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**Federal Wage System
Job Grading Standards**



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**FEDERAL WAGE SYSTEM
JOB GRADING
STANDARD
FOR
RAILROAD REPAIRING,
3546**



**Workforce Compensation
and Performance Service**



RAILROAD REPAIRING, 3546

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WORK COVERED

This standard covers the nonsupervisory work involved in installing, removing, aligning, maintaining, and repairing rails, ties, ballast, switches, frogs, joints and other parts of railroad tracks and roadbeds using hand operated power tools and other manually operated equipment. The work requires a knowledge of the layout and maintenance requirements of tracks, roadbeds, and their parts, and ability to find and repair defects in them using specialized railroad maintenance equipment.

WORK NOT COVERED

- Operation of rail motor cars and railroad maintenance mobile, self-propelled vehicles. (See [Job Grading Standard for Railroad Maintenance Vehicle Operating, 5738.](#))
- Operation of locomotives, locomotive cranes, and engineering equipment without flanged wheels. (See [Job Grading Standards for Locomotive Engineering, 5737](#), [Engineering Equipment Operating, 5716](#), and [Crane Operating, 5725.](#))
- Work limited to hand shoveling, digging, and similar manual laboring work. (See [Job Grading Standard for Laboring, 3502.](#))

TITLES

Jobs covered by this standard are titled: *Railroad Repairer.*

GRADE LEVELS

This standard describes two levels, grade 5 and grade 8. If jobs differ substantially from the level of skill, knowledge, and other work requirements described for these grades, they may be graded at other levels based on the application of sound job grading methods.

NOTE TO USERS

Many jobs involving railroad repairer work may have one or more duties covered by the [Job Grading Standard for Railroad Maintenance Vehicle Operating, 5738](#). For such jobs, both standards (Railroad Repairer, 3546, and Railroad Maintenance Vehicle Operator, 5738) should be used and the job should be classified in accordance with the OPM policy for mixed jobs as described in the [Introduction to the Federal Wage System Job Grading System, Section II, Assigning Grades to Jobs.](#)

3546-5**RAILROAD REPAIRER, GRADE 5****3546-5**

General: Grade 5 railroad repairers, using knowledge and skill covering a variety of basic manual railroad repair techniques, perform a variety of routine, recurring track repairs and preventive maintenance services. For example, grade 5 repairers typically perform many of the following duties or comparable work:

- Check tracks to visually find obvious defects such as loose spikes, rotted ties, broken rail, uneven joints, washed out ballast, and clogged drainage systems;
- Align straight sections of track; gage or measure track width and level; jack rail, move rail, and firm ballast;
- Under direction, bend rail and surface or align curved, level sections of track;
- Check operation of manually thrown switches, lubricate them, make minor adjustments for smooth operation, replace bitch latches or stands as necessary;
- Remove and install ties, track sections, switches, tie plates, bolts, spikes, joints (angle) bars, gauge rods, rail anchors, and similar track parts using standard techniques and replacement or installation requirements;
- Cut rail to designated length and/or install small rail sections; and
- Set up, start up, and hook up power sources such as combustion powered compressors or generators.

Skill and Knowledge: Grade 5 repairers, in accomplishing work such as that described above, apply skills and knowledge such as the following:

- Ability to use individual hand operated power tools such as some of the following: pneumatic tampers, gasoline powered rail saw or drill, spike puller, grinder, spike driver, and large power wrench. (This is in addition to the use of common railroad repair nonpower tools which may be used by lower level laborers and which the repairers should be skilled in using, such as: spilt maul or adz; claw bar, tamping bar, wrenching bar, crow bar and/or lining bar; track chisel; hand file; hand operated rail drill; rail bender; wrench; rail tongs; tie tongs; and track punch.)
- Knowledge of tie insertion and removal techniques, tie spacing, and tie tapering; knowledge of normal track width, level, and alignment on straight sections, knowledge of switch stand operation, lubrication, and adjustment including the proper condition and appearance of the moveable rail and the guard rail; knowledge of normal joint location, bolting requirements, and use of rail anchors; knowledge of normal drainage, ballast firmness, and general elevation of straight track and simple curves;

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- Knowledge of common defects, such as broken rail, crushed head, broken base, rotted tie, loose spikes, and unfirm ballast sufficient to determine whether minor repairs (such as switching spikes, plugging holes, tightening bolts, adding gage rods, or firming ballast) will likely be sufficient; and
- Skill in using rail gages and level boards to maintain proper distance between rails and to keep rails level with each other; skill in visually detecting low spots or high spots in angle sections and in visually detecting out-of-line track.

Responsibility: Grade 5 railroad repairers receive detailed instructions which spell out the area to work, defects to look for, and repairs to make. They are expected to know and select the appropriate tools for the planned repairs. They may select the type and quantity of some repair materials based on a supervisor's instructions or use materials delivered to the worksite.

Grade 5 repairers have their work checked or inspected both in progress and upon completion. Although most work is performed in accordance with standard, frequently used procedures (or under close guidance), grade 5 repairers are relied upon to remain aware of the possible consequences of rail failures, to report newly found defects, and to follow all safety regulations and practices.

Physical Effort: Grade 5 railroad repairers perform extremely strenuous work for long periods. For example, they frequently lift and carry tools and equipment weighing over 36 kilograms (80 pounds) or exert comparable effort in moving and positioning railroad track components. Their work involves frequent or continuous bending, reaching, pushing, kneeling, lifting, and similar body and limb movement.

Working Conditions: Grade 5 railroad repairers typically work outside, often in seasonal temperature and weather extremes and are subject to the following conditions: loud machinery noises; possible burns from hot equipment; fumes from creosote, insect sprays, and smoke; falls from hazardous footing; dirt, cuts, and grease or oil; insect bites; and possible injuries from handling equipment. They may wear protective gloves, hard-toe shoes, safety glasses, and similar protective devices, some of which may be uncomfortable and worn for long periods.

3546-8**RAILROAD REPAIRER, GRADE 8****3546-8**

General: Grade 8 railroad repairers perform railroad track repairs which involve checking for the full range of track defects, recommending necessary repairs, coordinating work with mobile equipment operators, welders, crane operators, laborers, and others, on some repairs; and accomplishing railroad repair projects such as rail or tie replacement for an installation. In comparison to grade 5 work (which involves making routine repairs under close supervision or following detailed instructions), grade 8 repairers work more independently; perform more extensive trouble-shooting, planning, and coordination; and apply greater skills in accomplishing more complex work such as alignment, superelevation, or surfacing of curves track.

Skill and Knowledge: Grade 8 repairers, in accomplishing the work described above, use all of the skill and knowledge described at the Grade 5 level and, in addition, the following:

- Ability to determine the need for any of the full range of manual maintenance, including aligning, superelevating, surfacing, shaping, renewing, replacing, and repairing all railroad track parts; must know the proper condition of all track and railway components including drainage and vegetation control requirements and the operation of mechanical switches, signals, and gates;
- Ability to detect probable causes of defects requiring overly frequent maintenance on some track areas; e.g., improper elevation of the outer rail as the cause of frequent shifting of track;
- Ability to determine extent of repair necessary because of defects such as various types of fissures, splits, crushed or flattened heads, cracked bases, shelly spots and other fractures, overly-tight clearances, shifting track, and worn switch points;
- Ability to coordinate repair work with railroad maintenance vehicle operators, welders, crane operators, railroad repairers, and laborers, as required, along with skill in the use of full range of normal repair techniques involved in major repair projects such as tie and track replacement for an entire installation;
- Skill in using the tools, devices, and techniques described at grade 5 and, in addition, using a spot board to determine smoothness, using the string lining technique for determining proper curvature on simple curves, or using comparable techniques in addition to making visual assessments of track condition.

Responsibility: Grade 8 repairers accomplish most work independently, based on general instructions as to type of repair, work area, and time allowance. They receive little guidance except on complex assignments such as superelevating rail or installing new track on curves grades, repairing accident-damaged track, or computing curvature on 5 curves. They know procedures and techniques for more complex work and do more extensive troubleshooting than is typical of grade 5 work. They are expected to be able to judge the seriousness of the full range of common track and railway defects; to plan and lay out all but most complex repairs;

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to determine whether unplanned repairs are necessary to immediately correct serious defects; to accomplish the troubleshooting and repairs as described for this level (sometimes involving the help of one or a few laborers or equipment operators); and to observe and enforce safety rules and practices. The work of grade 8 repairers must pass any required inspection, but the repairer is relied upon to complete most repair work subject only to occasional spot check, observation, and coordination with other repair work.

Physical Effort: Physical effort at this level is essentially the same as those described for the [grade 5 railroad repairer](#).

Working Condition: Working conditions at this level are essentially the same as those described for the [grade 5 railroad repairer](#).