

TRACK INSPECTOR EXAMINATION

Track Safety Standards (49 CFR Part 213)

- IDAHO NORTHERN & PACIFIC RAILROAD
- NEBRASKA CENTRAL RAILROAD
- NEW ORLEANS & GULF COAST RAILWAY
- WICHITA, TILLMAN & JACKSON RAILWAY

EMPLOYEE: _____ *INSTRUCTOR COPY* _____

ID NUMBER: _____ DATE: _____

INSTRUCTOR: _____

SCORE: _____

INSTRUCTIONS

CIRCLE YOUR ANSWERS DIRECTLY ON THIS EXAMINATION.

SOME QUESTIONS CONTAIN MORE THAN ONE RESPONSE—READ CAREFULLY.

YOU MAY USE THE CODE OF FEDERAL REGULATIONS TO COMPLETE THIS EXAMINATION.

GRADING KEY (85% Pass Rate)

MISSED	%
0	100
1	97.5
2	95
3	92.5
4	90
5	87.5
6	85
7	82.5
8	80
9	77.5
10	75
11	72.5
12	70
13	67.5
14	65
15	62.5
16	60
17	57.5
18	55
19	52.5
20	50
21	47.5
22	45
23	42.5
24	40
25	37.5
26	35
27	32.5
28	30
29	27.5
30	25
31	22.5
32	20
33	17.5
34	15
35	12.5
36	10
37	7.5
38	5
39	2.5
40	0

Select all the correct responses.

1. What is required when two or more tracks are inspected at once?

- a. Keep a record of the track that was traversed during the inspection.
- b. One inspector can inspect up to 4 tracks at once.
- c. Two inspectors can inspect up to 4 tracks at once.

Feedback & Evaluation

Correct Answer(s)

a, c

Correct Feedback

Two inspectors may inspect the tracks. Keep a record of the track that was traversed.

Select all the correct responses.

2. When performing track inspections, remedial actions depend on the severity of the defect. In general, what are the *possible* remedial actions to take when a segment of track does not meet track safety standards?

- a. Repair the defect immediately.
- b. Reclassify the segment of track to a lower class for which it meets track safety standards.
- c. Operate as Class 1 for 30 days if authorized by a designated person.
- d. Remove the segment of track from service.
- e. Always reclassify to Class 1.

Feedback & Evaluation

Correct Answer(s)

a, b, c, d

Correct Feedback

These are the four possible remedial actions to take when a section of track does not meet track safety standards. Review the Remedial Action Flowchart for possible actions to take when a defect is found.

Select the correct response.

3. In your track inspection, you find a segment of track that does not meet all of the requirements of 49 CFR 213.63 for Class 1 track. You are unable to correct the defect immediately, but you feel it is safe for train operation. What remedial action do you take?

- a. Notify the FRA.
- b. Supervise all movement over the track.
- c. Take the track out of service immediately.
- d. Allow traffic to continue at Class 1 speed for up to thirty days, if the track is safe as authorized by a qualified person.

Feedback & Evaluation

Correct Answer(s)

d

Correct Feedback

Traffic may continue at Class 1 speed for up to thirty days, if the track is safe as authorized by a qualified person. See 213.9.

Select all the correct responses.

4. What are the rules for operating over excepted track?

- a. No trains may travel over excepted track.
- b. Observe a 10 mph speed limit.
- c. Freight trains with five or more cars containing hazardous materials cannot travel over the track.
- d. Occupied passenger trains cannot travel over the track.

Feedback & Evaluation

Correct Answer(s)

b, c, d

Correct Feedback

Occupied passenger trains and freight trains with five or more cars containing hazardous materials cannot travel over the track. All other trains must not exceed 10 mph.

Select the correct response.

5. When must you prepare an inspection report for all track and rail inspections?

- a. On the day the inspection is performed
- b. Within 24 hours of the inspection
- c. Within 1 week of the inspection

Feedback & Evaluation

Correct Answer(s)

a

Correct Feedback

The FRA requires you to fill out the inspection report on the day of the inspection.

Select the correct response.

6. You have just measured the mid-ordinate of the curve with a 62-foot chord and it measures 4 1/2 inches. What is the degree of curvature?

- a. 4 degrees 00 minutes
- b. 4 degrees 15 minutes
- c. 4 degrees 30 minutes
- d. 4 degrees 45 minutes

Feedback & Evaluation

Correct Answer(s)

c

Correct Feedback

If the mid-ordinate measures 4 1/2 inches, the degree of curvature is 4 degrees 30 minutes.

Select the correct response.

7. On a segment of Class 2 track, you obtain a gage measurement of 4 feet 10 inches. What is the deviation of this measurement from the acceptable limits prescribed by the Track Safety Standards?

- a. 1/4 inch
- b. 1/2 inch
- c. 3/4 inch
- d. 1 inch
- e. 1 1/4 inch

Feedback & Evaluation

Correct Answer(s)

a

Correct Feedback

Gage measurement on Class 2 & 3 track cannot exceed 4 feet 9 3/4 inches. This measurement exceeds the limit by 1/4 inch.

Select the correct response.

8. On a segment of Class 2 track, you obtain a gage measurement of 4 feet 9 3/4 inches. What action should you take?

- a. The deviation does not exceed track safety standards. Arrange for prompt repair to avoid a track safety violation.
- b. Repair immediately, or reclassify to Class 1 speeds.
- c. Remove the segment of track from service.

Feedback & Evaluation

Correct Answer(s)

a

Correct Feedback

Class 2 and 3 track can have a gage measurement between 4 feet 8 inches and 4 feet 9 3/4 inches.

Select the correct response.

9. A segment of Class 3 track has a surface profile deviation of 1 1/2 inches. What is the maximum Class of Track for which this measurement is within the limits prescribed by the Track Safety Standards?

- a. Class 1
- b. Class 2
- c. Class 3
- d. Class 4

Feedback & Evaluation

Correct Answer(s)

d

Correct Feedback

A surface profile deviation of 1 1/2 inches is within the limits prescribed by the Track Safety Standards for Class 4 track.

Select the correct response.

10. On a segment of Class 3 track, you obtain a mid-offset surface measurement of 2 1/2 inches, using 1 inch offset blocks. What is the surface deviation?

- a. 1 inch
- b. 1 1/2 inches
- c. 2 inches
- d. 2 1/2 inches

Feedback & Evaluation

Correct Answer(s)

b

Correct Feedback

The offset block measurement must be subtracted from the mid-offset measurement. (2 1/2 inch mid-offset measurement inch offset block = 1 1/2 inches surface deviation)

Select the correct response.

11. A cross level measurement in tangent track is 2 3/4 inches. Is this within Class 1 Track Safety Standards?

- a. Yes
- b. No

Feedback & Evaluation

Correct Answer(s)

a

Correct Feedback

Class 1 track can have cross level measurements as high as 3 inches.

Select the correct response.

12. A segment of Class 2 track has a reverse cross level measurement of 3 inches. According to the for 49 CFR 213.9, what is the next course of action after you have established that the

segment of track does not meet the requirements for Class 2 and you are unable to correct the defect before the next train?

- a. Continue track inspection.
- b. Reclassify the segment of track to meet the requirements of another class.
- c. Remove the segment of track from service.

Feedback & Evaluation

Correct Answer(s)

b

Correct Feedback

The reverse cross level measurement exceeds the limits prescribed by the Track Safety Standards for Class 2 track. In this case the next course of action is to reclassify the segment of track to meet the requirements of another class, if deemed safe, which would be Class 1 in this case.

Select the correct response.

13. A segment of Class 2 track has a difference in cross level of 2 1/2 inches. Is this within the limits prescribed by the Track Safety Standards for Class 2 track?

- a. Yes
- b. No

Feedback & Evaluation

Correct Answer(s)

b

Correct Feedback

In this case, the difference in cross level measurement exceeds the limits prescribed by the Track Safety Standards for Class 2 track.

Select the correct response.

14. On a segment of Class 2 track, the initial cross level measurement taken is 1 3/4 inches. Another measurement taken within 62 feet of the initial measurement is 3/4 inch. What is the difference in cross level?

- a. 1 inch
- b. 1 1/2 inches
- c. 2 1/4 inches
- d. 2 1/2 inches

Feedback & Evaluation

Correct Answer(s)

d

Correct Feedback

Difference in cross level is obtained by subtracting the lower measurement from the higher measurement. In this case, 1 inches minus 3/4 inch = 2 1/2 inches.

Select the correct response.

Select the correct response.

15. A segment of Class 3 track has a variation in cross level of 2 1/4 inches. What remedial action is required?

- a. The deviation does not exceed track safety standards. Arrange for prompt repair to avoid a track safety violation.
- b. Reclassify the segment of track to Class 2.
- c. Reclassify the segment of track to Class 1.
- d. Remove the segment of track from service and repair.

Feedback & Evaluation

Correct Answer(s)

d

Correct Feedback

2 1/4 inches exceeds the acceptable variation in cross level measurements for all classes of track. Given the severity of the variation in cross level, the segment of track must be removed from service or operated at Class 1 for 30 days if authorized by a qualified person.

Select the correct response.

16. On a segment of Class 3 curved track, a cross level measurement of 1 3/4 inches and another cross level measurement of 3 1/4 inches, 31 feet away, were taken. What is the variation in cross level?

- a. 1 inch
- b. 1 1/2 inches
- c. 2 1/4 inches
- d. 2 1/2 inches

Feedback & Evaluation

Correct Answer(s)

b

Correct Feedback

Variation in cross level is obtained by subtracting the lower measurement from the higher measurement. In this case, 3 1/4 inches – 1 3/4 inches = 1 1/2 inches.

Select the correct response.

17. A segment of track has a runoff measurement of 4 inches. Is this acceptable for Class 1 track?

- a. Yes
- b. No

Feedback & Evaluation

Correct Answer(s)

b

Correct Feedback

Class 1 track cannot have runoff measurements greater than 3 ½ inches. Therefore, this is not an acceptable measurement.

Select the correct response.

18. A segment of Class 3 tangent track has a deviation in alignment of 2 1/8 inches. Is this within the limits prescribed by the Track Safety Standards for Class 3 track?

- a. Yes
- b. No

Feedback & Evaluation

Correct Answer(s)

b

Correct Feedback

In this case, the alignment deviation exceeds Class 3 limits.

Select the correct response.

19. On a Class 3 segment of track, the mid-offset alignment measurement is 4 1/8 inches, using 2-inch offset blocks. What is the out-of-line measurement?

- a. 1 inch
- b. 1 1/2 inches
- c. 2 1/8 inches
- d. 2 3/4 inches

Feedback & Evaluation

Correct Answer(s)

c

Correct Feedback

The offset block measurement must be subtracted from the mid-offset measurement. In this case, 4 1/8 inches - 2 inch = a total out-of-line measurement of 2 1/8 inches.

Select the correct response.

20. A segment of Class 4 curved track has a mid-ordinate measurement of 3 inches, using a 62 foot chord, at the point of concern. The average curvature is 5 degrees. What is the average curve mid-ordinate in inches and how far out of line is the point of concern?

- a. 5 inches; 1 inch
- b. 5 inches; 1 1/2 inches
- c. 5 inches; 2 inches
- d. 5 1/2 inches; 2 1/2 inches

Feedback & Evaluation

Correct Answer(s)

c

Correct Feedback

On segments of curved track, the misalignment is calculated by subtracting the average curvature around the point of concern from the measured alignment. In this case, 5 inches of average curvature - 3 inch mid-ordinate measurement = inches of misalignment.

Select the correct response.

21. A segment of track has an actual elevation of 1 1/2 inches that is obtained on a 2 degree 30 minute curve. What is the maximum allowable speed at point of concern?

- a. 46 mph
- b. 51 mph
- c. 57 mph
- d. 67 mph

Feedback & Evaluation

Correct Answer(s)

b

Correct Feedback

A track segment with a cross level reading of 1 1/2 inches on a 2 degree 30 minute curve has a Vmax of 51 mph according the Vmax Table.

Select the correct response.

22. On a line where freight train speeds are 40 mph, a cross level measurement of 1 1/2 inches is obtained on a 2 degree 30 minute curve. What immediate action is required?

- a. No immediate action is required. The deviation does not exceed track safety standards.
- b. Arrange for prompt repair.
- c. Repair immediately, or reclassify the segment of track to meet the requirements of another class.
- d. Remove the segment of track from service.

Feedback & Evaluation

Correct Answer(s)

c

Correct Feedback

A segment of track that has a 2 degree 30 minute curve with a cross level measurement of 1 1/2 inches has a Vmax of 51 mph. Therefore, the deviation does not exceed track safety standards.

Select the correct response.

23. You are inspecting track after heavy rains and see that the drainage facilities have cleared away the water. However, there are dead branches and debris resting against the wood pilings of a bridge. What must you do?

- a. Note the defect on the report and notify the proper authority for vegetation removal action.

- b. Take no immediate action.
- c. Assure that all safety procedures are in place and remove the debris.

Feedback & Evaluation

Correct Answer(s)

c

Correct Feedback

Remove the debris to accommodate expected water flow for the area concerned.

Select all the correct responses.

24. Which of the following are possible ballast defects?

- a. Ballast with wide shoulders.
- b. Cribs that are not full.
- c. Cribs that have no gaps at the ends of ties.
- d. Cribs that have fouled ballast.
- e. Cribs that feature pumping and hanging ties.

Feedback & Evaluation

Correct Answer(s)

b, d, e

Correct Feedback

Other ballast defects include ballast that has low or narrow shoulders and cribs that have gaps at the ends of ties.

Select the correct response.

25. You notice upon inspection of Class 1 track that the center of the nearest non-defective tie is 16 inches and 24 inches from the centerline of the joint. Is this a defect?

- a. Yes
- b. No

Feedback & Evaluation

Correct Answer(s)

b

Correct Feedback

Class 1 track must have one crosstie whose centerline is within 24 inches of each rail joint location.

Select all the correct responses.

26. Which of the following make a crosstie defective?

- a. It is broken through.
- b. It is split enough that the ballast comes through.
- c. The tie plate has moved sideways 1/4 inch on the crosstie.

- d. It is cut through by the tie plate to more than 20% of the crosstie's thickness.

Feedback & Evaluation

Correct Answer(s)

a, b

Correct Feedback

The crosstie would also have been defective if the tie plate moved sideways 1/2 inch and cut through by more than 40% the crosstie's thickness.

Select the correct response.

27. During your rail inspection, you find two mismatched rails on Class 1 track with 1/4 inch on the tread and gage side. Does this exceed Track Safety Standards for Class 1 track?

- a. Yes
b. No

Feedback & Evaluation

Correct Answer(s)

b

Correct Feedback

For Class 1 track, any mismatch of rails at joints must be no more than 1/4 inch on the tread or gage side. Therefore, this example is within the limits prescribed by the Track Safety Standards for Class 1 track.

Select the correct response.

28. Railroad employees that maintain Continuous Welded Rail (CWR) must be trained in CWR procedures.

- a. True
b. False

Feedback & Evaluation

Correct Answer(s)

a

Correct Feedback

Training is required.

Select the correct response.

29. What is the minimum number of bolts that must be installed at each rail end in each joint on CWR?

- a. One
b. Two
c. Three
d. Four

Feedback & Evaluation

Correct Answer(s)

b

Correct Feedback

A minimum of two bolts must be installed at each rail end.

Select the correct response.

30. If you locate a rail fastener defect, it is important to repair it to maintain proper gage.

- a. True
- b. False

Feedback & Evaluation

Correct Answer(s)

a

Correct Feedback

If a defect is found, the rail fasteners must be repaired to maintain gage.

Select the correct response.

31. Tie plates are considered defective if they are under the running rails on less than ____ of any ____ consecutive cross-ties in Classes 3 through 5.

- a. 4; 6
- b. 6; 8
- c. 8; 10
- d. 10; 12

Feedback & Evaluation

Correct Answer(s)

c

Correct Feedback

Tie plates under the running rails on less than 8 of any 10 consecutive cross-ties in Classes 3 through 5 track are considered defective.

Select the correct response.

32. How often must you inspect each switch, turnout, track crossing and moveable bridge rail assembly or other transition device that is used more than once a month?

- a. Every week
- b. Every two weeks
- c. Once a month
- d. Every time it is used

Feedback & Evaluation

Correct Answer(s)

c

Correct Feedback

These items must be inspected at least once a month if they are used more than once a month.

Select the correct response.

33. When checking for defects, be sure that the flange way width for turnouts and track crossings is _____ inch(s) wide.

- a. $\frac{5}{8}$
- b. 1
- c. 1 $\frac{1}{4}$
- d. 1 $\frac{1}{2}$

Feedback & Evaluation

Correct Answer(s)

d

Correct Feedback

Flange way width must be at least 1 $\frac{1}{2}$ inches wide.

Select the correct response.

34. Each switch must be maintained so that the outer edge of the wheel tread cannot contact the _____.

- a. Tie plate
- b. Rail fastening system
- c. Field side of the stock rail
- d. Gage side of the stock rail

Feedback & Evaluation

Correct Answer(s)

d

Correct Feedback

The gage side of the stock rail must be maintained accordingly to prevent the outer edge of the wheel tread from damaging the rail.

Select the correct response.

35. You have just inspected the turnout to frog section. What is the maximum wear limit of the frog point?

- a. $\frac{3}{8}$ inch down and 8 inches back
- b. $\frac{5}{8}$ inch down and 6 inches back
- c. $\frac{1}{2}$ inch down and 4 inches back
- d. $\frac{3}{4}$ inch down and 8 inches back

Correct Answer(s)

b

Correct Feedback

If you find a frog point that is battered 5/8 inch down and 6 inches back from the frog point, immediately fix or replace.

Select the correct response.

36. On a spring rail frog, the clearance between the hold down housing and horn must be more than _____ inch.

- a. 1/4
- b. 1/2
- c. 3/4
- d. 1

Feedback & Evaluation

Correct Answer(s)

a

Correct Feedback

On a spring rail frog, the clearance between the hold down housing and horn should be no more than 1/4 inch.

Select the correct response.

37. You have just inspected the turnout to frog section. What is the maximum wear limit of the raised guard on a self-guarded frog?

- a. 1/2 inch
- b. 3/8 inch
- c. 5/8 inch
- d. 1 inch

Feedback & Evaluation

Correct Answer(s)

b

Correct Feedback

The raised guard on a self-guarded frog must not be worn to more than 3/8 inch.

Select the correct response.

38. The maximum allowable operating speed for freight trains on Class 1 track is _____ mph.

- a. 25
- b. 10

- c. 40
- d. 60

Feedback & Evaluation

Correct Answer(s)

b

Correct Feedback

10 mph is the maximum allowable operating speed for freight trains on Class 1 track (49CFR 213.9).

Select the correct response.

39. The maximum allowable operating speed for freight trains on Class 2 track is ____ mph.

- a. 25
- b. 10
- c. 40
- d. 60

Feedback & Evaluation

Correct Answer(s)

a

Correct Feedback

25 mph is the maximum allowable operating speed for freight trains on Class 1 track (49CFR 213.9).

Select the correct response.

40. The maximum allowable operating speed for freight trains on Class 3 track is ____ mph.

- a. 25
- b. 10
- c. 40
- d. 60

Feedback & Evaluation

Correct Answer(s)

c

Correct Feedback

40 mph is the maximum allowable operating speed for freight trains on Class 1 track (49CFR 213.9).