



## Track Standards Bulletin #5

### Transition Ties, Regulatory Testing, Guard Rails, Crash Walls and Near Urgents Clarification

1 September 2020

Bulletin No. 005

**\*\*\*REVISED\*\*\***

Refer to Contents and add Appendix C1:

#### NEAR URGENT DEFECTS

Refer to Contents and rename Appendix E to:

#### ALLOWABLE TSO FOR HGIV DEFECTS - PASSENGER

Refer to Contents and rename Appendix F to:

#### ALLOWABLE TSO FOR HGIV DEFECTS - FREIGHT

Refer to Section 1.1 and add:

2. For the purposes of interpreting these track standards, where the word "should" is used, it shall be read as "shall".

Refer to Section 9.2 and add:

10. Permanent transition tie sets shall not be located within horizontal track curves nor within 200' (61.0 m) of spirals.
11. Temporary transition tie sets may be installed in maximum 2 degree track curves provided the following conditions are met:
  - a. MSR plate-works and fasteners are used throughout;
  - b. The transition tie set is removed from track within 180 days (6 months).
12. Temporary transition tie sets may be installed in 2 - 10 degree track curves provided the following conditions are met:
  - MSR plate-works and fasteners are used throughout;
  - Twelve 10' track ties are installed at 20" centers;
  - The transition tie set is removed from track within 28 days (4 Weeks).

Refer to Section 11.2.8 and revise to read:

8. Remove any windrowed ballast such that it does not extend more than 2½ in. (63 mm) above the top of rail. This will prevent damage to the regulatory testing equipment.

Refer to Section 14.6.2 and change to read:

2. The crossings shall be constructed per the Track Standard Section 14.3 and Standard Plan GTS-2301

Refer to Section 16.1.5 and add:

- b. Near urgent defect limits are found in Appendix C1 - Near Urgent Defects

Refer to Section 16.1.11 and revise to read:

11. Where speed related track geometry defects are detected during heavy track geometry vehicle inspections, Appendix E - Allowable TSO for HGIV Defects - Passenger and Appendix F - Allowable TSO for HGIV Defects - Freight may be used to determine the maximum Temporary Slow Order speed to be applied for the seventy-two (72) hour period immediately following the inspection.
  - a. If the track defect has not been repaired upon the expiration of the seventy-two (72) hour period, the temporary slow order speed must be revised, restricting trains to a maximum speed that is within the track class allowed by the severity of the defect(s). (See Appendix C - Priority Defects, Appendix C1 - Near Urgent Defects and Appendix D - Urgent Defects).

Refer to Section 16.3.b and revise to read:

- b. Except as prescribed in Track Standard Section 16.1 for PRIORITY and NEAR URGENT defects, if the defect is a speed-related type, a temporary slow order (TSO) must be placed restricting trains to a maximum speed which is within the track class allowed for the severity of the defect(s), (refer to Appendix D - Urgent Defects); or

Refer to Section 16.4.1 and revise to read:

1. The Track Supervisor or designate is responsible for:
  - a. Checking the deterioration in track geometry between regulatory tests.

- b. Ensuring that track geometry is maintained with the track geometry standards, or providing appropriate track protection; and,
- c. Accompanying the heavy track geometry vehicle when it is testing primary and secondary main lines in their respective territory.

Refer to Section 18.1.2.b.i. and add

- L/V ratios of 0.7 - 0.8 shall be used for testing. For safety reasons, test loads will be turned off when actual loaded gauge readings reach 58 in.

Refer to Section 18.1.2.b and delete 18.1.2.b.ii

Refer to Section 18.1.3. and delete 18.1.3.a and revise to read:

3. A Rail Flaw Inspection is a continuous search for internal defects using ultrasonic testing methods.

Refer to Section 18.5.1 and revise to read:

1. Where speed related track geometry defects are detected during HGIV inspections, Appendix E - Allowable TSO for HGIV Defects - Passenger and Appendix F - Allowable TSO for HGIV Defects - Freight may be used to determine the maximum Temporary Slow Order speed to be applied for the seventy-two (72) hour period immediately following the inspection.

Refer to Section 18.6.1 and revise to read:

1. Rail wear testing may be done simultaneously with track geometry testing when using HGIV technology or any other inspection vehicle capable of simultaneously testing.

Refer to Section 21.1.2 and revise to read:

2. Guard rails shall be installed when;
  - a. the centreline of new track installation or realignment is within 25 ft. (7.6m) of an existing structure,
  - b. piers of overhead structures are within 25 ft. (7.6 m) of centreline of track, and
  - c. the track speed is greater than 10 mph.

3. For permanent track installation/realignment resulting in piers of overhead structures to be located within 25 ft. (7.6m) of centreline of track, piers shall be retrofitted with crash protection.

Refer to Section 21.1.5, and revise to read:

5. Guard rails shall be installed as per Standard Plan GTS-1108.
  - a. Guard rails must extend a minimum of 8 ft. (2.5 m) off the end of a bridge or tunnel being protected, except in concrete tie territory, where the guard rails shall be ended at the end of the tunnel or back wall of the bridge consistent with Standards Plan GTS-1108.
    - i. For new track construction under overhead structures, the guard rails shall extend 60 ft. (18.3 m) beyond the piers of support overhead structure as per the Standards Plan GTS-1108.
  - b. The guard rails must converge at the end of the protected bridge, tunnel, or overhead structure where shown in Standards Plan GTS-1108.
  - c. Guard rails shall never be spaced less than 6  $\frac{3}{4}$  in. (171 mm) between the base of the running rail and the base of the guard rail.

Refer to Appendix B and change note on Table 43 to read:

- \* For Class 1 tracks where passenger trains / GO Trains operate with passengers onboard, inspection frequency shall be weekly.

Refer to Appendices and add new Appendix C1:

### APPENDIX C1 – NEAR URGENT

NEAR URGENT DEFECTS	Track Class						
	1	2	3	4	5	6	7
Passenger (mph)	15	30	60	80	95*	110	125
Freight (mph)	10	25	40	60	80	N/A	N/A
Wide Gauge <sup>†</sup>	57-5/8" (1462)	57-1/2" (1460)	57-1/2" (1460)	57-3/8" (1457)	57-3/8" (1457)	N/A	N/A
Narrow Gauge <sup>†</sup>	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alignment Tangent 62 ft. (18.9 m)	4-1/2" (114)	2-3/4" (68)	1-5/8" (41)	1-3/8" (34)	5/8" (16)	N/A	N/A
Alignment Curve / Spiral 62 ft. (18.9 m)	4-1/2" (114)	2-3/4" (68)	1-5/8" (41)	1-3/8" (34)	N/A	N/A	N/A
Alignment Curve / Spiral 31 ft. (9.45 m)	N/A	N/A	1-1/8" (29)	7/8" (22)	N/A	N/A	N/A

\* 100 mph for LRC Trains  
<sup>†</sup> See Track Standards Section 16.2.2 for more details on narrow gauge restriction.

Refer to Appendices and add new Appendix C1 (Page 2):

	Track Class						
	1	2	3	4	5	6	7
<b>NEAR URGENT DEFECTS</b>							
Passenger (mph)	15	30	60	80	95*	110	125
Freight (mph)	10	25	40	60	80	N/A	N/A
Surface	2-3/4" (68)	2-1/2" (63)	2" (51)	1-3/4" (44)	1-1/8" (29)	7/8" (22)	7/8" (22)
Warp 31 ft (9.45 m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Warp 62 ft (18.9 m)	2-3/4" (68)	2" (51)	1-3/4" (44)	1-5/8" (41)	1-3/8" (34)	7/8" (22)	7/8" (22)
Cross-Level from Design	2-3/4" (68)	1-3/4" (44)	1-5/8" (39)	1-1/8" (29)	7/8" (22)	3/4" (19)	3/4" (19)
Runoff at End of a Raise	3-1/8" (80)	2-3/4" (68)	1-3/4" (44)	1-3/8" (34)	7/8" (22)	5/8" (16)	5/8" (16)
* 100 mph for LRC Trains							

Refer to Appendices and add new Appendix C1 (Page 3):

NEAR URGENT DEFECTS (Multiple Defects)		Track Class			
		4	5	6	7
Passenger (mph)		80	95*	110	125
Freight (mph)		60	80	N/A	N/A
Multiple Surface	31 ft. Chord	N/A	N/A	3/8" (10)	3/8" (10)
	62 ft. Chord	7/8" (22)	5/8" (16)	3/8" (10)	3/8" (10)
Multiple Alignment	31 ft. Chord	N/A	N/A	1/8" (3)	1/8" (3)
	62 ft. Chord	N/A	N/A	1/4" (6)	1/8" (3)
For three or more non-overlapping deviations occurring within a distance equal to five times the chord length.					
*100 mph for LRC Trains					

**NOTE:**

**Wide Gauge:** The distance between the gauge points of the rails 5/8" (16 mm) below the top of the rail may not be more than:

**Narrow Gauge:** The distance between the gauge points of the rails 5/8" (16 mm) below the top of the rail may not be less than:

**Alignment 62 Tangent:** The deviation of the mid-offset from a 62 ft. (18.9 m) chord may not be more than:

**Alignment 62 Curve:** The deviation of the mid-ordinate from a 62 ft. (18.9 m) chord may not be more than:

**Alignment 31:** The deviation of the mid-ordinate from a 31 ft. (9.45 m) chord may not be more than:

**Surface:** The deviation from uniform profile on either rail at the mid-ordinate of a 62 ft. (18.9m) chord may not be more than:

**Warp 31:** The difference in cross level between any two points within 31ft. (9.45 m) apart in spirals may not be more than:

**Warp 62:** The difference in cross level between any two points within 62 ft. (18.9m) apart may not be more than:

**Cross-level from Design:** Deviation from zero cross-level at any point on tangent track or from designated cross-level or reverse elevation on curves and spirals may not be more than:

**Runoff:** The runoff in any 31ft. (9.45 m) of rail at the end of a raise may not be more than:

Refer to Appendix E and rename to:

ALLOWABLE TSO FOR HGIV DEFECTS - PASSENGER

Refer to Appendix F and rename to:

ALLOWABLE TSO FOR HGIV DEFECTS - FREIGHT

Refer to Appendix R and add to NOTE:

Note: When 8-hole plates are re-installed into track, only the 4 gauge spike holes shall be filled. Pin spike holes shall not be filled. Where pattern D is required, the plates shall be replaced with standard 6-hole, or MSR type plates.

Refer to Appendix V and remove in its entirety:

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These changes are effective immediately.

\*\*\*END\*\*\*

Signed:

Alan Britton

*Director, Track and Structure, Engineering and Asset Management*