Wages Act. The workmen Compensation Act and other regulations - The BRI shall ensure that the rules laid down in the Acts & Regulations, as modified from time to time are strictly complied with.

Para 413 Correspondence and records:

The BRI shall keep his correspondence and plans up-to-date and ensure that the office records, registers and stores ledgers are maintained systematically and posted regularly.

Para 1002 Inspections by BRIs:

- (a) The BRI shall inspect, in detail, the steel work of all girder spans in track above 12.2M(40') clearly including that of road and FOBs once in 5 years, about 20% of the inspection being carried out in each year. Those girders which are overstressed and are to be kept under observation shall be inspected at least once in a year.

Notes of inspection should be recorded in ink in a register, Form Annexure - I and the register submitted alongwith diagrams, where necessary of loose rivets, distortion of members and loss of camber in prescribed forms to the Bridge Engineer through the Division/District Engineer by a specified date with a certificate appended at the end of the same to the effect :-

"I certify that I have inspected the steel work of the bridges shown in the register in accordance with standing orders for the year ending.....

The BRI should carry out all the repairs required to steel work as expeditiously as possible. The cleaning and greasing of girder bearings should be carried out at least once in three years and recorded in the register.

- (b) After scrutiny, the Div/District Engineer should endorse the register below the BRI's certificate and forward it by a specified date to the Bridge Engineer.
- (c) The Bridge Engineer shall examine the entries, initial against every bridge and classify the defects as follows :-

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- (i) those considered sufficiently important to be brought to the notice of C.E.
- (ii) Those requiring remedial measures to be undertaken by the bridge staff.
- (iii) Those which may be rectified by the Division/Distt. Staff. A list of defects classified as (i) shall be sent to the Dy. CE/RE with proposal regarding repairs.
A list of all defects under (iii) shall be sent to Div/Distt. Engineer concerned for requisite repairs.

The register should be returned by a prescribed date with necessary endorsement to the BRIs who shall take prompt action thereon.

Para 1007 The detailed inspection of bridge includes examination of:

- (d) The registers and girder seatings (i) To ascertain whether the position of the spans relative to the piers and abutments are correct.
- (e) The condition of steel-work - To ascertain whether the condition of paint is satisfactory and that no corrosion is taking place.
- (g) Trolley and man-ropes - To ascertain whether these are in structurally sound condition.
- (h) Foot-paths - To ascertain whether the foot-path are properly supported.
- (i) Road & footover bridges - To ascertain whether the structures are in sound condition.

Para 1011 Painting of steel-work

- (a) The cleaning, scraping and painting of steel work or iron work shall be done according to specifications. For proper adhesion of paint to metal, it is essential that the surface be clean and free from dirt, scale, deteriorated old paint and rust and should be dry at the time of painting.
- (b) Scraping shall be done in an approved manner. When paint shows no sign of blistering, scaling or cracking, it shall not be scrapped off as it affords a good foundation for the new coat; the surface in such cases should be brushed with soft-steel wire brush. Where patches of blistering, scaling or cracking have occurred, the surface should be scrapped down.

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- (c) For new steel work or surface scrapped down to the steel 3 coats of paint should be applied, the primary coat being generally red-lead. In case the original paints in good condition, one or two coats of red-oxide or approved quality paint should be applied as required.
- (d) Painting work shall be carried out by the Permanent Way Inspector or Bridge Inspector.

Para 1305 Inspection and Maintenance of Turn Tables:

A - Responsibility for satisfactory working :-

- (a) The Div/District Engineers are responsible to ensure that every turn-table on their division/districts is in satisfactory working order and the drainage of the pit is adequate for all conditions.
- (b) For adjustments of TTs and works which involve attention to girders, the Bridge Engineer or Works Manager of the Engg. W/Shops should arrange for his staff to carry out whatever is necessary including cleaning and oiling of bearings, on receipt of requisition from the Div/Distt. Engineers.

B - Day - to - day maintenance - The Optg/Mech. Department shall be responsible for the day-to-day maintenance of the TTs and all the working parts and for keeping the pits dry and free from water.

C - Painting of steel work - The steel work is liable to corrosion caused by drippings from engines. The life of the paint is therefore, considerably less compared to that of girders in track. The Painting of steel work should be done by the PWI or IOW or BRI in the same manner as for girder bridge. The year of painting of steel-work should be marked in white at one end of the TT girder.

D- Joint inspection by AEN and AME - (a) TTs shall be inspected jointly by the AEN and the AME every half year during the prescribed months and reports admitted to the Div/Distt. Engineer & Div/District Mechanical on their condition and specify what is necessary in the way of heavy repairs and the action taken to remedy the defects. The report may be in a specified form one copy being sent to the Bridge Engineer, if considered necessary.

During the inspection, the AEN should examine :-

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- i) The setting of the TT as per para 1303, the condition and tightness of hanger and other bolts and for play in the axles, of race-wheels. Faulty adjustments would result in bent race-wheel axles, battered rail-ends and damage to locking castings;
- ii) Care of turning and lubrication of all parts.
- iii) Care of working of locking arrangements.
- iv) Alignment of track and TT rail and relative levels.
- v) The masonry and the adequacy of drainage.
- vi) Condition of the steel work and tightness of rivets particularly at the field joints.
- vii) Creep anchorage both on TT and at the approaches.

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