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**Federal Wage System
Job Grading Standards**



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**FEDERAL WAGE SYSTEM
JOB GRADING
STANDARD
FOR
RAILROAD MAINTENANCE
VEHICLE OPERATING,
5738**



**Workforce Compensation
and Performance Service**



RAILROAD MAINTENANCE VEHICLE OPERATING, 5738

TABLE OF CONTENTS

WORK COVERED	3
WORK NOT COVERED	3
TITLES	3
GRADE LEVELS	3
RAILROAD MAINTENANCE VEHICLE OPERATOR, GRADE 5	4
RAILROAD MAINTENANCE VEHICLE OPERATOR, GRADE 7	6
RAILROAD MAINTENANCE VEHICLE OPERATOR, GRADE 9	8

WORK COVERED

This standard is used to grade work involved in the operation of self-propelled, flanged wheel railroad maintenance vehicles and equipment to lay, remove, repair, elevate, align, and maintain ties, rails, ballast, and other parts of the railway, and to transport maintenance supplies, tools, equipment, and personnel. This work requires the ability to safely operate one or more flanged wheel railroad maintenance vehicles, knowledge of railway maintenance and repair methods and requirements, and knowledge of track system layout, operating rules, and maintenance procedures.

WORK NOT COVERED

The following kinds of work are not covered by this standard.

- Operating locomotives, cranes, tractors, and engineering equipment. (See Series for [Locomotive Engineering, 5737](#); [Crane Operating, 5725](#); [Tractor Operating, 5705](#); [Engineering Equipment Operating, 5716](#).)
- Manually accomplishing railroad repair Work not requiring the operation of flanged wheel, self-propelled railroad maintenance vehicles. (See series for [Railroad Repairing, 3546](#) and [Laboring, 3502](#).)

TITLES

Jobs graded by this standard are to be titled *Railroad Maintenance Vehicle Operator*.

GRADE LEVELS

This standard describes three grade levels: 5, 7, and 9. If jobs differ substantially from the skill, knowledge, and work requirements in the grades described in this standard, they may warrant grading at levels other than those described based upon application of sound job grading methods.



5738-5**RAILROAD MAINTENANCE VEHICLE
OPERATOR, GRADE 5****5738-5**

General: Grade 5 operators drive rail motorcars (or similar vehicles equipped to run on railroad tracks) to haul maintenance supplies, personnel, and equipment such as sprayers, mowers, sweepers, cleaners, winches, generators, and Compressors. The vehicles operated may include one or more attached trailers and may carry up to two tons of cargo, in addition to passengers. Grade 5 operators typically are required to drive rail motorcars and perform manual maintenance work. However, some operators at this level may be in positions designed to permit the learning of skills and knowledge needed to operate one or more of the railroad maintenance vehicles described at higher levels in this standard.

Skill and Knowledge: Grade 5 operators must have and apply basic skills required to:

- Use the appropriate controls to start, accelerate, brake, stop, shift gears, reverse direction, leave the track, etc.;
- Properly attach trailers, distribute the weight of heavy tools, supplies, and equipment; and arrange cargo to simplify removal at one or more destination points;
- Perform minor vehicle maintenance, such as checking fuel, oil, and battery fluid levels, as required.

At this level, the operators must know and follow required safety, signaling, and track use requirements and restrictions. The operators also must know routine railway maintenance practices and are expected to use this knowledge to recognize and report hazards to vehicle operation such as broken, defective, or obstructed track.

Some positions may also require additional ability to:

- Manually perform heavy railroad maintenance work;
- Learn to operate equipment such as that described at the grade 7 level in this standard.

Responsibility: Grade 5 operators receive instructions indicating the destination, purpose of trip, and the maintenance supplies, equipment, and personnel to transport. On routine recurrent assignments, the operators may be told the maintenance work to be done and are relied on to properly load the appropriate equipment, or to see that it is properly loaded; to select the best route and follow specific routes and schedules which have been cleared with a dispatcher; and to follow all safety and operating rules and requirements.

The operators must remain alert and operate carefully to avoid accidents, injury to passengers or others, or damage to cargo and equipment. The operators' work is observed and appraised in terms of skill in operating equipment, adherence to operating and safety rules and procedures, and compliance with instructions.



5738-5**5738-5**

Physical Effort: The operators usually exert high physical effort in reaching, bending, turning, and moving arms, hands, legs, and feet to operate hand and foot-controls and maintain maximum vision.

In performing work such as loading, unloading, and arranging cargo, the operators frequently lift, move, and handle items weighing up to 23 kilograms (50 pounds), and may lift heavier items, usually with the help of other workers.

Working Conditions: The operators load and operate equipment in all kinds of weather. Some vehicles have open or partly open cabs exposing the operator to wind, rain, heat, cold, and other adverse conditions. The operators are subject to moderate noise, vibration, and jarring and swaying motions while operating. The operators are also frequently exposed to irritating fumes from exhaust and creosote, and to possible accidents while walking and operating vehicles over tracks and ties, and while loading and unloading vehicles and trailers.

5738-7

**RAILROAD MAINTENANCE VEHICLE
OPERATOR, GRADE 7**

5738-7

General: Grade 7 railroad maintenance vehicle operators drive and operate the utility controls of flanged wheel railroad repair equipment to perform a specialized segment or limited range of railroad maintenance comparable to one of the following maintenance operations:

- Rail alignment on straight sections of track and, with the guidance of a higher grade worker, on superelevated track (i.e., curved track with the outer rail at a higher elevation); or
- Tie replacement, spacing, and spiking; or
- Ballast maintenance.

For example, the grade 7 operators operate one or two of the following types of equipment to perform the indicated maintenance work or comparable work:

- Operate rail or track liner vehicles to align, space, and surface straight track and simple curves;
- Operate scarifier and tie inserter vehicles to rout out tie holes and to remove or insert ties;
- Operate mobile spike driving and tie pulling equipment (including railcar to drive spikes into ties on both sides of both rails, to space ties, and to remove and insert ties);
- Operate ballast regulators to dig, move, pile, and spread ballast.

The grade 7 operators also perform basic maintenance on the equipment being used.

Skill and Knowledge: Grade 7 operators are skilled in driving and in manipulating the controls of railroad maintenance vehicles to accomplish specialized maintenance work. The operators know and use appropriate controls to start, accelerate, brake, stop, reverse, and position these vehicles, and give signals. Grade 7 operators also apply skill in manipulating additional clutches, levers, and other controls to operate the utility features of vehicles to perform some of the following:

- Raise, lower, or position blades, tamping heads, etc.;
- Propel a very heavy weight against a rail to align it;
- Lift segments of rail and ties, or hold the track firmly in place;
- Jack up the vehicle and turn it around (in place);
- Tamp ballast on both sides of one rail and tie;

5738-7**5738-7**

- Spread ballast or scrape track bed edges:
- Dig holes for ties and pull ties into holes;
- Remove, insert, space, and spike ties.

The operators are skilled in alternating the use of various driving and utility control, and sometimes use several different controls at the same time or in very close sequence; this requires greater application of hand, foot, and eye coordination than is normally required for grade 5 work.

Grade 7 operators also typically know and perform basic maintenance tasks such as: checking and adding fuel, water, oil, and lubricants; changing belts, loses, or filters; checking for air or fluid leaks, and checking utility systems for proper operation.

Responsibility: Grade 5 operators receive instructions from a supervisor or higher grade worker. The operators are told where to work and the standards or requirements which the work must meet. The operators may have to obtain, or work within a trip plan or track use schedule approved by a dispatcher or other official. Grade 7 operators must apply intense concentration in both driving and operating the utility features of the mobile maintenance equipment described for this level, and must remain constantly alert to prevent injury to others or damage to equipment.

A supervisor or higher graded worker frequently observes, checks, or oversees the maintenance work accomplished to insure that maintenance standards and requirements are met. For example, a higher grade worker provides guidance for attaining proper curvature and elevation of track, provides guidance when new procedures are introduced, and frequently checks or oversees the maintenance work while in progress.

Physical Effort: Grade 7 operators apply continuous physical effort in manipulating equipment controls with hands and feet, and stretching and moving to maintain vision and observe work being accomplished. The operators perform their work while subject to machine movement which may include jolting, jarring, rocking, swaying, lifting, lowering, and vibrating movements. Grade 7 operators also typically lift and move heavy items weighing up to 23 kilograms (50 pounds).

Working Conditions: Grade 7 operators usually work in open cabs or operator's platforms where the operators are exposed to a wide range of weather and temperature conditions; high noise levels; fumes and odors from fuel, exhaust, lubricants, and creosote; vibration and jolting from equipment operation; and other conditions as described at the grade 5 level.

5738-9**RAILROAD MAINTENANCE VEHICLE
OPERATOR, GRADE 9****5738-9**

General Grade 9 railroad maintenance vehicle operators operate several types of self-propelled railroad maintenance vehicles to perform a wide range of railway maintenance and repair, including ballast, rail, tie, track, and track bed maintenance. At this level the mobile equipment is more difficult to operate than equipment typical of the grade 7 level, or is used to perform more complex railroad maintenance work, or is used to perform a wide or full range of railway maintenance, rather than a specialized segment as described at the grade 7 level. Examples of grade 9 level work include the following:

- Operate maintenance vehicles to align track, insert and remove ties, scarify and shape roadbed, tamp ballast, and super-elevate curved track on grades, using multiple purpose and other complex equipment;
- Serve as equipment operator on assignments involving -- over a period of time -- operation of a wide variety of ballast, tie, track, and track bed maintenance vehicles (such as those described at the grade 7 level) to perform the full range of railroad maintenance;
- Regularly is assigned to the more difficult repair and maintenance projects such as aligning and elevating track on curved grades with super-elevated rails where proper alignment and elevation are difficult to establish and maintain, and repairing areas where derailments or accidents have caused extensive damage which must be repaired within a tight deadline to put the railroad back into operation.

Skill and Knowledge: In performing the full range of railway maintenance, grade 9 operators apply skill in operating most or all of the equipment as described at lower levels and in addition:

- Apply skill in operating multiple purpose or multiple system equipment such as a multiple tamper (which is used to tamp both sides of both rails and both sides of the tie using 16 tamping tools);
- Apply a knowledge of a wide range of railway maintenance methods, including all of the following: aligning, super-elevating surfacing, replacing, and repairing rail, track, and ties; renewing ballast, and shaping or contouring the railway area;
- Apply skill in detecting and repairing (or reporting) rail, track, tie, and railway defects such as misaligned curved sections of track, improper tapering, split and crushed heads, broken rail joint fastenings, improperly elevated rails, broken bases, rotten ties, loose spikes, cracked rails, unfirm or contaminated ballast, poor drainage slopes, uneven joints, and worn switch points;



5738-9**5738-9**

- Apply the ability to determine proper degree of levelness, depth, firmness, angle, and curvature on difficult maintenance assignments, such as aligning and super-elevating curved sections of track on grades (this includes visual method and use of the string lining technique for determining proper curvature on spiraled or compound curve.);
- Apply the ability to perform operator's maintenance on a variety of equipment including minor troubleshooting and repair of external parts in the field when needed;
- Apply the ability to work under pressure in adverse weather or temperature conditions involving extensive repairs to damaged track which must be made within tight deadlines.

Responsibility: Grade -9 operators follow instructions which indicate the general area to repair or maintain, or the specific site needing maintenance, and the extent of repair or maintenance desired in the area. Like the grade 7 operators, the operators are responsible for continuous alertness and safe operation of the vehicles and equipment in use: however, the operators receive less frequent technical guidance and assistance than the grade 7 workers on recurrent work. Because the operator accomplishes the full range of railway maintenance rather than a specialized or limited segment, and because the combination of equipment operating and railroad maintenance procedures the operators uses are wide in range and, in most cases, more difficult to perform, the overall complexity of work performed by grade 9 level operators exceed that at the grade 7 level. In addition, workers at this level are expected to use judgment in determining when to rework an area or whether to do work not specified in initial instructions.

Constant alertness and safe operation, while required at lower levels, are more difficult for grade 9 operators to sustain, because the work involves the use of equipment with more controls, the repair procedures may require more intense concentration, and the work more frequently involves adverse conditions of weather, extensive damage to repair, tight deadlines, and combinations of these conditions.

Physical Effort: The physical effort required at this grade is generally the same as that described for the [grade 7](#) operator. However, grade 9 operators are subject to greater physical strain when operating the more numerous controls that are typical of some of the multiple purpose, multi-system equipment to perform the complex work under the demanding conditions described for this level. The operators may also exert more intense effort in continuously observing and checking to insure that machinery is operating properly since a supervisor is less frequently available to help with this, or because the work must be accomplished within unusually tight deadlines.

Working Conditions: Working conditions at this grade are generally the same as those described for the [grade 7](#) operator. However, because the operators are skilled in more types of equipment operation and railway maintenance procedures, the grade 9 operators are typically more often called upon to work in bad weather and other adverse or emergency conditions.